Deutsche Telekom

The 2020 financial year

LIFE IS FOR SHARING.

Contents

Selected financial data of the Group

billions of €		Change compared to prior year %	2020	2019	2018	2017	2016	2015	2014	2013
Revenue and earnings										
Net revenue		25.4	101.0	80.5	75.7	74.9	73.1	69.2	62.7	60.1
Of which: domestic	%		24.5	30.5	32.2	32.8	33.7	36.2	39.9	42.2
Of which: international	%		75.5	69.5	67.8	67.2	66.3	63.8	60.1	57.8
Profit (loss) from operations (EBIT)		35.4	12.8	9.5	8.0	9.4	9.2	7.0	7.2	4.9
Net profit (loss)		7.5	4.2	3.9	2.2	3.5	2.7	3.3	2.9	0.9
Net profit (loss) (adjusted for special factors)		15.5	5.7	4.9	4.5	6.0	4.1	4.1	2.4	2.8
EBITDA		42.5	38.6	27.1	21.8	24.0	22.5	18.4	17.8	15.8
EBITDA AL[a]		43.4	33.2	23.1	21.6	n.a.	n.a.	n.a.	n.a.	n.a.
EBITDA (adjusted for special factors)		40.6	40.4	28.7	23.3	22.2	21.4	19.9	17.6	17.4
EBITDA AL (adjusted for special factors)[a]		41.6	35.0	24.7	23.1	n.a.	n.a.	n.a.	n.a.	n.a.
EBITDA AL margin (adjusted for special factors)[a]	%		34.7	30.7	30.5	n.a.	n.a.	n.a.	n.a.	n.a.
Profitability										
ROCE	%		4.6	5.1	4.7	5.8	5.7	4.8	5.5	3.8
Statement of financial position										
Total assets		55.2	264.9	170.7	145.4	141.3	148.5	143.9	129.4	118.1
Shareholders' equity		56.9	72.6	46.2	43.4	42.5	38.8	38.2	34.1	32.1
Equity ratio	%		27.4	27.1	29.9	30.0	26.2	26.5	26.3	27.1
Net debt		58.1	120.2	76.0	55.4	50.8	50.0	47.6	42.5	39.1
Relative debt (Net debt/EBITDA (adjusted for special factors))			2.78	2.65	2.4	2.3	2.3	2.4	2.4	2.2
Cash flows										
Net cash from operating activities		2.9	23.7	23.1	17.9	17.2	15.5	15.0	13.4	13.0
Cash capex		30.2	(18.7)	(14.4)	(12.5)	(19.5)	(13.6)	(14.6)	(11.8)	(11.1)
Cash capex (before spectrum investment)		29.4	(17.0)	(13.1)	(12.2)	(12.1)	(11.0)	(10.8)	(9.5)	(8.9)
Free cash flow (before dividend payments and spectrum investment)[b]		6.1	10.8	10.1	6.2	5.5	4.9	4.5	4.1	4.6
Free cash flow AL (before dividend payments and spectrum investment)[a, b]		(10.3)	6.3	7.0	6.1	n.a.	n.a.	n.a.	n.a.	n.a.
Net cash used in investing activities		59.2	(22.6)	(14.2)	(14.3)	(16.8)	(13.6)	(15.0)	(10.8)	(9.9)
Net cash from (used in) financing activities		n.a.	7.6	(7.1)	(3.3)	(4.6)	(1.3)	(0.9)	(3.4)	1.0
Employees										
Average number of employees (full-time equivalents, without trainees)	thousands	5.0	224	213	216	216	221	226	228	230
Revenue per employee	thousands of €	19.4	451.8	378.4	349.7	346.2	331.4	305.9	274.5	261.8
T-Share – key figures										
Earnings per share	€	7.3	0.88	0.82	0.46	0.74	0.58	0.71	0.65	0.21
Adjusted earnings per share	€	15.4	1.20	1.04	0.96	1.28	0.89	0.90	0.54	0.63
Dividend per share[c]	€	0.0	0.60	0.60	0.70	0.65	0.60	0.55	0.50	0.50
Total dividend[d]	billions of €	0.0	2.8	2.8	3.3	3.1	2.8	2.5	2.3	2.2
Total number of ordinary shares at the reporting date[e]	millions	0.0	4,761	4,761	4,761	4,761	4,677	4,607	4,536	4,451

[a] Comparatives for 2018 were calculated on a pro forma basis for the key performance indicators redefined as of January 1, 2019 following the introduction of the IFRS 16 accounting standard.
[b] And before interest payments for zero-coupon bonds and termination of forward-payer swaps at T-Mobile US (both in 2020), as well as before AT&T transaction and compensation payments for MetroPCS employees (both in 2013).
[c] Subject to approval by the relevant bodies and the fulfillment of other legal requirements.
[d] Subject to approval by the 2021 shareholders' meeting concerning the dividend payments for the 2020 financial year. For further information, please refer to Note 34 "Dividend per share" in the notes to the consolidated financial statements.
[e] Including treasury shares held by Deutsche Telekom AG.

millions	Change compared to prior year %	2020	2019	2018	2017	2016	2015	2014	2013
Fixed-network and mobile customers									
Mobile customers[a]	31.4	241.8	184.0	178.4	168.4	165.0	156.4	150.5	142.5
Fixed-network lines	(0.7)	27.4	27.5	27.9	27.9	28.5	29.0	29.8	30.8
Broadband customers[b]	3.5	21.7	21.0	20.2	18.9	18.4	17.8	17.4	17.1

[a] Including T-Mobile US wholesale customers.
[b] Excluding wholesale.

The figures shown in this report were rounded in accordance with standard business rounding principles. As a result, the total indicated may not be equal to the precise sum of the individual figures. Changes were calculated on the basis of millions for greater precision.

Sprint has been included in Deutsche Telekom's consolidated financial statements as a fully consolidated subsidiary since April 1, 2020. This transaction affects the comparability of the figures for the current financial year with the prior-year figures. For further information on the transaction, please refer to the section "Summary of accounting policies – Changes in the composition of the Group and other transactions" in the notes to the consolidated financial statements.

To our shareholders

Letter from the Chairman of the Board of Management

Dear shareholders,
Dear friends of the Company,
2020 was a complicated, stressful, and demanding year to say the least. Even now, we must continue to physically distance from other people where once we sought social togetherness. We wear masks as we go about our daily activities, limit our contact with other people to the bare minimum, and many of us are working from home. Week after week, the situation is putting enormous strain on us all.

But while the effects of the coronavirus pandemic are causing many businesses to feel the pinch, Deutsche Telekom is prospering. Even better: 2020 was a record-breaking year for us, with the highest revenue in our Company's history. I believe there are two main reasons for this:

1. We help in the crisis. Because people want to stay in touch and businesses want to keep working. Without our stable networks, many businesses would have struggled with the transition to remote working.
2. Our employees. Our tech teams, who are out in the field visiting customers at home, looking into their lines or activating fast internet in the street cabinets. The people in the shops serving our customers. And everyone else also working for our success, whether from home or the office. To them, I would like to say a huge thank you for their valuable contribution under such difficult circumstances. Because it is all thanks to them that we remain an anchor of stability throughout the pandemic with infrastructure that society can rely on, day in, day out.

Let's take a look at the situation at our Company right now. After all, the past twelve months were game-changing for Deutsche Telekom, irrespective of coronavirus.

Our net revenue took on a whole new dimension. That is no exaggeration. For the first time ever, we broke the 100-billion-euro revenue barrier in a single financial year. This is an historic achievement. The additional revenue from the business combination with mobile carrier Sprint in the United States was a decisive factor. But we are also growing organically. Our earnings were also up, both in the United States and in business on this side of the Atlantic. Adjusted EBITDA AL (i.e., adjusted EBITDA taking account of depreciation of right-of-use assets and interest expenses on lease liabilities) was right on the mark for 2020. Free cash flow AL was well above our guidance. The figures now presented demonstrate very clearly that Deutsche Telekom is still on a growth course. And we want to keep it that way.

In the United States, the underpinnings are already in place: following the business combination with Sprint, our U.S. subsidiary T-Mobile US is now well-positioned to capture the #1 spot on the most important mobile communications market worldwide. The new T-Mobile US joins the two major rivals Verizon and AT&T in the big league, shattering the duopoly previously enjoyed by these two companies. Not only are we quickly closing the gap to our competitors, but we have already outstripped AT&T in terms of customer numbers and mobile service revenues. The business combination has significantly improved our spectrum holding. Today, we already cover more than 100 million people in the United States with super-fast Ultra Capacity 5G alone. We are set to reach up to 200 million U.S. citizens with coverage in this spectrum band by the end of 2021 and thus offer them exactly what they expect of us: the best 5G network nationwide. That is THE basis for taking forward our successful Un-carrier strategy.

Offering the best-quality networks is and remains our ambition – both in the United States and in Europe. And we are willing to invest record amounts every year to make this happen, pouring EUR 17 billion primarily into our global networks in the year just ended, and EUR 5.5 billion of this in Germany alone.

For a long time, our stated goal was to become the Leading European Telco. We have now not only achieved this goal, but were able to further consolidate and extend our position even given the difficult market environment and the negative impact of coronavirus in 2020. Against this backdrop, we are particularly proud to have enhanced the value of our brand, too. Our Magenta T is worth almost 30 % more today than it was just one year ago. A brand value of USD 51.1 billion puts us ahead of other venerable companies, such as Volkswagen and BMW, and 23rd in a global ranking – directly behind Disney.

Our results of operations also reveal encouraging growth: overall, net revenue increased to EUR 101.0 billion in the year just ended. This represents an increase of 25.4 % on the previous year. In organic terms – in other words, assuming constant exchange rates and the same Group structure – revenue grew by 3.0 %. Adjusted EBITDA AL increased by 41.6 % to EUR 35.0 billion compared with the prior year, while in organic terms growth came in at 7.9 %.

These are all excellent figures. And the decline in one of our financial KPIs does nothing to detract from this: free cash flow AL was down 10.3 % to EUR 6.3 billion (organically the decrease was just 0.6 %). This was due to the costs incurred in the wake of our business combination with Sprint. The synergy effects calculated into our long-term planning, however, are already beginning to materialize. And we anticipated the negative effects, which is why we exceeded our free cash flow AL guidance for 2020 of EUR 6.0 billion. It goes to show once again that we are operating viably and laying the foundation for growth that will safeguard our Company's future. And that is THE basis for taking forward our successful Group strategy.

However, none of this would be possible without our customers' trust in Deutsche Telekom. The confidence you place in us was evident once again in 2020. In mobile communications, we won more than 650,000 customers in Germany under our Telekom and congstar brands. In our other European markets, 670,000 customers subscribed to a new mobile contract with us in the last twelve months. And in the United States, the larger T-Mobile US recorded 5.5 million postpaid net customer additions – more than ever before in its history.

State-of-the-art networks are essential if we are to keep garnering customers with our attractive products and services going forward. We have been busy building these in Germany, adding 1,500 new cell sites to the mobile network alone. Today, we already cover two thirds of the German population with 5G, but we won't stop until everyone is connected. Because enabling digital participation for everyone is our top priority. We are also working to fill mobile coverage gaps – for home and on the move, along freeways and rail routes. In pursuit of this goal, we are venturing into uncharted territory and collaborating directly with our competitors Telefónica and Vodafone to close over 10,000 "gray spots" and "white spots" in the German network.

At the same time, we are modernizing our fixed network: our lines throughout Germany have now all been migrated to the Internet Protocol – marking both a huge technological milestone for us and the conclusion of a mammoth-scale project in 2020. We can now offer broadband lines to more people than ever and much faster than ever, thanks to the new technology. Another plus: it's now also far easier for us to perform remote maintenance on customer lines in the event of issues.

Our efforts are paying off: in 2020 some 400,000 new customers in Germany signed up for a Telekom broadband product. That is the highest figure since 2016. Added to that are another 300,000 customer additions at our European subsidiaries.

And we are not letting up: we continue to plow ahead with our most important project for Germany's future – making gigabit-capable fiber-optic lines available across our fixed network to achieve nationwide FTTH coverage. We ramped up our efforts substantially in 2020 and doubled the pace of the build-out year-on-year to connect around 600,000 households to our FTTH network – more than twice as many as in the previous year. That brings the total up to 2.2 million lines. Our plans for 2021 are ambitious: we want to double the pace yet again and work our way up to a rate of 2 million lines added per year on average. Because we stand by our target: by 2030, every single one of Germany's 43.5 million households should have access to a fiber-optic line. Much of this work will be done by us. We are and will continue to be the driving force behind Germany's digitalization. But we cannot rise to this task alone. Building a full-coverage FTTH network is the challenge of the century. Our competitors need to do their bit, too. We already have trusting partnerships in place with many of them.

Before I finish, I'd like to say a few words about a topic that has faded somewhat from the public eye in recent years: service. We have often been criticized for our service in the past. Today, we are winning multiple awards for it. Why is that? Because we listened closely to our customers' concerns and poured time and money into making the necessary improvements. And the people in our Service team can be counted on: for the first time ever, we won the service equivalent of the Grand Slam in Germany – both our mobile and fixed networks were rated #1 in the service tests of two of the industry's top magazines, Chip and Connect. Our goal for 2021 is to defend this title.

Dear shareholders,

I firmly believe that large companies carry special responsibility, particularly in times of crisis. Deutsche Telekom is growing and today has a global workforce of 226,000 employees. We are prospering, despite the coronavirus crisis. And Deutsche Telekom has always been a company with a keen awareness of its responsibility. We will stay that way.

Our commitment throughout the pandemic reveals just how deeply rooted in our society Deutsche Telekom is. And that we engage above all in those areas where people are at risk of losing some or even all of the ability to participate digitally. Our support initiatives for care homes for the elderly, private households, and schools during the lockdown validate our efforts. As does our dedication to combating discrimination and online hate speech.

In many ways our keen commitment to societal responsibility is a product of an eventful history. At the start of 2020, we celebrated our 25th year of "life" as an AG – a stock corporation under German law. As we reflected on our past, we realized on how many occasions our support has been needed. It helped me see that one of Deutsche Telekom's roles is to get actively involved. This was the case when it came to tackling the Development Program for Eastern Germany launched after reunification. This was the case after the Oder/Odra flood in 1997. This was the case after the 2004 enlargement of the European Union. And this is also the case during the coronavirus pandemic. It is why I have a personal interest in ensuring our employees are aware of the great responsibility which rests on all our shoulders. Because the adage "There is no future without a past" applies to every single person here at Deutsche Telekom.

Our guidance for the coming years still stands. On average, revenue is expected to increase by one to two percent per year through 2021, adjusted EBITDA by two to four percent, and free cash flow by around ten percent. 2020 was without doubt a successful year. Our Company is doing well even during the crisis. That should not be taken for granted. And it makes me optimistic that we will continue to meet our ambitious targets in the coming years.

We want you to benefit from this success. That's why we are proposing a dividend of EUR 0.60 per dividend-bearing share for the 2020 financial year – subject, as always, to approval by the relevant bodies and the fulfillment of other legal requirements. Even during the coronavirus crisis we remain firmly on course. Because Deutsche Telekom is a partner you can rely on anytime, anywhere.

Best regards,

Tim Höttges

Supervisory Board's report to the 2021 shareholders' meeting

The 2020 financial year was characterized by the systematic implementation of the Group strategy and the Group's ongoing transformation in an age of digitalization and technological change. The approval of the business combination of T-Mobile US and Sprint was – and is – one of the most important successes in Deutsche Telekom's history. In the 2020 financial year, business developed well overall, despite the coronavirus pandemic. Deutsche Telekom has managed the coronavirus crisis with the requisite discipline. Its networks remained secure and stable in spite of the huge rise in demand. The network build-out continued on schedule and the Company underscored its ability to perform at the top level throughout the pandemic with special offerings for customers and its strong commitment to service. Deutsche Telekom once again faced intense competitive and regulatory pressure in 2020. The Group held its own in the challenging environment in the telecommunications industry. Strong results brought the 2020 financial year to a successful close. The Group remains on course for growth. The Supervisory Board exercised its functions as an advisory and supervisory body and gave the Board of Management its full support.

Supervisory Board activities in the 2020 financial year

We continually monitored the Board of Management's activities in managing the business and the Group as a whole. Specifically, this supervisory role consisted of ensuring that these activities were lawful, compliant, appropriate, strategically relevant, sustainable, and efficient.

The primary prerequisites for fulfilling this role were the Board of Management's written and oral reports. The Board of Management kept us regularly informed in good time on corporate strategy, planning, business development of the Group and its different segments, the risk situation, risk management, compliance, innovation focuses, and any deviations in the business development from original plans, as well as significant business transactions involving the Company and its significant subsidiaries and associates.

The Board of Management fulfilled its duties to inform quickly and in full. The Board of Management's reports met all statutory requirements, the standards of good corporate governance, and the criteria imposed on them by us with regard to both content and scope. In addition to the reports, we requested and received supplementary information. We reviewed, critically analyzed, and verified the plausibility of these reports and other information.

The Rules of Procedure of the Board of Management and Supervisory Board include a list of transactions and measures for which the Board of Management has to obtain approval from the Supervisory Board. We met with the Board of Management to discuss and thoroughly review the business transactions and measures presented to us in the 2020 financial year for approval in line with this document. We approved the transactions and measures submitted for resolution.

The frequency of plenary and committee meetings mean that we are in close contact with the Board of Management. The Board of Management also reports on individual issues in writing or in discussions between the meetings. In addition, the Chairman of the Supervisory Board is in contact with the Chairman of the Board of Management at regular appointments at which current business transactions, strategy issues, planning, business development, regulation, the risk situation, risk management, and compliance, as well as other significant events, are discussed.

In the 2020 financial year, twelve Supervisory Board meetings, a one-day off-site conference, and 34 meetings of the Supervisory Board committees took place. The overall attendance rate was around 98 %. Each of the Supervisory Board members attended more than three quarters of the meetings of the Supervisory Board and the respective committees on which they sit. Given the coronavirus-induced situation, most members participated virtually. Members unable to attend the meeting usually participated in resolutions by submitting their voting instructions in writing.

Resolutions were also adopted by way of a written voting procedure.

In the meeting on February 18, 2020, in the presence of the external auditor, we primarily dealt with the Company's 2019 annual financial statements and consolidated financial statements, as well as the Group management report, which is combined with the management report of Deutsche Telekom AG (combined management report), and the combined non-financial statement contained in the combined management report as a separate section. Our approval of the 2019 annual financial statements was based on the recommendation of the Audit Committee. The same applies to the review of the combined non-financial statement. We agreed to the Board of Management's proposal on the appropriation of net income. We approved the agenda for the 2020 shareholders' meeting and dealt with a number of topics including remuneration. The Board of Management reported comprehensively on the current situation and the most important financial and operational KPIs for the Company and its segments. We adopted a resolution on the transfer of the Security and Internet of Things (IoT) units from T-Systems to Deutsche Telekom AG and on a spin-off agreement relating to the Deutsche Telekom Global Carrier business area. The Supervisory Board also discussed the rules on related-party transactions. In addition, we discussed the findings of the Supervisory Board's efficiency audit from 2019.

In the meeting on March 25, 2020, the Board of Management reported in-depth on the status of the Sprint transaction in the United States and we approved the closing effective April 1, 2020. The Supervisory Board was reconstituted at the same meeting: Frank Sauerland was elected as Deputy Chairman of the Supervisory Board effective March 27, 2020 and in some cases new members were appointed to the committees. The Board of Management reported extensively on the steps it was taking to deal with the coronavirus crisis and the impact of the crisis on the Company.

In the meeting on May 19, 2020, the Board of Management reported comprehensively on the current situation and the financial and operational KPIs for the Company and its segments in the first quarter of 2020. We discussed the 5G build-out in Germany. The Board of Management once again reported on its coronavirus crisis management activities in response to coronavirus and the effects of the pandemic on the business. Furthermore, we dealt with both the implementation of the Sprint integration and the quarterly Group risk report. In view of current geopolitical discussions, we looked at the global resilience of Deutsche Telekom's supply chains. We debated the recommendations contained in the new German Corporate Governance Code.

In the meeting on June 18, 2020, we approved the appointment of Srini Gopalan as the Board of Management member for Germany and Dr. Wössner's resignation from his position on the Board of Management. A resolution was passed on an agreement between Deutsche Telekom AG and SoftBank (call options on T-Mobile US shares).

In the meeting on July 27, 2020, we approved the updated 2020 budget and the Board of Management's targets following the first-time consolidation of Sprint.

In the meeting on August 19, 2020, we approved the purchase of wireless assets of Shenandoah Telecommunication Company by T-Mobile US (call option).

In the meeting on September 1, 2020, the Board of Management reported on the current situation and the financial and operational KPIs for the Company and its segments in the second quarter of 2020. We also discussed the filling of the position of the Board of Management member for Europe. We also dealt with the implementation of the Act Implementing the Second Shareholder Rights Directive (ARUG II) and the 2020 German Corporate Governance Code (GCGC) and the ensuing adjustments to the Board of Management's compensation system. Furthermore we resolved on the split-off of the Austrian cell tower portfolio into a separate entity and approved the exercise of a call option to acquire the Dutch MVNO and SIM provider Simpel.

At the joint off-site conference with the Board of Management on the following day, we dealt mainly with Deutsche Telekom's strategy and the major trends affecting its business. We debated the status of the strategy and progression with its implementation, and discussed individual strategic focal topics. This involved an in-depth look at the fiber-optic build-out in Germany, Deutsche Telekom's investment portfolio, T-Systems, and T-Mobile US.

In our meeting on September 7, 2020, we approved the appointment of Dominique Leroy to the Board of Management as the Board member for Europe.

In our meeting on October 13, 2020, we discussed – and subsequently approved by means of a written voting procedure – the sale of the Dutch cell tower company T-Mobile Infra B.V. and the planned investment in an infrastructure fund.

In our meeting on October 26, 2020, we approved the sale of Telekom Romania Communications S.A.

In our meeting on November 27, 2020, we discussed the spectrum portfolio held by T-Mobile US. We also decided to increase the number of Staff Committee members by two.

In our meeting on December 16, 2020, we adopted resolutions on a variety of Board of Management compensation topics, such as the adjustment of the Board of Management compensation system. We also reviewed and partly revised the targets for the composition of the Supervisory Board. We also reappointed Claudia Nemat as Board of Management member, responsible for the Technology and Innovation department, for a further term of office (starting on October 1, 2021). The Board of Management reported on the current situation and the financial and operational KPIs in the Company and its segments in the third quarter of 2020. In addition, the Supervisory Board looked at the current situation at T-Systems and approved the transfer of the Road Charging portfolio unit from T-Systems International GmbH to a subsidiary of T-Systems International GmbH. A further focus of the meeting was the resolution on the budget and on the annual financing plan for the 2021 financial year. In addition, we acknowledged the medium-term planning for 2021 through 2024.

In our plenary meetings and in the Audit Committee in particular, we also regularly supervised the management of the Company by the Board of Management. As part of this, we made sure that the Board of Management ensured compliance with legal provisions and internal standards and policies supported by the Group-wide compliance organization. We also regularly met with the Board of Management to discuss the Group-wide risk management system that it had introduced. Based on our own reviews and on the audit reports submitted by the external auditor, we came to the conclusion that the internal compliance system and the internal control and risk management system are effective. In its plenary meetings, the Supervisory Board also regularly dealt with diverse organizational matters.

Outside of its meetings, the Supervisory Board attended information events to keep up to date on the latest topics and developments.

Organization of the Supervisory Board's activities
To increase the efficiency of our work, and in consideration of the specific requirements we have to fulfill, we have set up the committees listed below, all of which have an equal number of shareholders' and employees' representatives, with the exception of the Nomination Committee. In regard to committee membership, our aim is to achieve regular rotation among the Supervisory Board members. Our objective is also to ensure that the chairperson roles on the committees are occupied by different members. The committees' chairpersons regularly reported to us at our plenary meetings on the content and results of committee meetings.

Supervisory Board committees

Committee	Supervisory Board member	Committee	Supervisory Board member
General Committee		**Nomination Committee**	
	Prof. Dr. Ulrich Lehner (Chairman)		Prof. Dr. Ulrich Lehner (Chairman)
	Josef Bednarski until April 30, 2020		Dr. Rolf Bösinger
	Dr. Rolf Bösinger		Dagmar P. Kollmann
	Kerstin Marx since May 15, 2020		
	Lothar Schröder until March 26, 2020		
	Frank Sauerland since March 27, 2020		
Finance Committee		**Special Committee for U.S. Business (until December 31, 2020)**	
	Karl-Heinz Streibich (Chairman)		Prof. Dr. Ulrich Lehner (Chairman)
	Dr. Günther Bräunig		Dr. Günther Bräunig
	Constantin Greve since March 27, 2020		Constantin Greve
	Nicole Koch		Dr. Helga Jung
	Dagmar P. Kollmann		Lothar Schröder until March 26, 2020
	Frank Sauerland until March 27, 2020		Nicole Seelemann-Wandtke since March 27, 2020
	Karin Topel		Sibylle Spoo
Audit Committee		**Technology and Innovation Committee**	
	Dagmar P. Kollmann (Chairwoman)		Lothar Schröder (Chairman)
	Josef Bednarski until April 30, 2020		Odysseus D. Chatzidis
	Dr. Rolf Bösinger		Lars Hinrichs
	Prof. Dr. Michael Kaschke		Nicole Seelemann-Wandtke
	Petra Steffi Kreusel		Karl-Heinz Streibich
	Kerstin Marx since May 15, 2020		Margret Suckale
	Sibylle Spoo		
Staff Committee		**Mediation Committee**	
	Lothar Schröder (Chairman) until March 26, 2020		Prof. Dr. Ulrich Lehner (Chairman)
	Frank Sauerland (Chairman) since March 27, 2020		Josef Bednarski until April 30, 2020
	Josef Bednarski until April 30, 2020		Dr. Rolf Bösinger
	Odysseus D. Chatzidis since November 27, 2020		Kerstin Marx since May 15, 2020
	Harald Krüger since November 27, 2020		Frank Sauerland since March 27, 2020
	Prof. Dr. Ulrich Lehner		Lothar Schröder until March 26, 2020
	Kerstin Marx since May 15, 2020		
	Margret Suckale		

The **General Committee** met fifteen times in 2020, one meeting of which was held jointly with the Finance Committee. The committee focused mainly on preparing the recommendations for decision for the plenary meetings in regard to all of the decisions on Board of Management and Supervisory Board matters. The Board of Management compensation system was one key point of debate. The committee reviewed the appropriateness of the Board of Management compensation as scheduled. Another focus was on the selection and appointment of two new Board of Management members. Long-term succession planning for the Board of Management was also discussed in the meeting. The committee studied candidates from within the Company in respect of their skills and need for further development. In the joint meeting with the Finance Committee, the General Committee dealt in particular with the 2021 budget and the medium-term planning for 2021 to 2024.

The **Finance Committee** met three times, of which one meeting was together with the General Committee. Investment planning and focuses were the subject of the meetings. The committee also dealt with general topics such as interest and foreign currency management, pension obligations and capital investments, net debt and rating, and a spectrum review. In the joint meeting with the General Committee, the Finance Committee discussed the 2021 annual financing plan in particular.

The **Audit Committee** met six times in 2020. The external auditor was present at five of the six meetings. The Audit Committee's area of responsibility is defined by German legislation, the German Corporate Governance Code, and its own Rules of Procedure. It includes, in particular, the review of accounting and the accounting process, the effectiveness of the internal control system, risk management and the internal auditing systems, compliance, and data privacy. The Audit Committee also handled matters relating to the audit of the Company's financial statements, in particular selecting and ensuring the independence of the external auditor, and monitored the additional services provided by the external auditor, the commissioning of the external auditor, the stipulation of the main focuses of the audit, and the agreement on fees. After thorough discussion, the Audit Committee issued a recommendation to the Supervisory Board on its suggestions of the external auditor for the 2020 financial year and the first quarter of 2021 to be nominated by the 2020 shareholders' meeting. Moreover, after conclusion of the tender process for the audit of the annual financial statements and the consolidated financial statements for the 2021 financial year, the Audit Committee continually monitored the designated candidate's compliance with the key criteria required for the recommendation for nomination by the shareholders' meeting. Furthermore, the Audit Committee commissioned PricewaterhouseCoopers GmbH Wirtschaftsprüfungsgesellschaft, Frankfurt/Main, with a limited assurance engagement on the combined non-financial statement contained as a separate section in the combined management report. In the 2020 financial year, the Audit Committee again held one extraordinary meeting on fundamental issues affecting the Group. At this meeting, the committee dealt in particular with the effectiveness of the reporting system on the internal control, risk management and internal auditing systems, and on the compliance management system, including the ongoing development of the reporting structure. When the Audit Committee dealt with the risk management system, this year it focused in particular on the role of the risk manager in the first line of defense using risk management in the All-IP Migration program as an example. At the same meeting, the Audit Committee dealt with the topic of data privacy and data security and the members discussed and familiarized themselves with new requirements and developments regarding German and EU law as well as financial accounting standards. This year, the Audit Committee also dealt extensively with the principles and processes applied by the Board of Management when evaluating the coronavirus-induced effects on Deutsche Telekom's business as well as the integration of Sprint following the business combination with T-Mobile US. Outside of its meetings, the Audit Committee members attended a deep dive workshop on the risk management system and its ongoing improvement. Moreover, at an additional meeting the Audit Committee prepared a Supervisory Board resolution on the approval of a transaction, where it looked in depth at liability and indemnity issues in this context.

Dagmar P. Kollmann, Chairwoman of the Audit Committee, has expert knowledge of accounting and auditing. She is also particularly knowledgeable and experienced in the application of accounting standards and internal control procedures. She is independent, and is not a former member of the Board of Management of Deutsche Telekom AG. Like the members of the full Supervisory Board, the members of the Audit Committee overall are very familiar with the sector in which Deutsche Telekom AG is active.

The **Staff Committee** held two meetings in 2020 and mainly discussed matters relating to headcount planning and qualitative and quantitative staff-requirements planning for the purpose of preparing Supervisory Board resolutions on the 2021 budget. In addition, the committee dealt with topics such as the HR strategy, the women's quota, the company pension scheme, and talent management. The committee also looked at health management activities, with particular regard to coronavirus crisis management, and the results of the survey on customer satisfaction.

The **Nomination Committee** met four times in 2020. It dealt in its meetings with succession planning for the Supervisory Board, with a particular focus this year on the matter of a successor to the position of Supervisory Board Chair from 2022.

The **Mediation Committee** to be formed in accordance with § 27 (3) of the Codetermination Act did not meet in 2020.

The **Technology and Innovation Committee** held three meetings in 2020 and dealt with a very broad range of topics from a variety of areas. For example, the committee discussed trends and strategic approaches, the 5G build-out, 5G campus networks, AI in fiber planning and provisioning, the data strategy, and the topic of the connected customer experience. The committee also dealt with the current trend radar. The committee supports and promotes innovation and technological developments at infrastructure and product level; it supports the Board of Management with advice on how to tap new growth areas.

The **Special Committee for U.S. Business** met once in 2020 and prepared the Supervisory Board resolution in connection with the closing of the T-Mobile US business combination with Sprint in the United States as of April 1, 2020.

Number of meetings attended by the individual members

Supervisory Board member	Meeting	Attendance	Attendance rate %
Prof. Dr. Lehner, Ulrich			
	Supervisory Board plenary meeting/off-site conference	13/13	100 %
	General Committee	15/15	100 %
	Staff Committee	2/2	100 %
	Nomination Committee	4/4	100 %
	Special Committee for U.S. Business	1/1	100 %
	Audit Committee	1/1	100 %
	Total	**36/36**	**100 %**
Sauerland, Frank			
	Supervisory Board plenary meeting/off-site conference	13/13	100 %
	General Committee since March 27, 2020	13/13	100 %
	Staff Committee since March 27, 2020	2/2	100 %
	Total	**28/28**	**100 %**
Schröder, Lothar			
	Supervisory Board plenary meeting/off-site conference	13/13	100 %
	General Committee until March 26, 2020	2/2	100 %
	Technology and Innovation Committee	3/3	100 %
	Special Committee for U.S. Business until March 26, 2020	1/1	100 %
	Total	**19/19**	**100 %**
Bednarski, Josef until April 30, 2020			
	Supervisory Board plenary meeting/off-site conference	2/2	100 %
	General Committee	2/2	100 %
	Audit Committee	1/1	100 %
	Total	**5/5**	**100 %**
Dr. Bösinger, Rolf			
	Supervisory Board plenary meeting/off-site conference	11/13	85 %
	General Committee	14/15	93 %
	Audit Committee	6/6	100 %
	Nomination Committee	4/4	100 %
	Total	**35/38**	**92 %**
Dr. Bräunig, Günther			
	Supervisory Board plenary meeting/off-site conference	13/13	100 %
	Finance Committee	3/3	100 %
	Special Committee for U.S. Business	1/1	100 %
	Total	**17/17**	**100 %**
Chatzidis, Odysseus D.			
	Supervisory Board plenary meeting/off-site conference	13/13	100 %
	Staff Committee since November 27, 2020	1/1	100 %
	Technology and Innovation Committee	3/3	100 %
	Total	**17/17**	**100 %**
Greve, Constantin			
	Supervisory Board plenary meeting/off-site conference	13/13	100 %
	Finance Committee since March 27, 2020	3/3	100 %
	Special Committee for U.S. Business	1/1	100 %
	Total	**17/17**	**100 %**
Hinrichs, Lars			
	Supervisory Board plenary meeting/off-site conference	13/13	100 %
	Technology and Innovation Committee	3/3	100 %
	Total	**16/16**	**100 %**
Dr. Jung, Helga			
	Supervisory Board plenary meeting/off-site conference	13/13	100 %
	Special Committee for U.S. Business	1/1	100 %
	Total	**14/14**	**100 %**
Prof. Dr. Kaschke, Michael			
	Supervisory Board plenary meeting/off-site conference	11/13	85 %
	Audit Committee	6/6	100 %
	Total	**17/19**	**88 %**

Supervisory Board member	Meeting	Attendance	Attendance rate %
Koch, Nicole			
	Supervisory Board plenary meeting/off-site conference	13/13	100 %
	Finance Committee	3/3	100 %
	Total	**16/16**	**100 %**
Kollmann, Dagmar P.			
	Supervisory Board plenary meeting/off-site conference	12/13	92 %
	Audit Committee	6/6	100 %
	Finance Committee	3/3	100 %
	Nomination Committee	4/4	100 %
	Total	**25/26**	**96 %**
Kreusel, Petra Steffi			
	Supervisory Board plenary meeting/off-site conference	12/13	92 %
	Audit Committee	6/6	100 %
	Total	**18/19**	**95 %**
Krüger, Harald			
	Supervisory Board plenary meeting/off-site conference	13/13	100 %
	Staff Committee since November 27, 2020	1/1	100 %
	Total	**14/14**	**100 %**
Marx, Kerstin since May 1, 2020			
	Supervisory Board plenary meeting/off-site conference	11/11	100 %
	General Committee	13/13	100 %
	Audit Committee	5/5	100 %
	Staff Committee	2/2	100 %
	Total	**31/31**	**100 %**
Seelemann-Wandtke, Nicole			
	Supervisory Board plenary meeting/off-site conference	13/13	100 %
	Technology and Innovation Committee	3/3	100 %
	General Committee	3/3	100 %
	Total	**19/19**	**100 %**
Spoo, Sibylle			
	Supervisory Board plenary meeting/off-site conference	11/13	85 %
	Audit Committee	5/6	83 %
	Special Committee for U.S. Business	1/1	100 %
	Total	**17/20**	**85 %**
Streibich, Karl-Heinz			
	Supervisory Board plenary meeting/off-site conference	13/13	100 %
	Finance Committee	3/3	100 %
	Technology and Innovation Committee	3/3	100 %
	Total	**19/19**	**100 %**
Suckale, Margret			
	Supervisory Board plenary meeting/off-site conference	13/13	100 %
	Staff Committee	2/2	100 %
	Technology and Innovation Committee	3/3	100 %
	General Committee	3/3	100 %
	Total	**21/21**	**100 %**
Topel, Karin			
	Supervisory Board plenary meeting/off-site conference	13/13	100 %
	Finance Committee	3/3	100 %
	Total	**16/16**	**100 %**

Conflicts of interest

Dr. Rolf Bösinger is a member of the Supervisory Board of Deutsche Telekom AG and, at the same time, State Secretary at the Federal Ministry of Finance. Dr. Günther Bräunig is a member of the Supervisory Board of Deutsche Telekom AG and is also CEO of the Executive Board at Kreditanstalt für Wiederaufbau (KfW). We are aware that Deutsche Telekom AG is currently involved in legal disputes in which the Federal Republic of Germany is the opposing party. There were no conflicts of interest requiring action with any of the aforementioned members of the Supervisory Board. Should a conflict of interest arise, the Supervisory Board members will discuss how to proceed with the Chairman of the Supervisory Board.

Corporate governance

The Supervisory Board and Board of Management are aware that good corporate governance is an important foundation for corporate success. The provisions of the German Corporate Governance Code are hence reflected in the Company's statutes.

The Board of Management and the Supervisory Board last issued their Declaration of Conformity with the German Corporate Governance Code on December 30, 2020.

Training and development

The members of the Supervisory Board take on the necessary training and development measures required for their tasks on their own and are supported by Deutsche Telekom AG in doing so with a range of options including information events and workshops – this year with a special focus on Board of Management compensation systems, risk management, and finance instruments – with internal and external experts. The Company offers new Supervisory Board members a customized program to introduce them to the industry and the situation of the Company. Furthermore, an annual special meeting is held to inform the members of the Audit Committee about the latest changes in the law, new accounting and auditing standards and any changes in corporate governance issues. The members of the Supervisory Board are also kept up to date about any new requirements for work on the Supervisory Board at the regular Board and committee meetings.

Changes in the composition of the Board of Management

Birgit Bohle has headed up the extended Human Resources and Legal Affairs Board of Management department since January 1, 2020. Dr. Thomas Kremer, the Board of Management member for Data Privacy, Legal Affairs and Compliance, left the Group for reasons of age effective March 31, 2020. Until his departure, Dr. Kremer supported the transition to the new structures as part of a designated mandate.

Dr. Dirk Wössner, the Board of Management member for Germany, informed the Supervisory Board of Deutsche Telekom AG in early 2020 of his intention to leave the Group upon expiry of his service contract as of December 31, 2020. On June 18, 2020, the Supervisory Board of Deutsche Telekom AG appointed the former Board of Management member for Europe, Srini Gopalan, as the new Board of Management member for Germany effective November 1, 2020. Dr. Wössner resigned from his position effective midnight on October 31, 2020. On September 7, 2020, the Supervisory Board of Deutsche Telekom AG appointed Dominique Leroy to succeed Srini Gopalan as the Board of Management member for Europe effective November 1, 2020.

Changes in the composition of the Supervisory Board

Shareholders' representatives

At the shareholders' meeting on June 19, 2020, Prof. Michael Kaschke was elected for a further term of office as a member of the Supervisory Board of Deutsche Telekom AG until the end of the 2025 shareholders' meeting.

Employees' representatives

Josef Bednarski resigned from his position as Supervisory Board member effective May 1, 2020 to coincide with his departure from Deutsche Telekom. Kerstin Marx was court-appointed to the Supervisory Board as his successor effective May 1, 2020.

Lothar Schröder resigned from his mandate as Deputy Chairman of the Supervisory Board effective March 27, 2020. The Supervisory Board elected Frank Sauerland as the new Deputy Chairman of the Supervisory Board effective March 27, 2020.

Review of the annual financial statements of the parent company and consolidated financial statements for the 2020 financial year

The Board of Management submitted the annual financial statements, the consolidated financial statements, and the Group management report, which is combined with the management report of Deutsche Telekom AG (combined management report), together with its proposal for the appropriation of net income and the Corporate Governance Statement, to us in good time. The combined management report also included a separate section containing the combined non-financial statement for Deutsche Telekom AG and for the Group (combined non-financial statement) for the 2020 financial year.

PricewaterhouseCoopers GmbH Wirtschaftsprüfungsgesellschaft, Frankfurt/Main (PwC GmbH), which was appointed as auditor of the single-entity financial statements and auditor of the consolidated financial statements (external auditor) for the 2020 financial year by the shareholders' meeting on the recommendation of the Audit Committee and proposed for appointment by the entire Supervisory Board, audited the annual financial statements as of December 31, 2020, which were prepared by the Board of Management in accordance with the provisions of the German Commercial Code (Handelsgesetzbuch – HGB), and the combined management report, as well as the consolidated financial statements as of December 31, 2020, which were prepared in accordance with IFRS as adopted by the EU and the additional requirements of German commercial law pursuant to § 315e (1) HGB, and the combined management report, and issued an unqualified audit opinion for each document. Moreover, PwC GmbH performed a limited assurance engagement on the combined non-financial statement for the 2020 financial year prepared by the Board of Management in respect of the disclosures required by law and issued an unqualified opinion in accordance with ISAE 3000.

The external auditor also confirmed to the Audit Committee and the Supervisory Board in their financial statement review meetings on February 24 and February 25, 2021, respectively, that there are no circumstances that may give rise to doubts about the external auditor's impartiality. In this context, the auditor also reported on any services rendered in addition to auditing services. In the Supervisory Board meeting on February 25, 2021, the Audit Committee informed us about its monitoring of the external auditor's independence while taking account of the non-audit services provided, and of its conclusion that the auditor continues to be independent as necessary.

The external auditor submitted its reports on the nature and extent as well as the result of its audits (audit report) to us. The documentation on the aforementioned financial statements, the external auditor's audit reports, and the Board of Management's proposal for the appropriation of net income were made available to the members of the Supervisory Board in good time. The same applies to the combined non-financial statement and the Corporate Governance Statement.

We conducted our own in-depth review of the documents submitted by the Board of Management and the external auditor's audit reports. In preparation, the Audit Committee had conducted a thorough review of the aforementioned documents. The annual financial statements, the consolidated financial statements, and the combined management report, as well as the Board of Management's proposal for the appropriation of net income were explained in detail by the Board of Management to the members of the Audit Committee at its meeting on February 24, 2021. The members of the Board of Management also answered the committee members' questions. Moreover, the external auditor also attended this meeting and reported on its audit, in particular the key audit areas defined in agreement with the Audit Committee and the Supervisory Board, and the main findings of its audit, and explained its audit report. The external auditor did not identify any material weaknesses in the internal control system at Group level, in the risk management system, or in the accounting process. The members of the Audit Committee acknowledged and critically reviewed the audit report and audit opinion, and discussed them, as well as the audit itself, with the external auditor. The review included questions about the nature and extent of the audit and about the audit findings. The Audit Committee satisfied itself that the audit and the audit reports were compliant. In particular, its members had assured themselves that the audit reports and the audit conducted by the external auditor met the legal requirements. The Audit Committee agrees with the external auditor that there were no material weaknesses, in particular with regard to the accounting process, in the internal control or risk management systems at Group level. The Audit Committee followed the same procedure for the report and the opinion on the combined non-financial statement. The Audit Committee recommended that we approve the results of the audit conducted by the external auditor and, since it had no objections to the documents submitted by the Board of Management, that we approve the annual financial statements and the consolidated financial statements; it also recommended that we not raise any objections against the combined management report or the combined non-financial statement, and that we support the Board of Management's proposal for the appropriation of net income.

We performed the final review of the annual financial statements, the consolidated financial statements, and the combined management report, as well as the Board of Management's proposal for the appropriation of net income, on February 25, 2021, taking into account the report and recommendations of the Audit Committee and the external auditor's audit reports. The Board of Management attended this meeting, explained the documents they had submitted, and answered our questions. The external auditor also attended this meeting and reported on its audit and the main findings of its audit, explained its audit reports, and answered our questions, in particular relating to the nature and extent of the audit and the audit findings. Based on this and the report presented by the Audit Committee, we were satisfied that the audit and the audit report were compliant. Hence, we approved the findings of the audit by the external auditor. The same applies to the combined non-financial statement contained in the combined management report.

Based on the final outcome of our review of the annual financial statements, the consolidated financial statements, the combined management report, and the combined non-financial statement, as well as the Board of Management's proposal for the appropriation of net income, no objections need be raised. The same applies to the Corporate Governance Statement even insofar as it is not to be audited by the external auditor. We followed the Audit Committee's recommendation and approved the annual financial statements and the consolidated financial statements.

The approval of the Supervisory Board constitutes formal adoption of the annual financial statements.

The Supervisory Board's assessment of the position of the Company and the Group is the same as that which the Board of Management presented in its combined management report. It followed the Audit Committee's recommendation and approved these documents. The same applies to the combined non-financial statement.

When dealing with the budget and medium-term planning on December 16, 2020, we conducted an in-depth examination of financial and investment plans, discussing in particular the development of earnings, free cash flow, the equity ratio, and balance sheet ratios. The Board of Management's proposal concerning the appropriation of net income was examined by the Audit Committee on February 24, 2021, and by the Supervisory Board on February 25, 2021. The external auditor was present at both meetings. We approved and supported the Board of Management's proposal to pay out shareholder remuneration of around EUR 2,846 million and to carry forward EUR 2,283 million to unappropriated net income.

We would like to thank the members of the Board of Management, all employees and the works committees for their commitment and dedication in the 2020 financial year.

Bonn, February 25, 2021
The Supervisory Board

Prof. Dr. Ulrich Lehner
Chairman

The T-Share

		2020	2019
XETRA closing prices			
Share price on the last trading day	€	14.96	14.57
Year high	€	16.63	16.25
Year low	€	10.83	14.10
Trading volume			
German exchanges	billions of shares	3.4	2.5
Market capitalization on the last trading day	billions of €	71.2	69.4
Weighting of the T-Share in major stock indexes on the last trading day			
DAX 30	%	4.5	4.5
Dow Jones EURO STOXX 50®	%	1.9	1.8
T-Share – key figures			
Earnings per share	€	0.88	0.82
Proposed dividend	€	0.60	0.60
Number of shares issued	millions, at year-end	4,761	4,761

Development of international indexes

After substantial rises in 2019, the international indexes saw rather subdued trends overall in 2020. The overriding issue for the stock markets was the impact of the coronavirus pandemic on the global economy.

The most important barometer of the German stock market, the DAX, rose by 3.5 % over the course of the trading year. By contrast, the Dow Jones closed out the year with a loss of 1.6 % on a total return basis, i.e., including reinvested dividends.

The Dow Jones EURO STOXX 50® was somewhat weaker than the Dow Jones, down 3.2 % at the close of 2020. The Japanese Nikkei, however, proved rather strong and closed out the year up 11.5 %.

T-Share performance

The restrained environment similarly prevailed in the European telecommunications sector: the impact of the pandemic was also the predominant issue in the telecommunications sector. The industry's barometer, the Dow Jones STOXX® Europe 600 Telecommunications, fell 12.7 % in the course of the stock market year.

In this environment, the T-Share closed the year at EUR 14.96, up by 2.6 %. The lowest price recorded during the year was EUR 10.83 on March 18, 2020, while the highest price of EUR 16.63 was recorded on February 20, 2020.

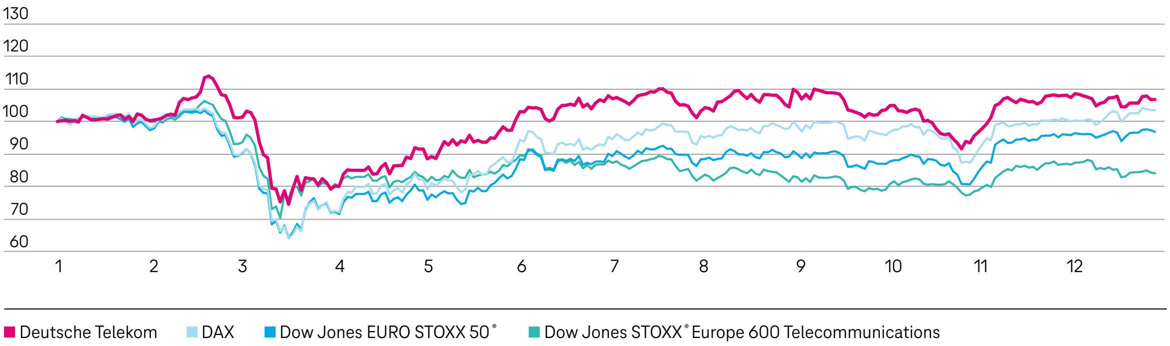
On a total return basis – and thus comparable with the DAX – our share ended the year 2020 up 6.8 %.

Dividend

The Board of Management and Supervisory Board of Deutsche Telekom AG will propose to this year's shareholders' meeting, to be held on April 1, 2021, the distribution of a dividend of EUR 0.60 per dividend-bearing share.

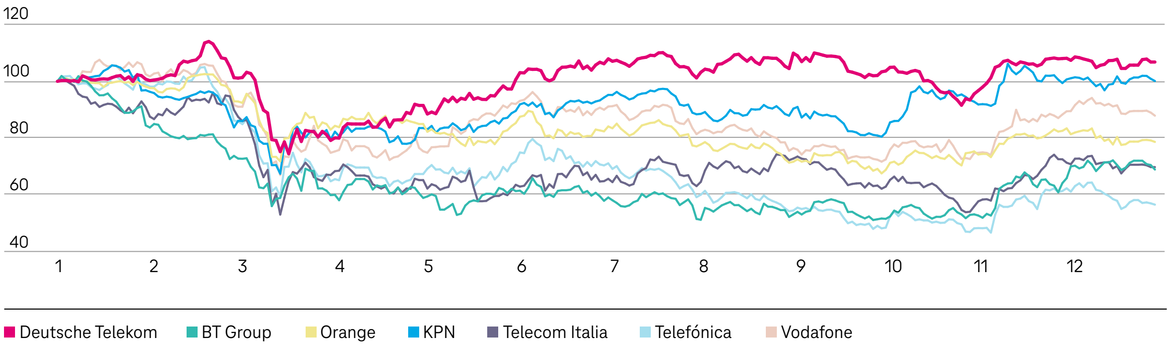
T-Share as compared to DAX, Dow Jones EURO STOXX 50®, and Dow Jones STOXX® Europe 600 Telecommunications

January 1 to December 31, 2020 (based on total shareholder return[a])



T-Share as compared to other European telecommunications companies

January 1 to December 31, 2020 (based on total shareholder return[a])



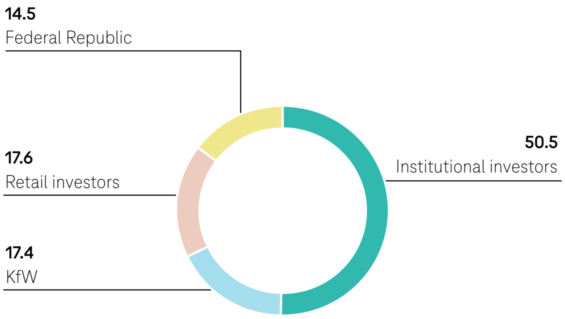
[a] Total shareholder return measures the development in the value of a shareholding over a specific period. It takes into account dividends paid during the investment period along with any changes in share price.

Shareholder structure

The Federal Republic's shareholding, including that of Kreditanstalt für Wiederaufbau (KfW), remains unchanged at 31.9 %. The proportion of institutional investors decreased slightly, to 50.5 %, while the share of retail investors increased to 17.6 %. As a result, the percentage of shares in free float remains at around 68 % of the share capital.

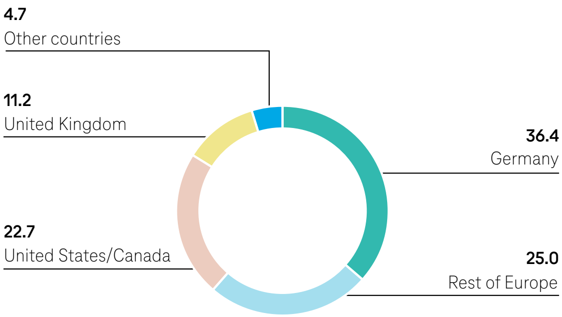
Shareholder structure

% (as of December 31, 2020)



Geographical distribution of free float

% (as of December 31, 2020)



Highlights in the 2020 financial year

Board of Management

Dr. Dirk Wössner resigned from his position as the Board of Management member for Germany effective midnight on October 31, 2020. Srini Gopalan previously responsible for the Europe Board of Management department was appointed the new Board of Management member for Germany effective November 1, 2020. Dominique Leroy was appointed to the Board of Management also effective November 1, 2020 to succeed Srini Gopalan as the new Board of Management member for Europe.

The Board of Management department for Data Privacy, Legal Affairs and Compliance (DRC) was dissolved effective the end of Dr. Thomas Kremer's term of office on March 31, 2020. The individual units of the DRC Board department were reassigned to other Board of Management departments (Finance, Human Resources, and Technology and Innovation) as of January 1, 2020. Birgit Bohle has headed up the extended Human Resources and Legal Affairs Board of Management department since January 1, 2020. Until his departure for reasons of age, Dr. Kremer supported the transition to the new structures as part of a designated mandate.

For further information on changes in the composition of the Board of Management, please refer to the section "Group organization" in the combined management report.

Business and other transactions

Realignment of the B2B telecommunications business in the Germany operating segment. Consistent with our efforts to systematically implement the Group strategy pillar "Lead in business productivity," with effect from July 1, 2020, TC Services and Classified ICT, portfolio units previously assigned to the Systems Solutions operating segment, as well as Telekom Global Carrier (TGC) and Network Infrastructure (NWI), which had formerly been disclosed under the Europe operating segment and the Group Headquarters & Group Services segment respectively, have been combined in the Germany operating segment. As part of these transactions, the assets and liabilities assigned to the business areas were transferred to the Germany operating segment. In the Systems Solutions operating segment, the realignment of the B2B telecommunications business in combination with the effects of the coronavirus pandemic triggered ad hoc impairment testing, which identified a reduction in the business outlook for IT operations. The result was the recognition of a non-cash impairment loss of EUR 0.5 billion on non-current assets of the Systems Solutions cash-generating unit.

For further information on the realignment of the B2B telecommunications business and on the different consummation dates under company law, please refer to the section "Group organization" in the combined management report and the disclosures in Note 36 "Segment reporting" in the notes to consolidated financial statements.

For further information on the impairment losses recognized following ad hoc testing, please refer to the disclosures in Note 6 "Intangible assets" in the notes to the consolidated financial statements.

Business combination of T-Mobile US and Sprint. T-Mobile US and Sprint combined their two businesses effective April 1, 2020 to form the "all-new," larger T-Mobile US. The transaction had previously passed through various approval processes involving numerous national and regional courts and authorities in the United States. The business combination gave T-Mobile US a more comprehensive spectrum portfolio. This portfolio provides a much stronger basis for T-Mobile US to significantly expand nationwide coverage and to extend its mobile network capacities, which translates into clear potential for sustained customer growth. As of July 1, 2020 a major prerequisite of the U.S. Department of Justice (DoJ) for approving the merger was duly fulfilled: the sale of Sprint's prepaid business to U.S. satellite TV operator DISH Network. A deal was also signed to sell spectrum to DISH.

For further information on the business combination of T-Mobile US and Sprint, please refer to the section "Group organization" in the combined management report and the section "Summary of accounting policies – Changes in the composition of the Group and other transactions" in the notes to the consolidated financial statements.

T-Mobile US and American Tower expand agreement to rent and use cell sites. On September 14, 2020, T-Mobile US and American Tower signed an agreement on the lease and use of cell sites. This was a modification to existing agreements with American Tower. The agreement gives T-Mobile US greater flexibility in the course of merging the mobile networks of T-Mobile US and Sprint and of the 5G network build-out.

Acquisition of Simpel by T-Mobile Netherlands. On December 1, 2020, T-Mobile Netherlands acquired the Dutch MVNO and SIM provider Simpel. Simpel had previously exclusively marketed SIM-only subscriptions through its own website. These SIM cards operated on the T-Mobile Netherlands network. This acquisition secures mobile market shares, creates synergies, and makes us more competitive in the consumer market.

Agreed sale of Telekom Romania Communications. On November 6, 2020, OTE concluded an agreement with Orange Romania concerning the sale of the 54 % stake in Telekom Romania Communications, which operates the Romanian fixed-network business, to Orange Romania. The transaction is subject to approval by the authorities as well as other closing conditions.

Reversal of impairment losses

Impairment losses on spectrum licenses previously acquired by T-Mobile US were partially reversed, increasing the carrying amount by EUR 1.6 billion. In part, the reasons leading to the impairment loss recognized in 2012 no longer exist, thus giving rise to the reversal. An initial reversal of the impairment in the amount of EUR 1.7 billion had already been recognized in 2017. The measurement of Sprint's licenses in connection with the purchase price allocation following the business combination of T-Mobile US and Sprint indicated a further increase in the licenses' value. This triggered a remeasurement of the PCS licenses held by T-Mobile US on the basis of a market value approach.

Coronavirus pandemic

The coronavirus pandemic left its mark on 2020. The introduction of measures to contain the global spread of coronavirus (COVID-19) had manifold implications for our Group activities. For example, major trade fairs, which we support as partners, such as Digital X and Hannover Messe, became virtual events. Deutsche Telekom AG also elected to hold its shareholders' meeting online on June 19, 2020 as permitted under the new statutory regulations.

Voice calls rose in both the mobile and fixed networks. Our multi-billion investments in the network infrastructure have paid off throughout the pandemic: our networks were running stably even under substantially higher loads. SDG 9 STRUCTURE We fulfilled our responsibility as an employer by introducing comprehensive rules and protective and supportive measures to help employees work from home while continuing to safeguard service for our customers in parallel. At our sites and in our shops, we rolled out strict hygiene and safety measures with the support of hygiene experts. SDG 3 EMPLOYEES Home working drove up demand for web conferencing, video calls, video consulting hours, online shopping, and other similar applications. Classic TV, TV streaming services, and gaming products were also extremely popular. We support our business customers during the crisis with offerings such as Teams from Microsoft 365 and Cisco Webex meetings, while schools can take advantage of our cloud-based web conferencing facilities to provide virtual lessons. SDG 17 RELATIONSHIPS In close collaboration with SAP and other partners, we realized the coronavirus tracing app (Corona-Warn-App) on behalf of the Federal Government. The app is now available to all EU citizens. With the app, the development partners digitalized the tracing process that is needed to successfully break chains of infection and help contain the coronavirus pandemic.

It goes without saying that the pandemic has not left us unscathed. For example, temporary travel restrictions have resulted in lower roaming and visitor revenues. Our terminal equipment business also felt the squeeze, as did our corporate customer business. While it is impossible to quantify the long-term impact of the coronavirus pandemic, we see it as both a risk and an opportunity: On the one hand, we expect to see appreciable effects on the economy as a whole, while on the other, the pandemic has given a boost to the digitalization trend.

Investments in networks SDG 9 STRUCTURE

5G spectrum auctions. In the United States and the countries of our Europe operating segment, a number of 5G spectrum auctions were held in the reporting year, at which T-Mobile US and our national companies in Austria, the Netherlands, Hungary, Greece, Slovakia, and the Czech Republic were each able to successfully secure spectrum. With these spectrum acquisitions we can now forge ahead with the rapid build-out of 5G infrastructure to all our footprint countries and bring 5G services to our customers. New base stations are being added continually.

For further information on spectrum awards, please refer to the section "The economic environment" in the combined management report.

Network build-out in Germany. Our network build-out focused on 5G and optical fiber in the reporting year. We continued to make huge strides with our fixed and mobile expansion activities despite the coronavirus pandemic. Two thirds of the German population can already use 5G. Our tech teams have upgraded around 45,000 antennas at about 17,000 cell sites with 5G technology in the last twelve months. In addition, we built 1,500 new cell sites in the reporting year. The LTE network also grew in 2020 to reach 98.7 % of households. We installed another around 5,000 brand-new antennas this year. Mobile data volumes rose once again to reach another all-time high: In 2020, 1.6 billion gigabytes traveled through the network. Data traffic over 5G is also growing month by month.

For more details, please refer to our media information.

In the fixed network, the fiber-optic build-out took center stage. Since the start of 2020, we have expanded fiber-optic (FTTH) coverage to around 600,000 additional households in Germany. Thus a total of around two million households in Germany have the option of a direct connection to Deutsche Telekom's fiber-optic network. More than 33 million households in Germany can subscribe to a plan with up to 100 Mbit/s on our fixed network. In the reporting year, we once again increased bandwidths for over 4 million households by deploying fiber-optic cables and upgrading our technologies. In total, we have now laid more than 590,000 kilometers of fiber-optic cable Germany-wide.

Network build-out in the United States. In 2020 T-Mobile US further expanded its 5G network leadership, delivering 5G speeds in more places in the United States with the largest (nearly 1.6 million square miles) 5G network. The 5G network covers some 280 million people via the 600 MHz band and 106 million people with Ultra Capacity 5G in the 2.5 GHz band. Ultra Capacity 5G is available in more than 2,000 cities and towns across the country, including major markets such as Chicago, Houston, Los Angeles, New York City, Philadelphia, and Washington D.C., delivering download speeds in the 300 Mbit/s range and peak speeds hitting 1 Gbit/s on compatible 5G devices. The coverage of 106 million people surpassed the company's aggressive goal of 100 million Americans by the end of 2020.

Network build-out in Europe. Despite the pandemic, we made good progress with building out the networks in the countries of our Europe operating segment. A number of our national companies, namely Greece, Hungary, Croatia, and Austria, became the first regional providers in their respective nations to offer 5G services commercially. Cosmote has been offering its customers 5G services in Greece's largest mobile network since December 2020. Magyar Telekom in Hungary launched its commercial 5G service back in the second quarter of 2020 and has continued since then to build out its 5G network. Our 5G pioneer Magenta Telekom has been offering unlimited 5G internet at 1,200 5G-capable sites across Austria since the end of 2020, thereby reaching around 40 % of Austrian households and businesses. 5G has been available for customers of T-Mobile Polska since June 2020. At the end of October 2020, Hrvatski Telekom launched Croatia's first commercial 5G network, which covers around one million people in eight Croatian cities. T-Mobile Czech Republic and Slovak Telekom also launched commercial 5G services in the reporting year. As of December 31, 2020, we also covered 97.6 % of the population in our European countries with LTE, reaching a total of around 108 million people.

We also continued to build out the fixed network in 2020 with good results. In total, we had connected one million households to the fiber-optic network in our Europe operating segment by December 31, 2020. 36 new areas throughout Greece, for example, now have access to 100 % fiber-to-the-home (FTTH) through the country's largest fiber-optic network. Since the beginning of this year, over 100,000 new FTTH lines have been added – a 70 % increase over the end of 2019. As of the end of 2020, Slovak Telekom enabled a total of around 753,000 households in Slovakia to use a fiber-optic line, with more than 120,000 of these households connected in the reporting year.

Our network speaks IP. The migration of German fixed-network lines to the Internet Protocol (IP) was completed by the end of 2020. A total of around 25.3 million fixed-network customers are now using the network of the future. By the end of December 2020, the share of IP-based lines in Europe accounted for 92.9 % of all our fixed-network lines.

Employees SDG 8 EMPLOYEES

In late March 2020 in the midst of the coronavirus pandemic, we concluded a new collective agreement in record time. The collective agreement applies nationwide to around 60,000 employees, trainees, and students on dual study programs. Despite the prevailing economic uncertainty, this outcome meant we could offer (planning) certainty early on both for the employees covered by the collective bargaining round and for the company, and send a clear and positive signal for the economy.

For further information on our HR topics, please refer to the section "Employees" in the combined management report.

Corporate responsibility SDG 13 ENVIRONMENT

"We care for our Planet." We have expanded the focus of our Group strategy to include the additional aspects of responsibility, climate protection, and resource conservation. A first milestone has already been reached: Since January 1, 2020, our customers in Germany have been surfing on the "green network," meaning that Deutsche Telekom's domestic power needs are met by electricity from 100 % renewable sources. By 2021, all electrical power for the Group will come from renewable energy sources. Our "We care for our Planet" program includes further specific initiatives that aim to protect the climate and conserve resources, such as climate neutrality.

For further information on our sustainability topics, please refer to the section "Corporate responsibility and non-financial statement" in the combined management report.

Innovation

Flying cell towers. Deutsche Telekom is researching the possibility of closing gaps in network coverage with flying drones within the next few years. The drones would act as flying mobile antennas. Timotheus Höttges presented the project together with partner Stratospheric Platforms following successful testing in October 2020. SDG 9 STRUCTURE

Hallo Magenta: Smart Speaker Mini. We presented our Smart Speaker Mini with integrated voice assistant in the second quarter of 2020. It allows users to conveniently operate services including MagentaTV, Magenta SmartHome, and telephone services with voice commands. The Smart Speaker Mini complies with European data privacy directives and also meets our own strict privacy standards.

MagentaTV stick. After concluding successful beta testing, our new MagentaTV stick has been available to buy since the end of March 2020. This powerful streaming technology enables customers to watch MagentaTV and other streaming services such as Disney+, Netflix, Prime Video, and YouTube on any TV with an HDMI port – via a Wi-Fi connection from any internet provider.

For further information on our innovations, please refer to the section “Innovation and product development” in the combined management report.

Cooperation and partnerships SDG 9 RELATIONSHIPS

Extension of partnership agreements on fiber-optic usage. In the fourth quarter of 2020, Deutsche Telekom extended its existing partnership agreements with Telefónica Deutschland and Vodafone concerning their long-standing cooperation in the fixed network. As part of these partnerships, we will continue to grant Telefónica and Vodafone access to our broadband network and extend usage to existing and future FTTH fiber-optic networks. Subject to the necessary regulatory approval, the partnerships are set to take effect in spring 2021.

Fiber-optic joint venture in Münster. Partners Telekom Deutschland and the city of Münster’s public utility company Stadtwerke Münster signed a memorandum of understanding in July 2020 to make high-speed fiber-optic internet (FTTH) available to some 160,000 households in Münster by 2030. This will involve connecting around 40,000 buildings to the fiber-optic network. The agreement is a major innovation project for both parties that will combine our products and services with Stadtwerke Münster’s strengths as a municipal utility company with longstanding experience in infrastructure realization.

Fiber-optic partnership with EWE. In January 2020, Telekom Deutschland joined forces with EWE to form the Glasfaser Nordwest joint venture. The joint venture, with its head office in Oldenburg, Lower Saxony, aims to provide up to 1.5 million households and business locations across the region with fiber-optic infrastructure. Glasfaser Nordwest connected the first customers to the fiber-optic network in October 2020.

5G technology joint venture. SK Telecom (SKT) and Deutsche Telekom announced in November 2020 that they had entered into an agreement to establish a 5G technology joint venture. The new company will accelerate the development of innovative 5G solutions at both companies. Its primary focus will be on solutions for in-house services directed initially at the European market.

For more details, please refer to our media information.

Digital pact with the federal state of Saxony-Anhalt. Under an agreement signed in July 2020, Deutsche Telekom will continue to build out the region’s broadband and mobile networks, connect all schools to the fiber-optic network, participate in innovative projects as a partner to universities, support municipal digitalization projects, and focus in particular on bringing 5G to the region. In return, Saxony-Anhalt will improve the framework conditions for all telecommunications companies by ensuring the availability of potential cell site locations, raising funds, and simplifying grant and approval processes.

5G labs open in Germany and the United States. Together with the Cologne University of Applied Sciences (TH Köln) and the University of Cologne’s GATEWAY Excellenz Start-up Center, we opened the 5G Co:Creation Lab at TH Köln’s Mülheim location. At the Lab, university-based start-up founders will have exclusive opportunities to cooperate with industry partners in testing and refining their ideas within a new, state-of-the-art 5G network. It is open both to the students at Cologne’s universities and to start-up founders throughout the federal state of North Rhine-Westphalia. In the United States, partners T-Mobile US, Intel, and NASA founded the 5G Open Innovation Lab (5G OI Lab) in May of this year to provide developers with access to platforms, businesses, and markets for testing new 5G use cases. In September 2020, 16 further companies were selected as the 5G OI Lab’s second cohort. T-Mobile US is also running its 2020 Accelerator program, which offers companies the opportunity to work directly with the provider to develop and market 5G products. SDG 17 RELATIONSHIPS

European campus networks. Together with our partner Ericsson we switched on private 5G campus networks in the 2020 reporting year for the BMW Group plant in Leipzig and at the Center Connected Industry on the RWTH Aachen University campus. T-Mobile Polska has put Poland's first 5G- and LTE-based campus network into operation for the hub4industry consortium. Meanwhile, T-Mobile Czech Republic and VŠB – Technical University of Ostrava have completed work on the first 5G-ready private campus network. Hrvatski Telekom and the Faculty of Electrical Engineering and Computing of the University of Zagreb launched the first 5G campus network in Croatia, which allows the scientific and business community, students, and start-ups to work on development projects based on 5G technology in the field of Internet of Things (IoT), Industry 4.0, automation, robotics, and artificial intelligence applications.

Roaming becomes reality in the European IoT network. We currently offer NarrowBand IoT (NB-IoT) roaming in nine of our footprint markets. In pursuit of our plans to offer roaming in the IoT network (Internet of Things) across large swaths of Europe, we made corresponding adjustments to the existing roaming agreements with partners in eight European countries. This brings mobile roaming services for the machine and sensor network to countries including Finland, Belgium, the Netherlands, Italy, England, and Switzerland. These steps to expand our partner network address rising customer demand for international coverage.

Expansion of partnership with Microsoft. Deutsche Telekom and Microsoft have extended and intensified their existing partnership. The overarching goal is to help business customers of all sizes accelerate their cloud transformation initiatives. By combining Microsoft's cloud capabilities with our Cloud Migration Framework and telecommunications services, we enable customers to increase their productivity, build more flexible and resilient operational processes, and deliver and use new cloud offerings faster.

For more details, please refer to our media information.

Expansion of collaboration with Amazon Web Services (AWS). At AWS re:Invent 2020, T-Systems and AWS announced a multi-year strategic collaboration agreement (SCA). Customers will benefit from faster cloud migration of applications, computer and storage solutions, and enhanced security for T-Systems cloud solutions.

For more details, please refer to our media information.

Partnership for an innovative TV market. Mediengruppe RTL Deutschland and Telekom Deutschland have agreed on a new initiative for innovations in the German TV market, the aim of which is to develop the streaming and personalized advertising growth markets together. As part of the first step, we began integrating TVNOW Premium, the booming streaming service from Mediengruppe RTL, into our MagentaTV product. The offering is to become an integral part of the new MagentaTV Smart and MagentaTV Smart Flex plans.

Cross-border logistics in Europe. The EU is developing a new common data platform for logistics within the FENIX project. For this purpose, the project partners are using Deutsche Telekom's Data Intelligence Hub. The new "data network" links all logistics partners within the EU and connects supply chains, flows of goods, and modes of transport, minimizing bottlenecks in the logistical supply of EU Member States. The common platform simplifies the exchange of information across European borders while protecting the environment.

For more details, please refer to our media information.

Cooperation for Gaia-X. OVHcloud and T-Systems have agreed to cooperate following the Gaia-X European cloud initiative's principles and to develop a joint Openstack public cloud platform. Their goal is to create a trusted public cloud offering for European markets and all sectors for which data sovereignty and GDPR compliance are key, including the public sector, essential infrastructure operators, and companies operating in strategic or sensitive areas of public interest.

Major Swiss deal for T-Systems. T-Systems has won a major deal to provide application development and operation services for the Swiss Federal Railways (SBB). The contract, worth around EUR 170 million, has a basic term of five years with options to extend for a maximum of five additional years. T-Systems' subsidiary Multimedia Solutions will develop and operate software for SBB, including web and cloud applications, mobile apps, and geographical information systems.

"Made in Europe" data analytics for the ECB. The European Central Bank (ECB) has commissioned T-Systems to build and set up a new enterprise analytics platform. To implement the data element of its business strategy and to achieve greater technology integration, the ECB plans to move to the new SPACE analytics platform that will significantly expedite data analytics. T-Systems, together with its partners Cloudera and Ultra Tendency, will build and operate the new SPACE platform as part of a five-year contract. Alongside operation and maintenance, the partners will also provide training and support for the ECB.

Products, rate plans, and services

MagentaEINS Plus: fixed network and mobile communications in a single contract. With our MagentaEINS Plus offering, we are the first provider in the German market to bundle connectivity for home and on the move in a single contract with no minimum term. Customers and their communities nationwide can benefit from unlimited data volumes at home over their domestic internet connection and enjoy mobile surfing including 5G with up to 100 or 250 Mbit/s. EU roaming including Switzerland also comes bundled as well as one gigabyte of data outside the EU.

Innovations in the cloud. The MagentaGaming cloud service combines network, software, and innovation: Our high-performance servers stream games directly from the cloud to the customer's computer or device. This service signals the end of long download times or the purchase of additional hardware. Voice telephony is also undergoing cloudification: In future, we will manage our customer lines centrally from cloud data centers based in Germany. Virtualizing these network functions both speeds up the fixed network and makes it much more efficient. For developers, we now offer the Cloud Topology Designer: a new tool for building applications for the Open Telekom Cloud, Google Cloud, and AWS using drag and drop. The High-Performance Computing Center in Stuttgart (HLRS) put its new "Hawk" supercomputer into operation in February 2020. T-Systems customers can use it via the Deutsche Telekom public cloud and it is as scalable as any other cloud resource.

Prepaid offerings. At the start of 2020 we launched a range of new MagentaMobil prepaid plans and answered our customers' requests by making 5G available to prepaid customers. 5G is now available as an add-on option starting from the M rate plan. Customers must have a 5G-ready device and can activate the add-on options quickly and conveniently using the MeinMagenta app. Since summer 2020 we have also been making the authentication process for prepaid cards sold in stores much easier. A certified procedure is now in place that lets our retail partners use in-store electronic card readers to read the personal data stored on the customer's ID document. In-store data readouts must be authorized by the Federal Office of Administration (Bundesverwaltungsamt). Telekom Deutschland is the first mobile communications provider to obtain this authorization.

Broader cybersecurity portfolio. We launched a raft of new offerings over the course of the year as part of our security portfolio: Together with WatchGuard, we developed Business Network Protect Complete to offer comprehensive cybersecurity for smaller businesses. The solution uses a Wi-Fi router and firewall combined in one unit. As of mid-April 2020, we also offer the Magenta Security Shield package with integrated cyber defense for large corporations and SMEs. SDG 16 STRUCTURE

Full-service packages in Telekom service. Our new service packages make it easy for customers to optimize their at-home connectivity. The Concierge Service assigns a dedicated personal advisor offering professional home-networking support on the spot for consumers switching to Deutsche Telekom from another provider, moving house, or building their own home. After initial set-up, our Digital Home Service assists with all questions relating to remote working, home schooling, and the smart home. We have added three new Wi-Fi packages to our mesh Wi-Fi solutions that ensure customers can enjoy stable, interruption-free Wi-Fi with the required signal strength at home. Our Speed Home WiFi router boosts the Wi-Fi signal to ensure it even carries through thick walls, reinforced concrete, and under-floor heating.

Awards

SDG 16 RELATIONSHIPS

We once again won a number of awards in the reporting year. Major awards can be seen in the following graphic.

For information on further awards received for our CR and HR activities, please refer to the section "Employees" in the combined management report.

Major awards in 2020

Q1

- **Brand Finance Global 500**
  Deutsche Telekom ranked the most valuable European telecommunications brand.
- **RFBenchmark ranking**
  T-Mobile Polska tested to have the fastest mobile internet.
- **Tested Smart Home Product certificate**
  AV-TEST endorses the security of the Home Base 2, Speedport Smart 3, and Smart Speaker products from Deutsche Telekom (01/2020).
- **Top 50 Most Valuable German Brands**
  Deutsche Telekom rated the second most valuable brand in Germany by the BrandZ study.
- **CHIP network test**
  CHIP magazine awards top marks ("very good") to the Magenta Telekom (T-Mobile Austria) mobile network.
- **Top Supplier Retail Award 2020**
  The EHI Retail Institute honors T-Systems in the Best Customer Experience category for the second year running.
- **Partner Excellence Award 2020**
  SAP recognizes T-Systems as Service Partner of the Year for the EMEA North region.
- **Mobile Communications Benchmark 2020**
  Top marks overall for Deutsche Telekom in a crowdsourcing test by PC Magazin (issue 04/2020).
- **Computer Bild network test**
  Deutsche Telekom's fixed network performs best in the trade journal's group test (issue 05/2020).
- **Opensignal test 2020**
  Deutsche Telekom wins five of seven national prizes including for best nationwide LTE coverage.

Q2

- **Connect hotline test 2020**
  Deutsche Telekom wins with a score of "very good." Magenta Telekom rated Austria's best customer hotline (issue 9/2020).
- **Chip.de speed test**
  Deutsche Telekom is the most reliable internet provider in Germany with an overall score of 1.4.
- **Connect customer barometer: mobile B2B**
  Double victory for Deutsche Telekom and Magenta Telekom in Connect magazine's business customer satisfaction survey (issue 6/2020).
- **Connect readers' choice 2020**
  Deutsche Telekom and Magenta Telekom win the magazine's mobile network test in the categories "Mobile network operator" and "Fixed-network provider."
- **Connect IPTV test**
  Connect magazine awards the MagentaTV streaming service an overall rating of "outstanding" (issue 6/2020).
- **Umlaut's best in test**
  T-Mobile Polska rated best in test for voice quality and data services for the fifth time.
- **Connect! The Smart TV Award**
  MagentaSport wins award granted by MedienNetzwerk Bayern for its "Konferenz-Alarm" feature in the category "Best special internet offering."
- **Best mobile-network provider 2020**
  Deutsche Telekom wins the Telecom-Handel ranking's special award for best mobile network in Germany and for "Honesty and reliability."
- **Connect fixed-network test 2020**
  Deutsche Telekom rated #1 in the category "Voice."

Q3

- **Microsoft German Partner of the Year 2020**
  Deutsche Telekom honored for outstanding achievements in the areas of innovation and implementation of Microsoft solutions for customers.
- **Ookla Speedtest Awards 2020**
  The analysts at Ookla rate Cosmote and Hrvatski Telekom as having the fastest mobile networks in Greece and Croatia, respectively.
- **Best fixed-network provider 2020**
  Deutsche Telekom singled out as "Fixed-network provider of the year" for the fourth time in succession in Telecom Handel magazine's reader award.
- **J.D. Power Wireless Purchase Experience Study 2020**
  T-Mobile US recognized as #1 for Business Wireless Customer Satisfaction for the sixth time in succession in a study by J.D. Power.
- **German Investor Relations Prize 2020**
  Deutsche Telekom wins awards for Best Investor Relations in DAX 30 and Best Investor Relations Manager.
- **Dr. Doeblin reputation survey**
  The economic research experts at Dr. Doeblin confirm that Germans rate Deutsche Telekom as one of the most reputable DAX companies.
- **Investors' Darling**
  Manager magazin (issue 10/2020) bestows the prize for CFO of the year on Christian P. Illek in its financial communication ranking.
- **Helden der Krise 2020 awards**
  As part of its "Helden der Krise" (heroes of the crisis) campaign, the F.A.Z.-Institut recognizes Deutsche Telekom's commitment to providing help during the crisis with an honor in the "Companies" category.
- **Umlaut's best in test**
  Hrvatski Telekom's mobile network in Croatia is rated best in test.

Q4

- **Inside-digital.de readers' choice 2020**
  Deutsche Telekom voted best fixed-network and mobile provider.
- **PC Magazin and Connect magazine's fixed-network broadband tests**
  Magenta Telekom wins the PC Magazin test and is rated Austria's best fixed network by Connect magazine with the highest test score of "very good" (issue 11/2020).
- **Portfolio institutionell Award**
  The Telekom Pension Fund wins portfolio institutionell magazine's prize for the best CTA for the third time and for the first time receives an award for its sustainable investments.
- **Computer Bild readers' choice 2020**
  Deutsche Telekom's Wi-Fi packages win a prize in the "Provider" category at the 23rd Golden Computer Awards.
- **Smartphone Magazin network test**
  Deutsche Telekom wins with a score of "very good" and ranks #1 for data transfer, browser use, and streaming.
- **Cisco Partner Summit Digital Global Award**
  Deutsche Telekom wins the award for Technology Excellence: Service Provider of the Year.
- **Computer Bild mobile network test**
  Deutsche Telekom's German mobile network rated best in test with an overall score of 1.6 (issue 25/2020).
- **CHIP mobile network test**
  Deutsche Telekom wins overall and ranks #1 in every category with a score of "very good" (issue 01/2021).
- **Connect mobile-network test 2021**
  Deutsche Telekom and Magenta Telekom rated best in test, including with the innovation award for 5G network build-out (issue 1/2021).

For further information on the aforementioned highlights in the 2020 financial year, please refer to www.telekom.com/en/media/media-information.

Sustainable Development Goals

In 2015, the member states of the United Nations adopted 17 Sustainable Development Goals (SDGs). We want to make concrete contributions to achieving these goals along our entire value chain. Among other things, we set ourselves a new, ambitious climate target at the start of 2019: We want to turn the Deutsche Telekom network into a “green network” by 2021, and by 2030, reduce our CO_2 emissions by 90 % (compared with 2017), and reduce emissions generated in the manufacture and use of our products by 25 % per customer (SDG 13). In the reporting year, we reached a first milestone: Since the start of 2020, our customers in Germany have been surfing on Deutsche Telekom’s green network. But as a shaper of digitalization, we also believe we have a responsibility to support people in successfully navigating the internet and living together in accordance with democratic rules. That is why we not only provide technical access and data privacy and security (SDG 9), but also promote media literacy (SDG 4). Our focus in 2020 was on the topic of civil courage online.

For further information, please refer to the section “Corporate responsibility and non-financial statement” in the combined management report.

Our contributions toward achieving the SDGs have also had a positive effect on our own Company. To enhance clarity, we divide these value contributions into the five subcategories – Finance, Structure, Relationships, Employees, and Environment.

Deutsche Telekom’s value contributions

As a responsible employer, we greatly value employee participation and a working environment that is fair and respectful; we encourage diversity and support our employees on their journey toward the digital working world. In this way, we contribute toward achieving SDGs 5 (Gender equality), 8 (Decent work and economic growth), and 10 (Reduced inequalities) – and this also has a positive impact on cooperation within our Company (Employees). By building out our broadband network, we are making an active contribution to creating high-quality infrastructure, promoting innovation (SDG 9), and strengthening our infrastructure (Structure). And by consistently improving energy efficiency as we expand our network and by sourcing 100 % of our electricity from renewable energies, we contribute towards SDG 13 and make our own business activities more environmentally friendly (Environment). Our growing range of sustainable products and solutions increases this effect and enables our customers to reduce CO_2 emissions and conserve other resources (SDGs 12, 14, 15). At the same time, these offerings enable us to generate revenue (Finance). Our solutions for smart cities promote sustainable living (SDG 11) and we implement them using new partnerships (SDG 17) (Relationships).

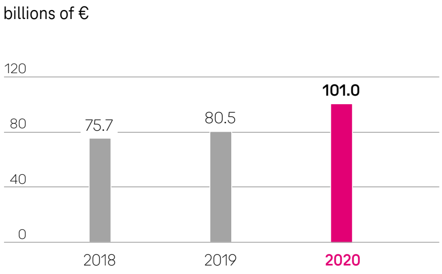
To clearly highlight the contribution our products, services, and activities make towards the individual sustainability development goals and our value chain, we have marked the relevant passages of the following pages with the respective SDG and value contribution symbols.

Combined management report

This report combines the Group management report of the Deutsche Telekom Group, comprising Deutsche Telekom AG and its consolidated subsidiaries, and the management report of Deutsche Telekom AG.

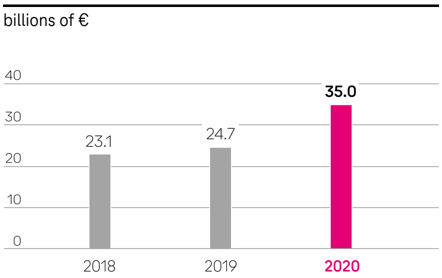
Deutsche Telekom at a glance

Net revenue



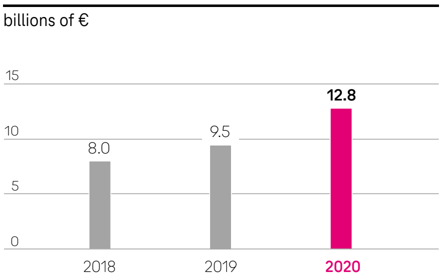
- We look back on a successful 2020 financial year and are well on track to meeting our growth forecast: Net revenue increased by 25.4 % to EUR 101.0 billion. In organic terms, revenue increased by EUR 2.9 billion or 3.0 %.
- Including the revenue contributions from the acquired entity Sprint and including exchange rate differences, our United States segment posted an increase in revenue of 51.4 %. In organic terms, revenue was up 5.0 % against the prior year.
- In our Germany and Europe segments, revenue on an organic basis remained on a par with the prior-year level. Revenue in the Europe segment was down 2.2 % on account of exchange rate effects.
- In our Systems Solutions operating segment, revenue decreased by 5.6 % year-on-year due to the decline in both traditional IT business and project business. The development of the digital solutions business was particularly affected by the impact of the coronavirus pandemic.
- In our Group Development segment, the 3.1 % increase in revenue was driven mainly by operational growth at T-Mobile Netherlands and DFMG.

EBITDA AL (adjusted for special factors)[a]



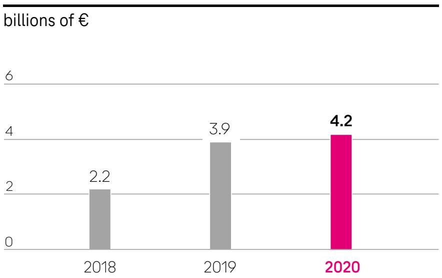
- Adjusted EBITDA AL grew by 41.6 % to EUR 35.0 billion. All segments, with the exception of Systems Solutions, contributed to this growth. Excluding exchange rate effects and changes in the composition of the Group, our adjusted EBITDA AL increased by EUR 2.6 billion or 7.9 %.
- Adjusted EBITDA AL rose sharply by 88.6 % in our United States segment as a result of the acquisition of Sprint and, in particular, the growth in service and terminal equipment revenues. In organic terms, adjusted EBITDA AL grew by 10.8 % year-on-year.
- Our Germany segment recorded an increase in adjusted EBITDA AL of 1.6 %. In Europe the trend remained stable, with adjusted EBITDA AL up 2.1 % in organic terms. Adjusted EBITDA AL grew substantially in our Group Development segment, by 6.6 %.
- At 34.7 %, the Group's adjusted EBITDA AL margin increased by 4.0 percentage points against the prior-year level. The adjusted EBITDA AL margin was 38.8 % in Germany, 34.5 % in Europe, and 34.3 % in the United States.

EBIT



- EBIT increased by EUR 3.3 billion to EUR 12.8 billion.
- EBITDA AL was negatively affected by special factors of EUR 1.8 billion compared to expenses of EUR 1.6 billion in the prior year. Expenses of EUR 1.5 billion were recorded in connection with the business combination of T-Mobile US and Sprint; this contrasted with expenses of EUR 0.5 billion in the prior year. Further expenses of EUR 0.4 billion in the first half of 2020, primarily in connection with the coronavirus pandemic, had been classified as special factors in the United States segment. Positive special factors in the amount of EUR 1.6 billion related to the partial reversal of impairment losses on spectrum licenses at T-Mobile US. Other special factors in both the reporting year and the prior year were primarily attributable to staff-related measures.
- Depreciation and amortization were EUR 7.8 billion higher than in the prior year due in particular to the acquisition of Sprint.
- Impairment losses on non-current assets reduced EBIT by EUR 0.8 billion.

Net profit

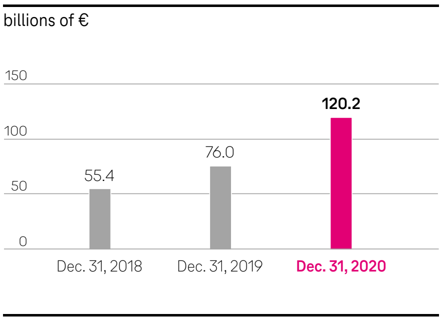


- Net profit increased by EUR 0.3 billion to EUR 4.2 billion.
- Loss from financial activities increased by EUR 1.9 billion to EUR 4.1 billion, largely due to an increase in finance costs of EUR 1.9 billion as a result of the financial liabilities acquired from Sprint and the restructuring begun in connection with this business combination and the related increase in financing, including the handling charges incurred for a briefly utilized bridge loan facility. Other financial income/expense was unchanged at EUR 0.1 billion. This was attributable, on the one hand, to positive effects from the measurement of the stock options to buy shares in T-Mobile US received from SoftBank and, on the other, to lower measurement effects from embedded derivatives at T-Mobile US compared with the prior year and higher interest expense from the measurement of provisions and liabilities.
- Tax expense came to EUR 1.9 billion compared with EUR 2.0 billion in the prior year.
- Profit attributable to non-controlling interests increased by EUR 1.2 billion to EUR 2.6 billion, mainly in our United States segment.
- Adjusted earnings per share amounted to EUR 1.20 compared with EUR 1.04 in the prior year.

[a] Comparatives for 2018 were calculated on a pro forma basis for the key performance indicators redefined in 2019 following the introduction of the IFRS 16 accounting standard.

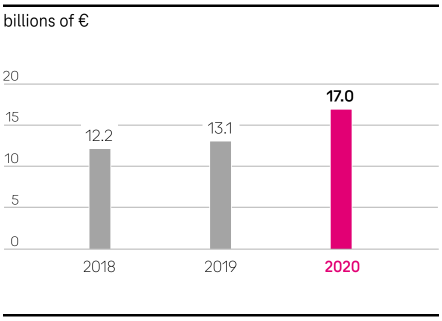
Net debt

- Net debt increased by EUR 44.2 billion to EUR 120.2 billion compared with the end of 2019.
- This increase was mainly attributable to the transfer of liabilities in connection with the business combination with Sprint (EUR 43.5 billion) and additions of lease liabilities (EUR 14.3 billion) primarily as a result of the modification of existing agreements with American Tower on the lease and use of cell sites in the United States. Other factors with an increasing effect were dividend payments (EUR 3.1 billion), including to non-controlling interests, as well as the acquisition of spectrum (EUR 1.7 billion) and forward-payer swaps concluded for borrowings at T-Mobile US (EUR 1.1 billion).
- Free cash flow (EUR 10.8 billion), exchange rate effects (EUR 8.0 billion) as well as the sale of Sprint's prepaid business to DISH (EUR 1.2 billion) in particular reduced net debt.



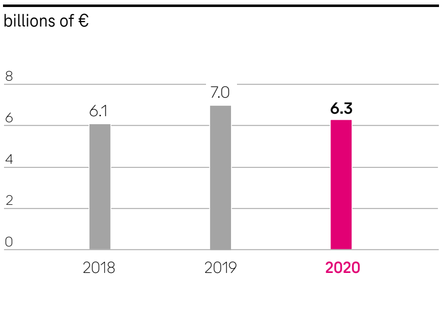
Cash capex (before spectrum investment)

- Cash capex (before spectrum investment) increased by EUR 3.9 billion to EUR 17.0 billion, largely on account of the inclusion of Sprint and the ongoing 5G network build-out in the United States. In Germany and Europe we continued to invest in the provision of broadband and fiber-optic technology and in 5G as part of our integrated network strategy.
- Cash capex (including spectrum investment) increased by EUR 4.3 billion to EUR 18.7 billion. In the reporting period, the United States segment acquired spectrum licenses for a total amount of EUR 1.1 billion. A further EUR 0.4 billion was attributable to spectrum acquisitions in the Europe segment and EUR 0.2 billion to spectrum acquisitions in the Group Development segment. The prior-year figure included EUR 1.2 billion for the acquisition of mobile spectrum licenses, which primarily related to the United States segment.



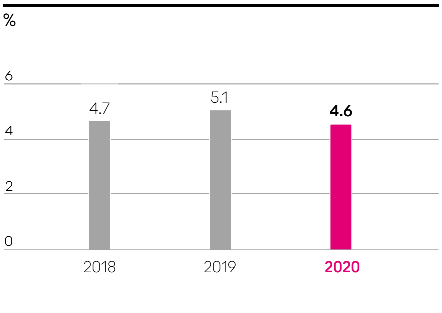
Free cash flow AL (before dividend payments and spectrum investment)[a, b]

- Free cash flow AL (before dividend payments and spectrum investment) decreased by EUR 0.7 billion year-on-year to EUR 6.3 billion.
- Excluding interest payments for zero-coupon bonds and the premature termination of forward-payer swaps in the United States segment, net cash from operating activities increased by EUR 4.4 billion. This was attributable in particular to the sustained positive performance of the operating segments, especially in the United States including Sprint.
- The increase was partially offset by EUR 3.9 billion higher cash capex (before spectrum investment) and in particular by higher interest payments, mainly as a result of the financial liabilities recognized and the restructuring begun in connection with the acquisition of Sprint, and the related increase in financing. Our contractual termination of a revolving factoring agreement in the Germany segment, and higher repayments of lease liabilities primarily in the United States segment, also had a negative effect.



ROCE

- ROCE (return on capital employed) decreased by 0.5 percentage points in the reporting period to 4.6 %.
- This was due to stronger percentage growth in average operating assets (NOA) than in net operating profit after taxes (NOPAT). Both NOPAT and average NOA were affected by the business combination of T-Mobile US and Sprint.
- Average NOA increased due in particular to the spectrum licenses; property, plant and equipment; and right-of-use assets acquired in the Sprint transaction, as well as the modification of the leases concluded with American Tower. In addition, the development of NOA reflects our consistently high investment volume. The positive development in NOPAT was driven primarily by a substantial increase in EBIT at T-Mobile US.



For further information, please refer to the section "Development of business in the Group."

For further information on the level of achievement of our main financial and non-financial key performance indicators, please refer to the relevant section "Development of business in the Group – Comparison of the Group's expectations with actual figures."

[a] Comparatives for 2018 were calculated on a pro forma basis for the key performance indicators redefined in 2019 following the introduction of the IFRS 16 accounting standard.
[b] Before interest payments for zero-coupon bonds and before termination of forward-payer swaps at T-Mobile US.

Group organization

Business activities and segment structure

Business activities. With 242 million mobile customers, 27 million fixed-network lines, and 22 million broadband customers, we are one of the leading integrated telecommunications companies worldwide. We offer our consumers fixed-network/broadband, mobile, internet, and internet-based TV products and services, as well as ICT solutions for our business and corporate customers. We have an international focus and are represented in more than 50 countries. With 226,291 employees worldwide (as of December 31, 2020), we generated revenue of EUR 101.0 billion in the 2020 financial year, despite the negative effects of the coronavirus pandemic. The successful business combination of T-Mobile US and Sprint raised the proportion of net revenue generated internationally to 75.5 %.

Fixed-network business includes all voice and data communications activities based on fixed-network and broadband technology. This includes the sale of terminal equipment and other hardware, as well as the sale of services to resellers. Our mobile communications business offers mobile voice and data services to consumers and business customers; in addition, we sell mobile devices and other hardware. We also sell mobile services to resellers and to companies that buy network services and market them to third parties (mobile virtual network operators, or MVNOs). Drawing on a global infrastructure of data centers and networks, we operate information and communication technology (ICT) systems for multinational corporations and public-sector institutions.

Our responsible corporate governance and business success are based on our shared corporate values and our **Guiding Principles** revised in February 2020. SDG 8 RELATIONSHIPS

For further information on our Guiding Principles, please refer to the section "Employees" and online at www.telekom.com/en/blog/group/article/our-new-purpose-and-revised-guiding-principles-594406

Our **identity** describes the mission of Deutsche Telekom: Why are we here, what does our Company stand for, and what is our purpose? It defines our corporate purpose and describes what we at Deutsche Telekom stand for: We want to be a sustainably growing company that delights its customers, creates value for its investors, and in which employees enjoy their work. Our network is fast, reliable, secure, and should be easily accessible for everyone. At the same time, we are more than just another company that provides society with infrastructure. We want to connect people and make their lives permanently easier and more enriched. This is our mission. We are a close and trusted companion to the customer; transparent, fair, and open to dialog. We identify innovative products at an early stage and develop them in collaboration with our partners. It is our contribution to social togetherness. Our identity reflects all of this and is summarized in one short purpose statement: We won't stop until everyone is connected.

Segment structure. SDG 8 FINANCE Our financial reporting conforms with our Group strategy and is organized according to the following structure:

Deutsche Telekom Group				
Group Headquarters & Group Services				
Germany	**United States**	**Europe**	**Systems Solutions**	**Group Development**
Fixed network and mobile communications	Mobile communications	Fixed network and mobile communications	Global ICT solutions	Selected subsidiaries and equity investments

Our Group is divided into five operating segments plus the Group Headquarters & Group Services segment, each of which we describe in detail below.

Our **Germany** operating segment comprises all fixed-network and mobile business activities for consumers and business customers, including separate sales entities in Germany to allow a customer-centric sales approach. As a pioneer of digitalization, the segment offers its customers an individual service and product portfolio that is designed to be innovative while at the same time secure and simple.

Consistent with our efforts to implement our Group strategy pillar "Lead in business productivity," we realigned our business-to-business (B2B) telecommunications services in the course of the year. To this end, TC Services and Classified ICT, portfolio units previously assigned to the Systems Solutions operating segment, as well as Telekom Global Carrier (TGC) and Network Infrastructure (NWI), which had formerly been reported under the Europe operating segment and the Group Headquarters & Group Services segment respectively, and which together form the business area designated as Deutsche Telekom Global Carrier (DTGC), have been combined in the Germany operating segment. Effective the start of the third quarter of 2020, the management of the Deutsche Telekom Group and hence also the reporting structure were both based on this new segment allocation. As part of these transactions, the assets and liabilities assigned to the business areas were transferred to the Germany operating segment. Prior-year comparatives in these segments (development of operations, customer development, headcount development, and order entry) were adjusted retrospectively. The transactions were consummated under company law on July 1, 2020 (TC Services and Classified ICT) and on October 1, 2020 (DTGC).

The Germany operating segment also focuses on the wholesale business to provide telecommunications services for carriers and, up until the realignment of our B2B telecommunications business, also for our Group's other operating segments. The bundling of customer service activities places a further focus on customer satisfaction and quality assurance. Build-out of the mobile and fixed networks is managed by the Technology business unit in this segment.

Our **United States** operating segment combines all mobile activities in the U.S. market. The business combination of T-Mobile US and Sprint was completed on April 1, 2020, forming the all-new, larger T-Mobile US. The transaction had previously passed through various approval processes involving numerous national and regional courts and authorities in the United States. Business in the United States developed extremely positively on the back of the various Un-carrier initiatives of the last few years. The new business combination serves to further strengthen this trend. T-Mobile US has the largest 5G network in the United States.

The business combination of T-Mobile US and Sprint took the form of an all-stock transaction. At the completion of the transaction, Deutsche Telekom held around 43.6 % of the shares in T-Mobile US. However, under a proxy agreement reached with SoftBank, at the time the business combination took effect Deutsche Telekom controlled a majority of the voting power of around 68.3 % of shares in the new T-Mobile US. On June 22, 2020, Deutsche Telekom received call options from SoftBank to buy around 101 million T-Mobile US shares, thus securing itself long-term access to the majority shareholding in T-Mobile US. In return, we granted SoftBank the option to immediately sell around 198 million T-Mobile US shares. The sale of the shares held by SoftBank reduced the proportion of T-Mobile US shares for which we can exercise voting rights to around 52.5 % as of August 5, 2020.

The structure of the new T-Mobile US factors in the agreement reached with the U.S. Department of Justice (DoJ), one condition of which was that Sprint divested its prepaid business to satellite TV operator DISH. The agreement also includes the sale of part of the 800 MHz spectrum held by Sprint to DISH. As of July 1, 2020, the U.S. authorities' requirements regarding the divestiture of Sprint's prepaid business were duly met and the agreement to sell spectrum to DISH duly confirmed.

Our **Europe** operating segment comprises all fixed-network and mobile operations of the national companies in Greece, Romania, Hungary, Poland, the Czech Republic, Croatia, Slovakia, Austria, North Macedonia, and Montenegro. We are now an integrated provider of telecommunications services in all of our national companies. On November 6, 2020, OTE concluded an agreement with Orange Romania concerning the sale of the 54 % stake in Telekom Romania Communications, which operates the Romanian fixed-network business. The transaction is subject to approval by the authorities. In addition to consumer business, most of the national companies also offer ICT solutions for business customers.

As a leading ICT service provider, our **Systems Solutions** operating segment offers business customers a portfolio of integrated products and solutions. With offerings for connectivity, digital solutions, cloud and infrastructure, and security, in addition to strategic partnerships, we offer our customers help and guidance to implement digital business models. We have been implementing a comprehensive transformation program since 2018, under which we realigned our organization and workflows, adjusted capacities, and developed a new strategy for our portfolio. The portfolio-oriented approach now focuses on six portfolio areas: Managed Infrastructure Services & Private Cloud, Public Cloud Managed Services, SAP, Digital Solutions (including Dedicated System Integration and Health), Road Charging, and Security – comprising both established IT business areas and growth areas. For information on the realignment of the B2B telecommunications business, please refer to the information provided above in connection with the Germany operating segment.

Our **Group Development** operating segment actively manages entities, subsidiaries, and equity investments to grow their value while giving them the entrepreneurial freedom they need to promote their continued strategic development. This approach led to the creation of GD Towers – comprising Deutsche Funkturm (DFMG) and the Dutch cell tower business – within the Group Development segment. Following the integration of Tele2 Netherlands as of the start of 2019, the Dutch MVNO and SIM provider, Simpel, was taken over effective December 1, 2020. This acquisition secures mobile market shares, creates synergies, and makes the Company more competitive in the consumer market. Deutsche Telekom Capital Partners (DTCP) and the Group functions of Mergers & Acquisitions and Strategic Portfolio Management have also been assigned to Group Development.

Group Headquarters & Group Services comprises all Group units that cannot be allocated directly to one of the operating segments, and reports on our Board of Management department for Technology and Innovation. As the organization that sets the direction and provides momentum, it defines strategic aims for the Group, ensures they are met, and becomes directly involved in selected Group projects. Group Services provides services to the entire Group; in addition to typical services provided by Deutsche Telekom Services Europe, such as financial accounting, human resources services, and operational procurement, Group Services also includes placement services provided by our personnel service provider, Vivento. It is in charge of securing external employment opportunities for employees, mainly civil servants, predominantly in the public sector. Further units are Group Supply Services (GSUS) for our real estate management and our strategic procurement, and MobilitySolutions, which is a full-service provider for fleet management and mobility services.

Our Technology and Innovation Board of Management department unites the cross-segment technology, innovation, IT, and security functions of our Germany, Europe, and Systems Solutions operating segments. These include Deutsche Telekom IT, which focuses on the Group's internal national IT projects, and our central innovation unit, Product Innovation and Customer Experience (PIC), which works closely with our operating segments to drive topics such as digitalization, big data, software-defined networks, voicification, virtualization, and cloud services. Our Innovation Hub (IHUB) pools all of the expertise required for future innovation projects in an agile working environment to ensure we stay flexible and innovative. Additional units are Strategy & Technology Innovation (S&TI) and International Technology and Service Delivery (ITS). ITS harmonizes the planning, development, and operation of products, services, and platforms at the national companies in Europe, taking technological and commercial aspects into account. S&TI ensures efficient and customized research and innovation with a focus on mobile and fixed-network communications.

Changes to the organizational structure in 2021

Transfer of the Internet of Things (IoT) growth area. Effective January 1, 2021, Deutsche Telekom assigned the responsibility for business and profit and loss for Deutsche Telekom IoT GmbH from the Systems Solutions operating segment to the business customer unit in the Germany operating segment. The Group subsidiary established in summer 2020 is responsible for the IoT business of Deutsche Telekom. This reassignment puts us in a position to serve the IoT market more quickly and thus to strengthen Deutsche Telekom's position on this growth market.

Transfer of the Austrian cell tower business. As of January 1, 2021, Deutsche Telekom transferred its Austrian cell tower business from the Europe operating segment to GD Towers in the Group Development operating segment to enhance the management efficiency in cell tower business. In addition, GD Towers will increase its efforts to expand third-party business, increase profitability, and develop growth areas.

Combination of the cell tower business in the Netherlands and creation of an infrastructure fund. On January 21, 2021, Deutsche Telekom, Cellnex Telecom S.A., the newly established, independently managed investment company Digital Infrastructure Vehicle I SCSp (DIV), and others signed an agreement to merge Deutsche Telekom's and Cellnex's respective Dutch subsidiaries for mobile infrastructure. Under the deal, the Dutch cell tower company T-Mobile Infra B.V. will be sold to DIV and subsequently merged into Cellnex Netherlands B.V.

Management and supervision

As of December 31, 2020, **Board of Management** responsibilities were distributed across eight Board departments. Four of these cover cross-functional management areas:

- Chairman of the Board of Management

and the Board of Management departments

- Finance
- Human Resources and Legal Affairs
- Technology and Innovation.

In addition, there are four segment-based Board of Management departments:

- Germany
- Europe
- T-Systems
- USA and Group Development.

Changes in the composition of the Board of Management. At its meeting on May 22, 2019, the Supervisory Board of Deutsche Telekom AG resolved to dissolve the Data Privacy, Legal Affairs and Compliance (DRC) Board department effective December 31, 2019. The Internal Audit and Risk Management units were assigned to the Finance Board of Management department. Group Security Governance was assigned to the Board of Management department for Technology and Innovation. The Data Privacy, Legal Affairs, and Compliance units were assigned to the Human Resources Board of Management department and are led by Dr. Claudia Junker, who in her capacity as General Counsel and Executive Vice President reports directly to Birgit Bohle. Birgit Bohle has headed up the extended Human Resources and Legal Affairs Board of Management department since January 1, 2020. Dr. Thomas Kremer left the Group for reasons of age effective March 31, 2020. Until his departure, Dr. Kremer supported the transition to the new structures as part of a designated mandate.

Dr. Dirk Wössner, the Board of Management member for Germany, informed the Supervisory Board of Deutsche Telekom AG in early 2020 of his intention to leave the Group upon expiry of his service contract as of December 31, 2020. On June 18, 2020, the Supervisory Board of Deutsche Telekom AG appointed the former Board of Management member for Europe, Srini Gopalan, as the new Board of Management member for Germany effective November 1, 2020. Dr. Wössner resigned from his position effective midnight on October 31, 2020. On September 7, 2020, the Supervisory Board of Deutsche Telekom AG appointed Dominique Leroy to succeed Srini Gopalan as the Board of Management member for Europe effective November 1, 2020.

Composition of the Board of Management as of December 31, 2020

Members of the Board of Management	Department
Timotheus Höttges	Chairman of the Board of Management (CEO)
Adel Al-Saleh	T-Systems
Birgit Bohle	Human Resources and Legal Affairs
Srini Gopalan	Germany
Dr. Christian P. Illek	Finance (CFO)
Thorsten Langheim	USA and Group Development
Dominique Leroy	Europe
Claudia Nemat	Technology and Innovation

The members of the Board of Management are appointed and discharged in accordance with § 84 and § 85 of the German Stock Corporation Act (Aktiengesetz – AktG) and § 31 of the German Codetermination Act (Mitbestimmungsgesetz – MitbestG).

The **Supervisory Board** of Deutsche Telekom AG advises the Board of Management and oversees its management of business. It is composed of 20 members: 10 represent the shareholders and 10 the employees. The employees' representatives were most recently appointed at the delegates' assembly on November 20, 2018.

Amendments to the Articles of Incorporation are made pursuant to § 179 and § 133 AktG and § 18 and § 21 of the Articles of Incorporation. According to § 21 of the Articles of Incorporation, the Supervisory Board is authorized, without a resolution by the shareholders' meeting, to adjust the Articles of Incorporation to comply with new legal provisions that become binding for the Company and to amend the wording of the Articles of Incorporation.

The compensation system for our Board of Management is oriented towards the long-term performance of our Group. Since 2013, the compensation for our Supervisory Board has no longer included any long-term remuneration components. We complied with the recommendations of the German Corporate Governance Code (GCGC), as amended on February 7, 2017.

For a description of the compensation systems for the Board of Management and the Supervisory Board, please refer to the section "Other disclosures – Compensation report."

Group strategy

Our corporate strategy: Leading European Telco

SDG 8 FINANCE

Since 2014, we have been aligning all of our corporate activities with our Leading European Telco strategy – with the aim of becoming Europe's leading telecommunications provider.

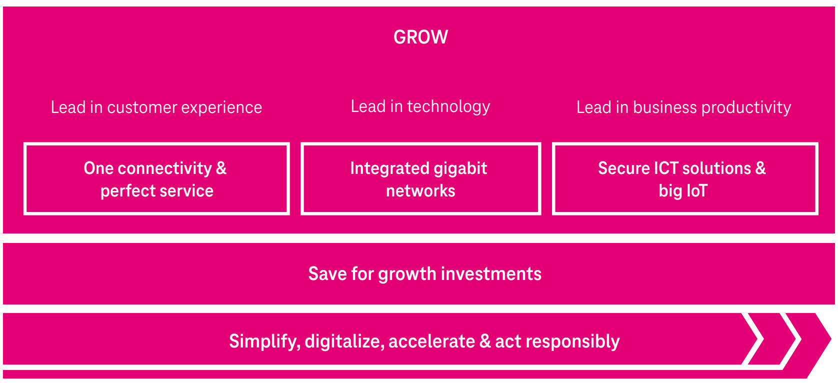
This strategy has proved very successful: In terms of market capitalization, we are Europe's highest-value telecommunications company (as of December 31, 2020). Not only is our Group stable, but it is growing, too – as confirmed by our key financial KPIs and customer development on both sides of the Atlantic. We raised our full-year guidance for 2020 in the course of the year, despite the coronavirus pandemic. Nevertheless, the pandemic has not left us unscathed. For example, temporary travel restrictions have resulted in lower roaming and visitor revenues. Our terminal equipment business also felt the squeeze, as did our corporate customer business. While it is impossible to quantify the long-term impact of the coronavirus pandemic, we see it as both a risk and an opportunity: One the one hand, we expect to see appreciable effects on the economy as a whole, while on the other the pandemic has given a boost to the digitalization trend. Additional trends are emerging that affect both us as a Group and society as a whole:

- The parallel build-out of broadband and mobile infrastructure (optical fiber and 5G) calls for high investments and innovative approaches to implementation.
- Competition in the telecommunications sector is intense and changing: Not only are telecommunications companies using the digital transformation to enhance their core business efficiency, but we are also seeing companies from other industries pushing onto the market with lean, software-based production models. Providers such as Google and Microsoft are expanding into the global connectivity field.
- As data availability continues to grow and artificial intelligence becomes more advanced, new usage scenarios are opening up both in internal production processes (such as data-driven network build-out) and in business-to-customer interaction (e.g., hyper-personalization). At the same time, we need to equip people with the relevant skills and expertise to keep pace with these developments, and define new standards for handling data responsibly in the digital society.
- The rising tide of digitalization and data availability goes hand in glove with the potential for abuse – reflected in trends such as the huge surge in cybercrime, which has rapidly escalated from targeted attacks to high-volume crime. These trends can both dramatically affect the stability of critical infrastructure and influence political relations. Political and economic relations are under increasing influence from the growing importance and economic power of a handful of global tech enterprises, known as hyperscalers that primarily operate from the United States (Microsoft, Google, Amazon) and China (Tencent, Alibaba).
- Sustained economic globalization, world population growth, and increasing use of digital technologies all put a strain on the available resources. It is thus imperative that we find a sustainable, more ecological way of doing business and act with a greater focus on social responsibility.

We are tackling these developments head on – and with measurable success: Unlike our European competitors, our share price recovered to pre-crisis levels following the general downturn at the height of the first coronavirus wave. This is thanks not least to our coherent Group strategy. We continue to systematically implement our Leading European Telco strategy. Despite over 50 % of our revenue coming from the United States, we are still pursuing our ambition to become the Leading European Telco. Because this is how we see ourselves: We are a European company with a strong U.S. arm. In parallel, we leverage our international footprint to generate synergies across the Group and to carry weight alongside the global tech giants. Our goal here is not to micromanage all local units, but to provide a strategic framework and to utilize local strengths (networks, competitive standing).

Our claim to leadership ranges over the dimensions of customer experience, technology, and business customer productivity. From this we derive three specific areas of operation with which we are creating the foundation for future organic growth. Because only if we grow can we sustainably secure our earnings performance and continue to meet the demands of our investors. Two areas of operation contribute to this growth target and provide a framework for our actions: "Save for growth investments," and "Simplify, digitalize, accelerate & act responsibly."

Corporate strategy: Leading European Telco



Strategic areas of operation

One connectivity & perfect service

We want to offer our customers a seamless and technology-neutral telecommunications experience. That’s why we market fixed-network and mobile communications in **convergent products** (fixed-mobile convergence (FMC)). By the end of the reporting year, some 5.0 million customers in Germany had opted for MagentaEINS; that is over 0.36 million more than in the prior year. The national companies of our Europe operating segment won more than 0.9 million new customers for MagentaOne and similar FMC offerings in 2020. Because we want to continue on this path of growth, we work continuously to improve and expand our convergent portfolio. We took another step in this direction with our new MagentaEINS Plus offering, which bundles all connectivity services for home and on the move in a single contract – with flexible terms, unlimited data, and the option to add family, friends, or acquaintances to the contract via Community Cards.

While having the best networks is essential for us as Europe’s Leading Telco, it is not the only prerequisite. We want to go beyond the pure technical line: the customer’s network experience is decisive for us. For this reason we offer our customers additional services that provide genuine added value and turn our “Lead in technology” aspiration into a first-hand experience. We reached some key milestones in this regard in the reporting year. Our MagentaTV product has been repositioned to aggregate linear TV, including extensive features, with access to content from the biggest video-on-demand providers, and exclusive content. In 2020 we enhanced its appeal further: in Germany, for instance, with new partnerships with key content providers (including Disney+, RTL TVNOW) and the launch of the MagentaTV stick for a provider-independent TV experience, and in our European subsidiaries with a new user interface to add even more personalization to the user experience. The addition of around 0.25 million TV customers in Germany and 0.1 million in our European subsidiaries shows that we are on the right track. We also revamped our TVision television offering in the United States with new content packages, a new streaming device, and new price structures. Our digital voice assistant, Hallo Magenta, is enhancing the customer experience in interactions with our services while safeguarding data security and personal privacy in compliance with European data privacy standards. We work together with our customers to continually develop and test new services and further strengthen our entertainment portfolio. That includes MagentaGaming, for example, which we released as a beta version in Germany in 2019 and launched commercially just twelve months later.

Our aspiration to deliver perfect **customer service** is yet another powerful tool to help set us apart from the competition. For this reason, we launched several initiatives in the reporting year that aim to enhance the quality of our customer service. In Germany these include a Concierge Service (where a dedicated personal advisor looks after customers seeking to switch to Telekom from a competitor, move house, or build their own home) and the promise of assistance for customers struggling to set up and optimize their Wi-Fi at home. Awards such as the Connect hotline test’s prize for best-in-test of the German fixed-network providers (issue 9/2020) validate our efforts. We will continue our efforts in 2021 to offer customers the best service; for example, by further improving our first-call resolution rate for customer queries. In the United States, too, we are reaping the rewards of measures such as the new Team of Experts approach: Several surveys on service quality place T-Mobile US ahead of its competitors (including being rated best for postpaid customer satisfaction for the sixth time in succession in the J.D. Power test), while the Net Promoter Score in Customer Service stands at 79 % – putting it at an all-time high. At our national companies in Europe, we are currently focusing on increasing the level of digitalization in customer interaction; for example, using our updated service app. Following successful international rollout, this app improves the customer experience (e.g., with setting up and managing their routers via the app, plus an option to chat with an employee or service bot) and enables us to monetize our offerings (e.g., with customer-specific approaches).

We measure **customer satisfaction** using the globally recognized TRI*M method. We use the results of this performance indicator to improve our customer contact processes, and our products and services. At the same time, we determine the loyalty of our customers towards Deutsche Telekom. The results are presented as a performance indicator, the TRI*M index, which ranges between minus 66 and plus 134 points. At the end of the reporting year, the indicator for the Group (excluding T-Mobile US) came in at 72.2 points versus an adjusted value of 67.9 points at the start of the year (determined on a comparable basis). Our goal for the coming years is to again achieve an improvement in customer satisfaction.

Integrated gigabit networks

Convergent products require **integrated networks**. That is why we are systematically building out and interlinking our fixed and mobile networks so that we can offer our customers the fastest possible connection at top quality, anytime, anyplace. We invested around EUR 17 billion (not including spectrum investment) primarily in building and operating networks in Europe and the United States, with around EUR 5.5 billion of this figure earmarked for Germany alone. This makes us the biggest investor among all of our German competitors. In pursuit of outstanding quality, we are also striking out in new directions, for example, with innovative technologies like fixed-network substitution using wireless technology, or the use of artificial intelligence to ensure infrastructure is built out in line with demand, as well as exploring partnerships and joint ventures. Integrated management improves the capacity utilization of our infrastructure and increases efficiency in operations and maintenance. SDG 9 STRUCTURE

Fiber optic-based **fixed networks** are the basis for an integrated network experience. In virtually all of our European national companies, we are leading the build-out of fiber-optic lines to over 9 million households. In Hungary, for example, we can now offer fiber-optic lines to 2.6 million households – that's over 50 %. In the Germany operating segment, we have now laid more than 590,000 kilometers of fiber-optic cable. Since the start of 2020, we have made fiber-optic lines available to around 600,000 more households. Looking ahead, we are set to substantially increase the pace of the fiber-optic build-out further.

In **mobile communications**, we set ourselves apart from our competitors with the outstanding quality of our network. We have regularly come out on top in independent network tests. Our German network once again won the "big three" network tests in 2020 (Connect, issue 1/2021; CHIP, issue 01/2021, 11th time in succession; and Computer Bild, issue 25/2020). The network experts from Umlaut tested four of our European national companies (Austria, the Netherlands, Poland, and Croatia) in the reporting year and rated them all "best in test overall." T-Mobile US took the #1 spot in the OpenSignal Upload Speed Experience test in 2020. We intend to achieve these results on a regular basis in future, and hence are further building out our LTE networks: In our European national companies, we already covered 97.6 % of the population with LTE as of December 31, 2020; in Germany, household coverage stood at 98.7 %.

With the **fifth-generation mobile communications standard (5G)**, we will create a highly reliable mobile network with extremely low latency and high data throughput. To this end, network functions will be decoupled from the access medium (e.g., optical fiber, copper, or air). By distributing computing power in the network (mobile edge computing) and creating dedicated network layers for individual applications (network slicing), 5G creates the basis for future technologies such as virtual reality, autonomous driving, and the Internet of Things. With our clear goal of also leading in 5G, we intend to work closely with policy-makers and industry to build the most powerful digital infrastructure across our footprint. And we are moving closer to achieving this goal: With the largest 5G campaign in Germany, two thirds of the population can now experience the new mobile communications standard – in both rural and urban areas. In the United States, too, we have the largest 5G network nationwide covering some 280 million people via the 600 MHz band and 106 million people with Ultra Capacity 5G in the 2.5 GHz band. This is thanks in large part to our superior spectrum position from the business combination with Sprint (effective from April 1, 2020). In Austria, not only do we have the largest 5G network nationwide but we were also the first telecommunications company to offer 5G there. Magenta Telekom is deploying innovative network technology to expedite the build-out of 5G in Austria and offers unlimited 5G internet at over 1,200 locations country-wide (reaching more than 40 % of Austrian households). At the Netherlands' first-ever 5G spectrum auction, which ended on July 21, 2020, T-Mobile Netherlands purchased total spectrum of 70 MHz for which it paid EUR 400 million. Going forward, we will continue to invest heavily in building out 5G infrastructure. For this, we need conditions to be in place that are both fair and reliable.

Secure ICT solutions & big IoT

In the reporting year, we once again maintained our market-leading position (in terms of revenue) as a provider of telecommunications services for business customers in Germany and based growth on the level reached in recent years. Secure, reliable global connectivity is essential to the advancing digitalization of critical processes in companies and industry associations. We remain a dependable partner to German industry thanks to our product portfolio of international communications solutions that combine the strengths of our national network infrastructure with our international networks. We also continued to post growth in IT revenue from business customers in our Germany operating segment (up 3.4 % compared with 2019).

We again demonstrated our strengths and expertise throughout the coronavirus pandemic. With our products and services, we made an important contribution to maintaining normal operations as far as possible for our society and economy: Over 50 % of businesses in Germany work on the Telekom network and during the first wave of coronavirus from March through June 2020 we sold 69,000 remote-working solutions to help maintain business as usual when working from home. During lockdown our networks were put to the test and they all coped well. Compared with pre-crisis levels, mobile voice traffic jumped by up to 70 % in the first week and in the fixed network by up to 100 % on specific days. Yet the coronavirus pandemic is not leaving our B2B business unscathed. Our core business is feeling the strain of lower roaming revenues, and IT business is impacted by IT budget cuts and project delays, for example. At the same time, as a catalyst for the digital transformation, the coronavirus crisis represents an opportunity. At Deutsche Telekom, we want to be the preferred partner for digitalization and to grow our business with business customers. With our IT solutions, we help our customers – from microenterprises, SMEs, major corporations through to public authorities – to profitably deploy the technologies of the future. The Internet of Things and cybersecurity are just two of the focus topics gaining relevance in this context. SDG 8 FINANCE

Our business with "traditional" IT outsourcing services for international corporate customers has been in decline for a number of years now, mainly due to persistent intense competition. It is for this reason our Systems Solutions operating segment is currently undergoing a profound transformation. For our corporate customers, we are pursuing a "Digital enabler" strategy. In concrete terms, this means we are bridging the gap between known platforms (Microsoft Office, SAP Hana, etc.) and the individual demands of complex organizations. To achieve this, we have expanded the software development, software integration, and digitalization process units in particular and will continue to further strengthen them. The focus here is on profitable growth. We are redoubling our efforts to implement existing transformation initiatives, such as reducing indirect costs, strengthening the offshoring rate, and transforming the revenue mix, despite some minor delays in the reporting year due to the coronavirus pandemic and other factors.

As part of our ongoing efforts to consistently implement the Group's strategy pillar "Lead in business productivity" and continue building on the positive trend, in 2020 we implemented several more structural measures:

- We plan to offer our business customers "connectivity from a single source" (one connectivity) and established a dedicated integrated unit for this purpose in the reporting year: TC Services and Classified ICT, portfolio units previously assigned to the Systems Solutions operating segment, were combined in the business customer unit of the Germany operating segment effective July 1, 2020. The transition to the new structure will affect T-Systems' telecommunications operations both on a national and international level. It not only establishes end-to-end responsibility – from production and product development to service delivery management and technical sales – within one unit, which reduces the number of interfaces, but also enables us to even better orient our services to the customer. We also expect greater scalability and improved competitiveness from the resulting economies of scale alongside the benefit of being able to zero in even more closely on our growth areas (e.g., software-defined network solutions (SD-x) and data-driven business models) on the basis of standardized production processes.
- At the same time, we want to ensure we stay flexible and agile in the fast-moving IoT and security growth markets. To this end, effective July 1, 2020 the Security and IoT portfolio units were spun off into independent legal entities (limited liability companies under German law (GmbHs)) under the Deutsche Telekom AG umbrella. The spin-off move gives them greater entrepreneurial freedom, more speed and innovation, and strengthens the mandate for IoT in the Group. We see the most growth potential for IoT business in the digitalization of the SME sector and in the global scaling of IoT platforms.

These structural changes mark an important milestone in the transformation of T-Systems, and will continue to be pursued systematically in 2021.

Supporting areas of operation

Save for growth investments

Future growth requires adequate investment. To this end, we are investing in our own innovativeness as well as integrating successful new developments from outside our Company. Thanks to our strict cost discipline, we generate the funds we need to finance this investment and safeguard our competitiveness. We will therefore systematically continue on this path of cost transformation. In the long term, we also want to be Europe's leading telecommunications provider in terms of efficiency.

We take a value-oriented approach to managing our **investment portfolio**. Business areas that cannot be adequately developed within the Group are disposed of. Consequently, we concluded an agreement concerning the sale of the 54 % stake in Telekom Romania Communications S.A., which operates the Romanian fixed-network business, to Orange Romania. The transaction, which comprises a purchase price of EUR 268 million, is subject to approval by the authorities as well as other closing conditions. The transaction is expected to be closed in the second half of 2021. On the other hand, we bolster our growth ambitions by means of equity investments and acquisitions. In this context, T-Mobile US and Sprint combined their two businesses effective April 1, 2020 to form the "all-new," larger T-Mobile US. The new T-Mobile US created by the business combination has market capitalization of around USD 167 billion (based on the share price of the new T-Mobile US on December 31, 2020). Moreover, we secured call options to increase our holding in T-Mobile US (from SoftBank shares) and appointed an experienced new management team. Not only is the combination of business activities under an all-new T-Mobile US consistent with our strategy of successfully developing our U.S. business (including market capitalization growth of over 400 % so far in the last five years), it will also bolster the customer-oriented Un-carrier strategy and allow us to roll out 5G technology across the United States faster and better than our competitors. The course is already set: In the reporting year we moved up to the #2 spot in terms of customer numbers in the U.S. mobile communications market, we won more than 5.5 million new customers in 2020 alone, and we continue to grow. Going forward our focus is on becoming #1 in the U.S. market and leveraging the planned synergies from the business combination worth around USD 43 billion (after integration costs). In the Netherlands, too, we have completed the integration of Tele2 Netherlands and continue to grow on this stronger basis. We successfully launched ourselves as an FMC provider and secured the spectrum necessary to maintain our leading position in terms of network coverage. We also acquired the Dutch MVNO and SIM provider Simpel as of December 1, 2020 along with its customer base of around 1 million customers nationwide. With a total of 6.8 million customers, we are now the Netherlands' largest provider of mobile communications.

Simplify, digitalize, accelerate & act responsibly

Simplicity in our offers and in our organization makes the digital transformation of our core business easier. In this way, we increase our **implementation speed** – both in the interaction with customers and in the implementation of new, strategic initiatives. This is why we want to become simpler, more digital, and ultimately more agile.

There are two main thrusts to our pursuit of **simplicity**. First, we want to offer our customers intuitive products and simple rate plans, like MagentaEINS Plus, MagentaTV, or the unlimited MagentaMobil XL plan. Going forward, we want to significantly further reduce product complexity. Second, we want our internal operation to be as efficient as possible, i.e., in terms of time and costs. Hence we will scrutinize our organization, processes, and decision-making procedures and further optimize them wherever possible.

The **digitalization** of our core business is helping us to improve customer experience and increase our efficiency. Our service apps are now firmly established in Germany and Europe as central, digital customer interfaces and we have worked to continually add more services. We interact with 62 % of customers in our European national companies digitally, via the service apps. The MeinMagenta app in Germany also has a penetration rate of over 56 % and receives positive ratings, with the iOS version rated 4.3/5 stars, for example. Thanks to our ongoing investments in digitalizing our processes, we were also able to respond rapidly to the unexpected challenges posed by the coronavirus pandemic, transitioning our 16,000 service center employees in Germany to home working within one weekend. 80,000 colleagues in Germany and up to 180,000 employees worldwide have represented Deutsche Telekom from their own homes. Throughout all of this, we maintained our productivity levels. Employee satisfaction increased considerably in parallel, reaching 80 % in the pulse survey taken in November 2020, thus it is around 8 percentage points higher than the level in the employee survey in November 2019. SDG 3 EMPLOYEES
Long term, our plan is to digitalize virtually all value creation stages in their entirety. To this end, we are implementing more agile IT solutions and systematically expanding our expertise in innovative technologies like artificial intelligence. Data-based analyses are already helping us to maintain our hardware more proactively, understand customer needs better, and manage our networks more efficiently.

Yet, to achieve simplicity and take the digital transformation forward, we need new organizational forms, expertise, and a cultural change – in short, we need to master a whole host of new skills if we are to handle current and future challenges. We tackled these developments head on with measures such as the introduction of the Youlearn initiative to promote a culture of self-paced learning in our everyday working life. What is more, we rolled out Percipio (an intelligent learning platform also dubbed the “Netflix of learning”) and integrated Coursera as a provider of digital further-training courses offered by top-ranking universities, thus providing our employees with a high-quality training service. The increase in our digital learning rate from 46 % to 63 % and over 170,000 registrations for Percipio since the third quarter of 2019 validate our efforts in this area. We do this because we firmly believe that providing a state-of-the art learning environment is central to our obligation as an employer to act **responsibly**. SDG 8 EMPLOYEES

In parallel, we fulfill our responsibility to society by systematically aligning our core business processes with the principle of sustainability. We have expanded our existing climate strategy to include a new Group program. Our aim with “We care for our Planet” is to make a meaningful contribution toward protecting the climate and conserving resources. With over 2.1 million devices either refurbished and reintroduced into circulation or sent by us directly for recycling, our customers actively help to conserve resources and protect the climate. In the fixed network alone, more than 800,000 routers and receivers distributed under our lease model were returned, professionally refurbished, and made ready for re-use. Moreover, in 2020 we introduced a sustainability standard for our packaging, removing single-use plastics in favor of recyclable materials and environmentally friendly colorings. All new Telekom-branded (or “T-branded”) devices and already up to 25 % of devices from third-party manufacturers fulfill these requirements. Our Group entities in Germany, Magyar Telekom in Hungary, OTE in Greece, T-Mobile Netherlands, T-Systems Iberia, T-Systems in India as well as all T-Systems and GBS entities in Russia met 100 % of their electricity requirements from renewable sources. By the end of 2021, we also plan to have fully converted our entire Deutsche Telekom network, across the entire gamut from mobile telecommunications to the high-speed DSL network, to renewable electricity. Above and beyond this, we are supporting a responsible approach to digitalization, e.g., with our campaigns for digital civil courage (#TAKEPART – No hate speech) and promoting digital democracy projects (dabei-geschichten.telekom.com). SDG 13 ENVIRONMENT SDG 16 RELATIONSHIPS

In summary, our Leading European Telco strategy is reflected in our goal to be

the leading European telecommunications provider.

- We want to be a **leader** in terms of customer experience, technology, and the implementation of advances in productivity for our business customers. Because only when we lead can we **grow** and meet the demands of our investors in the long term.
- This growth will be made possible by carefully managing our **financial resources** and **systematically transforming** the Company to be simple, digital, and agile in every sense.
- We play a responsible and active role in **society**. We are a partner, not just at a social level, but also at a political one, and we work in the interests of ensuring the open, forward-looking development of all countries in which we are active. SDG 8 RELATIONSHIPS

Management of the Group

We are committed to the concept of value-oriented corporate governance. We want to strike a balance between the contrasting expectations of our stakeholders so that sufficient funding is available for an attractive dividend, debt repayment, responsible staff restructuring, and new investment for a positive customer experience.

- **Shareholders** expect an appropriate, reliable return on their capital employed.
- **Providers of debt capital** expect an appropriate return and that Deutsche Telekom is able to repay its debts.
- **Employees** expect jobs that are secure, prospects for the future, and that any necessary staff restructuring will be done in a responsible manner.
- **“Entrepreneurs within the enterprise”** expect sufficient investment funding to be able to shape Deutsche Telekom’s future business and develop products, innovations, and services for the customer.
- **Society** expects us to do everything within our power to protect the environment, encourage a fair and democratic co-existence, and shape the digital transformation in a responsible manner. SDG 17 RELATIONSHIPS

Finance strategy

We announced our finance strategy for the years 2018 through 2021 at the Capital Markets Day in late May 2018. Our forecast for growth through to 2021 remains at the same high level we anticipated at our Capital Markets Day in 2015 for the period 2014 through 2018.

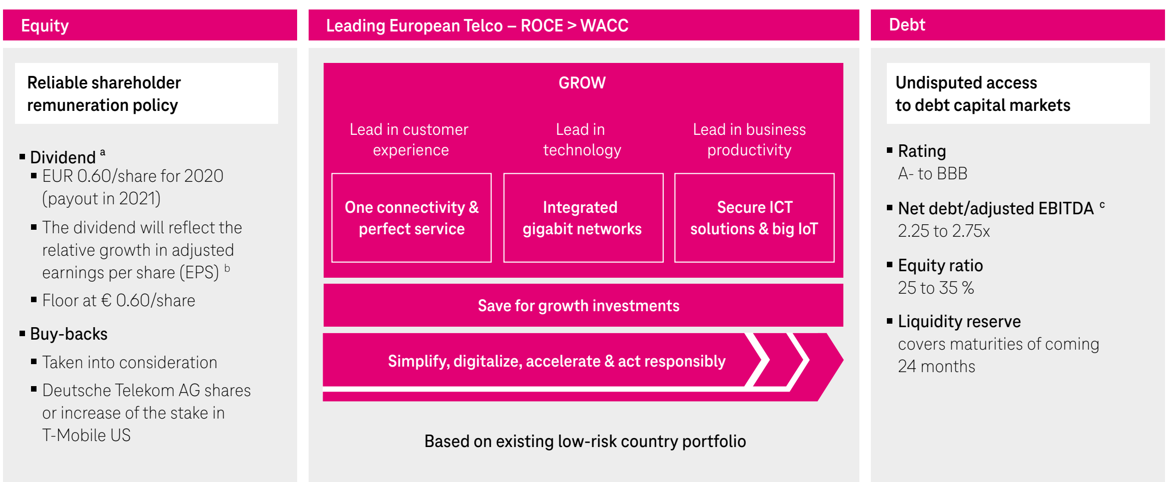
Part of our finance strategy was to achieve our target financial ratios – relative debt (ratio of net debt to adjusted EBITDA) and equity ratio – along with a liquidity reserve that covers our maturities of the coming 24 months at least. With these clear statements we intend to maintain our rating in a corridor from A- to BBB and safeguard undisputed access to the capital market.

There is a sustainable dividend policy for shareholders, which is subject to approval by the relevant bodies and the fulfillment of other legal requirements. The new dividend policy introduced in 2019 sets out a minimum dividend of EUR 0.60 per dividend-bearing share. The dividend is to continue to reflect the relative growth in adjusted earnings per share (EPS). For the 2020 financial year, we will propose a dividend of EUR 0.60 for each dividend-bearing share. We thus offer our shareholders both an attractive return and planning reliability.

We will also take share buy-backs into consideration, both of Deutsche Telekom AG shares and shares in T-Mobile US.

Total capital expenditure is also to remain high in the next few years. The scope for investment is to be used to further roll out our broadband infrastructure and to accelerate the transformation of the Company. In mobile communications, the infrastructure build-out will focus on the LTE and 5G standards and, in the fixed network, on optical fiber and vectoring. The finance strategy supports the transformation of our Group into the Leading European Telco. In order to generate a sustainable increase in value, we intend to earn at least our cost of capital. We plan to meet this target by optimizing the utilization of our non-current assets on the one hand, and pursuing strict cost discipline and sustainable profitable revenue growth on the other.

Our finance strategy through 2021



[a] Subject to approval by the relevant bodies and the fulfillment of other legal requirements.
[b] Adjusted earnings per share 2019 as starting point.
[c] Deviation from the target range for a short period as a result of the business combination of T-Mobile US and Sprint.

We will provide information about the further development of our finance strategy for the years following 2021 at our Capital Markets Day, which is planned for 2021.

Performance management system

In order to set and achieve our strategic goals more effectively, we pursue a Group-wide, value-oriented performance management approach. We use a specific set of performance indicators to reliably and transparently measure success. The following tables and information provide an overview of our key financial and non-financial performance indicators.

Financial performance indicators

		2020	2019	2018	2017	2016
ROCE	%	4.6	5.1	4.7	5.8	5.7
Net revenue	billions of €	101.0	80.5	75.7	74.9	73.1
Profit (loss) from operations (EBIT)	billions of €	12.8	9.5	8.0	9.4	9.2
EBITDA AL (adjusted for special factors)[a]	billions of €	35.0	24.7	23.1	n.a.	n.a.
Free cash flow AL (before dividend payments and spectrum investment)[a, b]	billions of €	6.3	7.0	6.1	n.a.	n.a.
Cash capex (before spectrum investment)	billions of €	(17.0)	(13.1)	(12.2)	(12.1)	(11.0)
Rating (Standard & Poor's, Fitch)		BBB, BBB+	BBB+	BBB+	BBB+	BBB+
Rating (Moody's)		Baa1	Baa1	Baa1	Baa1	Baa1

[a] Comparatives for 2018 were calculated on a pro forma basis for the key performance indicators redefined as of January 1, 2019 following the introduction of the IFRS 16 accounting standard.

[b] Before interest payments for zero-coupon bonds and before termination of forward-payer swaps at T-Mobile US.

Since the start of the 2019 financial year, we have taken the effects of the first-time application of IFRS 16 "Leases" into account when determining our financial performance indicators. The calculation of ROCE was adjusted in line with IFRS 16 with minimal impact on the overall amount. Following this change, we now measure our operating earnings performance on the basis of EBITDA AL and no longer on the basis of EBITDA. Free cash flow was replaced by free cash flow AL. For purposes of better comparability, comparative figures were calculated on a pro forma basis for the 2018 financial year; all other prior-year figures were not adjusted retrospectively.

Profitability

We have incorporated sustainable growth in enterprise value into our medium-term aims and implemented it as a separate KPI (key performance indicator) for the entire Group. Return on capital employed (**ROCE**) is a key performance indicator at Group level. ROCE is the ratio of operating result after depreciation, amortization and impairment losses plus imputed taxes (net operating profit after taxes, NOPAT) to the average value of the assets tied up in the course of the year (net operating assets, NOA).

Our goal is to achieve or exceed the return targets imposed on us by providers of debt capital and equity on the basis of capital market requirements. We measure return targets using the weighted average cost of capital (WACC).

NOPAT is an earnings indicator derived from the income statement, taking an imputed tax expense into consideration. It does not include cost of capital.

NOA includes all assets that make a direct contribution to revenue generation. These include all elements on the asset side of the consolidated statement of financial position that are essential to the rendering of services. Operating working capital is calculated from trade receivables, inventories, and trade and other payables. The figure for other provisions is deducted as no return target exists for this.

Revenue and earnings

Revenue corresponds to the value of our operating activities. Absolute revenue depends on how well we are able to sell our products and services on the market. The development of our revenue is an essential indicator for measuring the Company's success. New products and services as well as additional sales activities are only successful if they increase revenue.

EBITDA corresponds to **EBIT** (profit/loss from operations) before depreciation, amortization and impairment losses. EBIT and EBITDA measure the short-term operational performance and the success of individual business areas. In order to ensure maximum comparability with our previous KPIs following the application of IFRS 16 as of January 1, 2019, starting in the 2019 financial year we have measured our operating earnings performance on the basis of **EBITDA AL** – i.e., EBITDA adjusted for depreciation of right-of-use assets and for interest expenses on recognized lease liabilities. In addition to these absolute indicators, we also use the EBIT and EBITDA AL margins to show how these indicators develop in relation to revenue. This makes it possible to compare the earnings performance of profit-oriented units of different sizes. Taking unadjusted EBIT/EBITDA AL as performance indicators means special factors are also taken into account. This promotes a holistic view of our expenses. However, special factors have an impact on the presentation of operations, making it more difficult to compare performance indicators with corresponding figures for prior periods. For this reason, we additionally adjust our performance indicators to provide transparency. Without this adjustment, statements about the future development of earnings are only possible to a limited extent. The adjusted values are calculated on the basis of the unadjusted performance indicators.

For the reconciliation of EBITDA AL, EBIT, and net profit/loss to the respective figures adjusted for special factors, please refer to the section "Development of business in the Group."

Financial flexibility

Free cash flow AL (before dividend payments and spectrum investment) is calculated as net cash from operating activities less net cash outflows for investments in intangible assets (excluding goodwill) and property, plant and equipment, as well as the principal portion of repayment of lease liabilities – excluding finance leases at T-Mobile US. Free cash flow AL is a key yardstick for providers of debt capital and equity. It measures the potential for further developing our Company, for generating organic growth, and for the ability to pay dividends and repay debt.

Cash capex (before spectrum investment) relates to cash outflows for investments in intangible assets (excluding goodwill) and property, plant and equipment, which are relevant for cash outflows as a component of free cash flow.

A **rating** is an assessment or classification of the creditworthiness of debt securities and its issuer according to uniform criteria. Assessment of creditworthiness by rating agencies influences interest rates on debt securities and thus also our borrowing costs. As part of our finance policy, we have defined a target range for our ratings. We believe that with a rating between A- and BBB (Standard & Poor's, Fitch) or between A3 and Baa2 (Moody's) we essentially have the necessary entry to the capital markets to generate the required financing.

Non-financial performance indicators

		2020	2019	2018	2017	2016
Customer satisfaction (TRI*M index)		72.2	67.3	67.7	68.6	70.2
Employee satisfaction (commitment index)[a]		4.0	4.0	4.1	4.1	4.1
Fixed-network and mobile customers						
Mobile customers[b]	millions	241.8	184.0	178.4	168.4	165.0
Fixed-network lines	millions	27.4	27.5	27.9	27.9	28.5
Broadband customers[c, d]	millions	21.7	21.0	20.2	18.9	18.4
Systems Solutions						
Order entry[e]	millions of €	4,588	4,740	6,776	5,241	6,851

[a] Commitment index determined on the basis of the employee surveys carried out in 2019 and 2017.

[b] Including T-Mobile US wholesale customers.

[c] Excluding wholesale.

[d] Starting in the second quarter of 2018, we no longer report the number of broadband lines from a technical perspective. Instead, we report the number of broadband customers. The figures for 2016 and 2017 have been adjusted accordingly.

[e] Order entry for the 2019 financial year was adjusted retrospectively in connection with the realignment of the B2B telecommunications business.

We want our customers to be satisfied – or even delighted – as satisfied customers act as multipliers for our Company's success. As a responsible, service-oriented company, the needs and opinions of our customers are of great importance to us, and we want them to stay with our Company in the long term. For this reason we measure **customer retention/satisfaction** in our companies using the globally recognized TRI*M method. The results of systematic surveys are expressed by an indicator known as the **TRI*M index**. To underscore the major significance of customer retention/satisfaction for our operations, in 2010 we made this key indicator one of four parameters for the long-term variable remuneration (Variable II) for our Board of Management members and in 2015 included it as part of the Long-Term Incentive Plan (LTIP) for managers (excluding Board of Management members). We take the TRI*M indexes calculated for the operating entities (excluding T-Mobile US) as an approximation of the respective entities' percentage of total revenue to create an aggregate TRI*M Group value. Over a period of four years, the eligible managers can benefit from the development of customer retention/satisfaction across the Group.

For further information on customer satisfaction, please refer to the section "Group strategy."

Our employees want to contribute to the further development of the Company and identify with it. We want to establish an open dialog and a productive exchange with our employees: New ways of working and modern means of communication help us achieve this, as do regular surveys. The most important feedback instruments across the Group (excluding T-Mobile US) for assessing **employee satisfaction** include regular employee surveys and the pulse survey carried out twice a year. In our Company, we measure the employee satisfaction performance indicator using the **commitment index** – derived from the results of the last employee survey. SDG 8 EMPLOYEES

For further information about employee satisfaction, please refer to the section "Employees."

In view of the major significance of employee satisfaction for the success of the Company, Board of Management members are now also being managed and incentivized by means of the long-term variable performance-based remuneration (Variable II). Employee feedback as one of four parameters has been relevant for Variable II since 2010, and for the Long-Term Incentive Plan (LTIP) which was launched in 2015 for our managers (excluding Board of Management members). This allows Board members and eligible managers to benefit from the development of employee satisfaction across the Group.

As one of the leading providers of telecommunications and information technology worldwide, the development of our Group – and thus also our financial performance indicators – is closely linked to the development of **customer figures**. Acquiring and retaining customers are thus essential to the success of our Company. We have different ways of measuring the development of our customer figures according to the business activity in our operating segments: Depending on the activities of each segment, we measure the number of mobile customers and/or the number of broadband customers and fixed-network lines.

In our Systems Solutions operating segment, we use **order entry** as a non-financial performance indicator. We define and calculate order entry as the total of all amounts resulting from customer orders received in the financial year. Order entry in the form of long-term contracts is of great significance to the Group in order to estimate revenue potential. In other words, order entry is an indicator that provides a high degree of planning reliability.

The economic environment

Macroeconomic development

The outbreak of the coronavirus pandemic in spring 2020 plunged the global economy into a deep recession. As the virus began its spread worldwide, countries responded with copious containment measures, including restrictions on social contact and travel, business closures, and bans on mass events. States and central banks rolled out far-reaching monetary and fiscal policy measures to cushion the economic downturn.

As the crisis progressed, leading economic research institutes made substantial downward adjustments to their outlooks for world economic output. The International Monetary Fund (IMF) projects a 4.4 % decline in world economic output for 2020. Economic output in our core markets also shrank in the reporting year. After bottoming out in the second quarter of 2020, economic activity had moved into a period of recovery as containment measures were lifted and infection rates went down. However, the rate of recovery began to slow again in fall 2020 due to the renewed acceleration of the pandemic, resulting in tighter containment measures in many areas and changes in people's behavior. The IMF expects the global economy to only partially recover in 2021 given that economic activity will remain significantly below the level that had been projected before the emergence of the coronavirus crisis.

GDP in Germany decreased by 5.0 % year-on-year. The coronavirus crisis affected individual industry sectors to varying extents. The Bitkom-ifo-Digitalindex, calculated on the basis of the business situation and expectations, dropped sharply in the first months of 2020. After reaching its lowest level in April, the index returned to significant growth through December but remained well below its pre-pandemic level. The business climate in the ICT sector remained relatively buoyant compared with the economy as a whole.

Economic output in the United States declined by 3.5 % in the reporting year, with the U.S. economy hitting its lowest point in April 2020. This was followed by a period of recovery as social contact restrictions were lifted, although this recovery lost momentum in the second half of 2020 as infection rates began to rise again. In the countries of our Europe operating segment, those economies that are heavily reliant on the service sector were hit particularly hard by the coronavirus pandemic. Domestic consumption declined across all footprint countries; rising unemployment rates were kept in check primarily thanks to state aid programs in many places.

The following table shows the GDP growth rate trends and the unemployment/non-employment rates in our most important markets. The unemployment rate for Germany and the non-employment rates for the other countries are presented in conformance with ILO standards.

%	GDP for 2018 compared with 2017	GDP for 2019 compared with 2018	GDP estimate for 2020 compared with 2019	Unemployment/ non-employment rate in 2018	Unemployment/ non-employment rate in 2019	Estimated unemployment/ non-employment rate in 2020
Germany	1.3	0.6	(5.0)	5.2	5.0	5.9
United States	2.9	2.3	(3.5)	3.9	3.7	7.7
Greece	1.6	1.9	(9.0)	19.3	17.3	18.0
Romania	4.5	4.2	(5.2)	4.2	3.9	5.9
Hungary	5.4	4.6	(6.4)	3.7	3.4	4.4
Poland	5.4	4.5	(3.6)	3.9	3.3	4.0
Czech Republic	3.2	2.3	(6.9)	2.2	2.0	2.7
Croatia	2.8	2.9	(9.6)	8.5	6.6	7.7
Netherlands	2.4	1.7	(5.3)	3.8	3.4	4.4
Slovakia	3.8	2.3	(7.5)	6.5	5.8	6.9
Austria	2.6	1.4	(7.1)	4.9	4.5	5.5

Source: Eurostat, European Commission, national authorities. Last revised: December 2020.

Telecommunications market
Demand for high-speed broadband – over the fixed and mobile networks – remains high. According to estimates by Analysys Mason, data traffic over the fixed network grew by 26 % worldwide in 2020. Estimates by Dialog Consult put the average data volume per fixed-network line and month in Germany in the reporting year at 168 gigabytes (GB) – an increase of 25 % year-on-year. According to Analysys Mason, mobile data traffic grew worldwide by 55 % in 2020. In Germany, the average data volume per SIM card and month stood at 3.0 GB in the reporting year, up by 45 % year-on-year (according to estimates by Dialog Consult). For the telecommunications industry, these developments present both a challenge and the opportunity to monetize the strong growth in volume.

Worldwide, revenues on the market for information and communications technologies (ICT) decreased by 0.4 % in the reporting year to EUR 3.6 trillion as a result of the coronavirus pandemic. The German digital association for information technology, telecommunications and new media Bitkom and the European Information Technology Observatory (EITO) expect the telecommunications market segment (services and equipment) to record a decrease of 2.1 % worldwide to EUR 1.7 trillion and the information technology (IT) market segment to record a slight increase of 1.2 % for 2020.

In the European Union (EU), revenues in the telecommunications market segment decreased by 3.3 % in 2020. Revenues from telecommunications equipment declined by 6.2 %, while revenues from telecommunications services were down by 2.2 %. In the United States, revenues with telecommunications equipment declined by 2.4 % in the reporting year and revenues with telecommunications services were down slightly by 0.1 % in the same period.

The telecommunications industry continues to be characterized by intense competition. Consumers benefit from a greater range of products to choose from. Each of our markets is occupied by three or four mobile operators with their own network infrastructure. On top of this, we are seeing MVNOs becoming established in many markets using the network infrastructure of traditional mobile network operators. In the fixed network, too, established telecommunications companies are competing intensively with cable network operators, city network operators, and resellers, who predominantly make use of regulated wholesale products. Added to this are internet companies with over-the-top (OTT) communication services that further intensify the competitive pressure.

The rapid technological transformation in the telecommunications sector calls for high investments to build out next-generation network infrastructure. GSMA Intelligence estimates that mobile operators will invest some USD 1 trillion worldwide in the rollout of 5G networks (excluding spectrum) over the next few years. Telecommunications networks are continually being upgraded with optical fiber. Established telecommunications companies like Deutsche Telekom are investing a substantial portion of their revenues in building out network infrastructure and acquiring spectrum. To ensure that these efforts can continue, we expect political and regulatory conditions that allow network investors to plan ahead reliably and generate appropriate returns for their investments.

Germany

According to EITO, revenue from IT products and services, telecommunications, and consumer electronics decreased by 0.1 % to EUR 143.5 billion in Germany in the reporting year, largely driven by the impact of the coronavirus pandemic. The decline was felt mainly in telecommunications revenue (telecommunications services, terminal equipment, and infrastructure), which decreased by 0.6 % to EUR 56.8 billion. Revenue with information technology increased slightly by 0.3 % to EUR 86.7 billion.

The number of broadband lines in Germany grew by 2.4 % in 2020 to around 36.7 million at year-end, according to EITO. For 2021, the number of broadband lines is expected to grow by a further 2.5 % to 37.5 million. Companies with their own infrastructure benefited the most from this market growth, along with resellers and regional providers. High-bandwidth lines are increasingly marketed in cable and VDSL/vectoring networks. The offerings in this area are supported by innovative hybrid connection technologies. The availability of high bandwidths in Germany and the large choice of HD content and video-on-demand services are stimulating customer growth in IPTV business. Convergent offers comprising fixed-network and mobile communications (fixed-mobile convergence, FMC) offer customers many advantages and help increase customer retention. The trend for convergence products continued in the reporting year. We tapped into this trend with the addition of MagentaEINS Plus to our convergent offerings in September 2020. The original MagentaEINS was launched back in fall 2014 – Vodafone and O_2 have since followed suit with convergence products of their own.

In the German mobile market, service revenues increased by 0.4 % against 2019 to approximately EUR 20.0 billion. This revenue growth was driven largely by the continued rise in data usage, which was offset by regulatory effects as well as sustained price and competitive pressure. Mobile data usage continues to increase strongly on the back of growing use of products such as mobile video apps. The percentage of voice and data rate plans is rising steadily. Traditional voice and text messaging services are increasingly being replaced by free IP messaging services like WhatsApp and social networks like Facebook. Connected products such as smartphones and tablets, as well as other connected devices such as watches, shoes, bicycles, and much more, are growing ever more popular, pushing up demand for mobile broadband speeds and for large data volumes in the rate plan portfolios.

Digitalization is continuing apace, and as a result there is also growing demand by the industry for more connectivity to allow machines and production sites to be networked and to tap efficiencies in value chains. Extensive IT and cloud solutions, as well as intelligent approaches to M2M communication are needed in order to meet these demands.

United States

In the United States, the coronavirus pandemic dampened the economy and the mobile communications sector due in part to the temporary closure of shops and offices. In parallel, the increased use of video conferencing and streaming services caused a sharp rise in data traffic over the networks. Despite the higher loads, both the mobile networks and the mobile communications industry as a whole proved resilient during these times.

In the U.S. mobile communications market, the business combination of T-Mobile US and Sprint has created a market with three national mobile providers alongside various regional network operators. Additionally, an array of mobile virtual network operators (MVNOs) offer mobile services, using the networks of one or more of the three national carriers to transmit their voice and data traffic.

The market remains highly dynamic, largely due to the competition posed by cable operators. Comcast, Charter, and Altice use their own existing Wi-Fi networks to deliver mobile communications services, with Comcast and Charter falling back on Verizon's network and Altice previously/so far on Sprint's network (which now belongs to T-Mobile US) when out of their respective Wi-Fi footprints. Altice also has a roaming agreement with AT&T. These offerings from cable operators and MVNOs have slowly churned customers away from the traditional mobile providers, intensifying the competitive pressure and bolstering the ongoing efforts of cable operators to gain traction in the mobile market.

The entry of satellite TV operator DISH into the market is expected to add new competitive pressure: DISH holds licenses to vast swaths of airwaves and has announced plans for building its own 5G network in 2021. DISH benefited from the business combination of T-Mobile US and Sprint, consummated in 2020, which included the sale of Sprint's prepaid business to DISH effective July 1, 2020 as a major prerequisite for the U.S. authorities approving the merger.

In the United States, 5G commercialization continues to move at a swift pace. All three nationwide mobile providers have launched 5G services, as have a number of regional providers. 5G is being built out in the United States utilizing both sub-6 GHz spectrum and millimeter wave (mmWave). T-Mobile US's 5G network now covers 280 million people in the United States. All carriers will continue to expand their networks in the coming months according to different models which, for the time being, emphasize different spectrum bands.

For its part, the U.S. Federal Communications Commission (FCC) has taken various steps to encourage investment in mobile communications. For example, to help providers prepare for the deployment of 5G networks, the FCC has cleared regulatory hurdles, and preempted several state and local obstacles, in efforts to streamline the build-out. Additionally, in 2020 the FCC held several auctions for spectrum integral to the 5G build-out. The C-band auction for spectrum in the 3,700 to 4,200 MHz band began on December 8, 2020 and ended on January 15, 2021.

Europe

The traditional telecommunications markets in our segment were primarily impacted by the coronavirus pandemic in the reporting year. This resulted, among other effects, in a substantial year-on-year decline in mobile roaming revenues due to travel restrictions. Full and partial lockdowns in our footprint countries over the course of the year led to the temporary closure of shops and other measures. Public life moved online to a large extent, driving a corresponding increase in demand for broadband and TV services. According to Analysys Mason, fixed-network business (excluding systems solutions business) proved robust and was able to offset the decline in revenues from voice telephony. Despite posting losses in roaming business, revenue from mobile communications remained stable year-on-year. Overall, revenues were on a par with the prior-year level.

Following a sustained period of market consolidation in our European footprint driven by a number of mergers and takeovers in recent years, activities in this area continued in 2020 albeit to a much lesser extent. For instance, in Poland Iliad took over Play and in Greece United Group took over Forthnet. Furthermore, no new market entrants were identified, for instance, as participants in the 2020 5G auctions. Investments in the 5G network were stepped up in the reporting year. Auctions were held in various countries, including Hungary, Greece, Austria, the Czech Republic, and Slovakia.

The unabated strong trend towards convergent product packages combining fixed-network and mobile communications (FMC) gained further momentum. The experts at Analysys Mason expect FMC revenues to grow year-on-year, bolstered on the one hand by the takeover of selected Liberty Global cable operations by Vodafone, e.g., in Hungary and Romania in 2019, and on the other by attractive retail offers, such as Orange Love in Poland, but also MagentaOne and CosmoteOne in our subsidiaries. These integrated convenience packages are enjoying strong growth in our companies and, in some areas, already address the majority of consumers, which is having a positive impact on customer satisfaction and churn rates.

Subscription-based streaming services such as Netflix and Prime Video still only have limited potential for substituting traditional pay TV in the markets of our Europe operating segment. Analysys Mason puts the share at around just 8 %, partly due to the fixed international pricing of the majority of these services – prices that are not (or only marginally) localized to purchasing power – and partly because content is not or only to a limited extent dubbed into local languages and thus only appeals to small sections of the population. Despite this, the appeal of this business model is evidenced by the year-on-year trend: according to Analysys Mason, revenues with streaming services in Europe posted above-average growth – the customer base grew by almost 50 %.

For the business customer area, 2020 was a year of manifold opportunities and challenges alike. The latter include not least the record low hit by roaming revenues in the European telecommunications market as just one of the effects of the coronavirus pandemic. Nevertheless, the telecommunications industry is emerging as one of the winners of the worldwide coronavirus crisis, with most businesses posting stable to rising revenues across their mobile communications, fixed-network, and ICT/cloud divisions. So, too, were most of Deutsche Telekom's European subsidiaries able to leverage the opportunities arising from the crisis despite falling revenues from hard-hit industries, especially tourism, or from postponed tendering processes for corporate customer projects. Attractive mobile data bundles, home-working solutions, and collaboration tools were marketed with great success, particularly at our Polish and Austrian subsidiaries. Cisco Webex and Microsoft Teams were some of the most popular services from our ICT/cloud portfolio in the reporting year across all business customer segments and in the public sector.

Systems Solutions

In the information technology (IT) industry in our core market of Western Europe, the volume addressed by our Systems Solutions operating segment and the T-Systems brand decreased by 2.6 % in the reporting year to EUR 185 billion largely due to the coronavirus pandemic. The IT services market, in particular, posted revenue declines in 2020, with coronavirus the biggest contributor to this trend. The effects of the global pandemic have negatively affected IT customer spending. Challenging conditions across virtually all industries led to the deferral of many large-scale IT projects. However, this trend impacted the business areas of the market in very different ways.

In terms of IT services, demand has grown further for public cloud services and cybersecurity services, as has the importance of digitalization, the Internet of Things (including Industry 4.0), and communication between machines (M2M). The health sector also developed positively, with growth reaching double digits in some areas. By contrast, demand was down in the market segments for traditional infrastructure, project business, and SAP services. Business with outsourcing and managed services proved much more resilient. The market for cloud-based systems integration services grew by almost 1.5 % despite the coronavirus pandemic.

Competitive and price pressure persisted in all submarkets of our Systems Solutions operating segment. This was due on the one hand to competitors from traditional IT services business, such as IBM, Atos, and Capgemini, and on the other to cloud providers such as Amazon Web Services, Google, and Salesforce. Prices were eroded further by providers of services that are delivered primarily offshore (e.g., Tata Consultancy Services, Infosys, Wipro).

Group Development

The environment of our Group Development operating segment is largely dominated by the markets served by our companies T-Mobile Netherlands and Deutsche Funkturm (DFMG).

While the Dutch mobile communications market continues to be characterized by sustained high price pressure and intense competition, this is expected to ease moderately in the coming years. The Netherlands is ahead of much of Europe with its bundling of fixed-network and mobile products into convergent offers (FMC). The dominance of KPN and VodafoneZiggo in fixed-network business is keeping the pressure on mobile product pricing high due to the FMC trend. Moreover, the rapid technological transformation calls for high investments. Investments in building out 5G network infrastructure continued in 2020 following the Dutch 5G auction.

DFMG is the biggest provider of passive wireless infrastructure for mobile communications and broadcasting in Germany. Despite the coronavirus pandemic, the market again saw increased demand for cell sites in the 2020 financial year, due on the one hand to the fact that network operators plan to close gaps in coverage, and on the other to the fact that demand for mobile data services is growing, which calls for a further increase in the density of mobile networks.

Major regulatory decisions

Our business activities are largely subject to national, European, and U.S. regulation, which is associated with extensive powers to intervene in our product design and pricing, particularly in Europe. We were again subject to extensive regulation in our mobile and fixed-network businesses in 2020.

Regulation

Amendment of telecommunications laws in the European Union. The Federal Cabinet of Germany (Bundeskabinett) approved the draft for the amendment of the German Telecommunications Act (Telekommunikationsgesetz, TKG) on December 16, 2020. The amendment is necessary in order to transpose European requirements from the European Electronic Communications Code into national law. The biggest changes affect consumer protection regulations, the regulation of “very high capacity networks” (including FTTH), spectrum regulation, and the regulations on universal service. In view of the Code’s implementation deadlines, the amended Act should have been published by the end of 2020 at the latest. The need for further readings in the legislative process delayed the publication of the Act. It is now expected in the first half of 2021. The Code is also being transposed into national law in the countries of our European subsidiaries. In some, this process was completed by the end of 2020, whereas in others implementation will take until 2021.

Roaming regulation. The European Commission launched a consultation procedure on the future regulation of international roaming in summer 2020. The current regulation applies price caps through 2022 on the roaming charges that European mobile network operators can bill peer operators for the use of roaming services. In addition to the future regulation of these charges, the Commission also consulted on whether and which rules will apply in the future to roaming for the Internet of Things (IoT) and to roaming access to value-added services and emergency call numbers.

European Commission sets termination rates from 2021. On December 18, 2020, the European Commission published a Delegated Act setting single maximum Union-wide mobile (MTR) and fixed-network (FTR) termination rates. The Commission proposes a phased reduction of MTRs to a uniform level of 0.2 eurocents/min. by 2024. FTRs are to be reduced sooner, to 0.07 eurocents/min. EU-wide by 2022. The Delegated Act is expected to enter into force in the first half of 2021; from the date of effect, member states will have a transition period of two months to apply the price caps contained in the Act.

Awarding of spectrum

T-Mobile US successfully bid on total spectrum of 691 MHz at the U.S. auction in March 2020 and received the 5G licenses it bought for USD 873 million in April 2020. A further CBRS auction in the United States for spectrum in the 3,550 to 3,650 MHz band ended on August 25, 2020. T-Mobile US secured eight licenses for which it paid a net sum of USD 6 million. The C-band auction for spectrum in the 3,700 to 4,200 MHz band began on December 8, 2020 and ended on January 15, 2021. The spectrum assignment phase, however, is still ongoing. T-Mobile US was one of 57 auction participants.

In Europe, Deutsche Telekom and its subsidiaries received the following spectrum up to the end of 2020: Magyar Telekom in Hungary was assigned spectrum in the 700; 2,100; 2,600; and 3,400 to 3,800 MHz bands (totaling 160 MHz) in April 2020, which it had previously acquired at auction for EUR 152 million (when translated into euros). In the Netherlands, an auction started on June 29, 2020 for spectrum in the 700; 1,500; and 2,100 MHz bands. The auction ended with the completion of the allotment phase on July 21, 2020. T-Mobile Netherlands successfully bid on a total spectrum of 70 MHz in all three bands for an aggregate amount of EUR 400 million. In Austria the auction for spectrum in the 700; 1,500; and 2,100 MHz bands ended on September 11, 2020. T-Mobile Austria acquired total spectrum of 100 MHz in all three bands for EUR 89 million. In Greece, spectrum was awarded in the 700; 2,100; 3,400 to 3,800 MHz; and 26,000 MHz bands in the fourth quarter of 2020. Given that the market's three only active network operators took part in the award proceedings and that no scarcity of spectrum arose in the 700; 2,100; and 26,000 MHz bands, it was possible to assign the volumes in question without the need for auction. The second auction phase ended on December 16, 2020 for 90 MHz of available spectrum in the 3,400 to 3,800 MHz band. OTE's subsidiary Cosmote received total spectrum worth EUR 110 million in the first phase followed by spectrum worth around EUR 14 million in the second phase. Slovakia successfully concluded its auction for the 700, 900, and 1,800 MHz bands in November 2020, with Slovak Telekom acquiring spectrum for a total sum of EUR 33 million. In the Czech Republic, the auction that had been rescheduled on account of coronavirus for the 700 MHz and 3,400 to 3,600 MHz bands was also held in November 2020. T-Mobile Czech Republic secured spectrum worth EUR 72 million (when translated into euros).

In Hungary, proceedings to re-award 900 and 1,800 MHz spectrum licenses that are due to expire in 2022 were held on January 28, 2021 and concluded the same day. Magyar Telekom acquired 2x 8 MHz and 2x 20 MHz in the respective bands for a total price of EUR 123 million (when translated into euros). While Poland has made no further announcements regarding a new start date for the postponed auction for 3,400 to 3,800 MHz, it is expected the auction will be held in 2021. Croatia plans to award the 700 MHz and 3,400 to 3,800 MHz bands and possibly further spectrum in the first half of 2021. Romania is set to auction spectrum in the 700; 800; 1,500; 2,600; and 3,400 to 3,800 MHz ranges in the second half of 2021. In Slovakia the 3,400 to 3,800 MHz band is expected to be allocated in 2021.

The following table provides an overview of the main ongoing and planned spectrum awards and auctions as well as license extensions. It also indicates spectrum to be awarded in the near future in various countries.

Main spectrum awards

	Expected start of award procedure	Expected end of award procedure	Frequency ranges (MHz)	Award process	Updated information
Croatia	Q1 2021	Q2 2021	700 / 3,400–3,800, additional bands possible	Auction, details tbd	Implementation in 2021 under preparation. Further bands expected in 2022.
Poland	Q1 2021	Q2 2021	3,400–3,800	Auction (SMRA[a]), details tbd	Following postponement due to coronavirus pandemic, relaunch expected in 2021.
Poland	Q3 2022	Q4 2022	700 / 2,100 / 26,000	Auction, details tbd	Plans for 2022; 26,000 MHz still unclear.
Romania	Q3 2021	Q4 2021	700 / 800 / 1,500 / 2,600 / 3,400–3,800	Auction, details tbd	Additional 2,100 MHz possible.
Slovakia	Q3 2021	Q4 2021	3,400–3,800	Auction (SMRA[a]), details tbd	
Czech Republic	Q3 2022	Q4 2022	900 / 1,800	Extension expected	Previous TMCZ licenses due to expire in 2024.
Hungary	2022 / 2023	2022 / 2023	1,500 / 2,300 / 26,000	Auction, details tbd	
United States		Completed	3,700–4,200	Auction (clock auction)	Completed: Jan. 15, 2021. The spectrum assignment phase, however, is still ongoing.
United States	Q3 2021	Q4 2021	2,500–2,700	Auction (SMRA[a])	Start/end: expected in the second half of 2021 at the earliest.

[a] Simultaneous electronic multi-round auction with ascending, parallel bids for all available frequency ranges.

Development of business in the Group

Statement of the Board of Management on business development in 2020

Bonn, February 16, 2021

Although the coronavirus pandemic and its impact have not left us unscathed, we had a successful financial year in 2020 with very strong results. The business combination of T-Mobile US and Sprint is a fantastic success. The inclusion of Sprint for the first time took us to a whole new dimension: we are now a corporation with revenue of more than EUR 100 billion. We continued our success story in Europe – with its integrated offerings, Deutsche Telekom is the market leader in the majority of countries. In Germany, we have received great recognition for our performance in terms of service, network build-out, and our integrated products. We are living up to our responsibility to society during the coronavirus pandemic, through stable networks, strong customer focus, and best service, and we remain a dependable partner to German industry with a product portfolio of international communications solutions.

Furthermore, we did not lose sight of our ambitious climate targets in the reporting year. Since early 2020, our customers in Germany have been surfing on Deutsche Telekom's green network, which is powered solely by electricity from renewable sources. Since the start of 2021, this applies to all our customer worldwide.

We achieved our most important corporate targets in 2020 and even exceeded some of them, despite the impact of the coronavirus pandemic. Net revenue increased by 25.4 % to EUR 101.0 billion. In organic terms, net revenue increased by 3.0 %, i.e., adjusted in particular for the acquisitions of Sprint, the sale of the prepaid business of Sprint to DISH, and currency translation effects. Given the general environment, the business performed well in the Germany, Europe, and Group Development operating segments. This is the result of the great popularity of our mobile and broadband offerings in particular. In the U.S. business, T-Mobile US recorded the highest customer growth in the company's history: on a like-for-like basis, the number of postpaid customers increased by 5.5 million. The systems solutions business, by contrast, was impacted by the coronavirus pandemic: in addition to the development in traditional IT business, which fell short of expectations during the year, the coronavirus crisis resulted in the recognition of an impairment loss on non-current assets in the third quarter of 2020.

Adjusted EBITDA AL grew by 41.6 % to EUR 35.0 billion; in organic terms, it grew by 7.9 %. The main reason for this increase is a sound operational development, driven by revenue growth and further enhanced cost efficiency. EBIT increased by EUR 3.3 billion to EUR 12.8 billion, despite negative special factors that affected it. These mainly related to acquisition and integration costs as well as restructuring costs to realize cost efficiencies from the business combination with Sprint. By contrast, the partial reversal of impairment losses on spectrum licenses at T-Mobile US had a positive impact. Depreciation and amortization were much higher than in the prior year due to the acquisition of Sprint.

The strong operational development is also reflected in net profit, which increased by EUR 0.3 billion to EUR 4.2 billion, despite the negative impact on our finance costs due to the financial liabilities acquired in connection with the acquisition of Sprint and the related restructuring of financing. Measurement effects in connection with the stock options to buy shares in T-Mobile US received from SoftBank had a positive effect. Adjusted net profit increased by EUR 0.8 billion to EUR 5.7 billion. Adjusted earnings per share increased to EUR 1.20 in the reporting year.

ROCE decreased year-on-year to 4.6 % due largely to the substantial increase in average net operating assets (NOA). This is attributable in particular to the spectrum licenses acquired as part of the Sprint transaction and to the modification of existing agreements with American Tower on the lease and use of cell sites in the United States.

Net debt increased from EUR 76.0 billion to EUR 120.2 billion. The vast majority of this increase is attributable to the business combination of T-Mobile US and Sprint, and the modification of leases signed with American Tower in the United States. Key investments in spectrum licenses also had an increasing effect.

The trends in the industry, in particular on the European telecommunications markets, remain challenging due to competitive pressure and strict regulatory requirements. In order to succeed in the future, we continue to invest heavily in the key to our success: our network infrastructure. In 2020, we made global investments (before spectrum) of EUR 17.0 billion, with a focus on the parallel build-out of broadband and mobile infrastructure (optical fiber and 5G). Including spectrum payments, this figure was EUR 18.7 billion in the reporting year. Despite this high level of investment, we are still a solid investment-grade company with access to the international capital markets. Our free cash flow AL (before dividend payments and spectrum investment) came in at EUR 6.3 billion.

There is a sustainable dividend policy for our shareholders, which is subject to approval by the relevant bodies and the fulfillment of other legal requirements. For the 2020 financial year, we will propose a dividend of EUR 0.60 for each dividend-bearing share. Starting from the 2021 financial year, the dividend is to continue to reflect relative growth in earnings per share with a lower limit fixed at EUR 0.60 per dividend-bearing share. This year, the dividend will once again be paid out without any deduction of capital gains tax, and we expect this to be also the case in the years to come.

The T-Share closed the year 2020 up 2.6 %. Deutsche Telekom AG’s share price development outpaced that of the European telecommunications sector (Dow Jones STOXX® Europe 600 Telecommunications) in 2020, which lost 12.7 % by the end of the year.

Although the past financial year was a successful one, that does not mean that next year will be automatically develop in the same way. The challenges that lie ahead in 2021 are great: In the United States, an important spectrum auction ended on January 15, 2021, but the actual spectrum assignment phase is still ongoing. The competitive pressure in Europe remains high. The fiber-optic build-out will be a big topic for us in Germany over the next few years. And at the same time, T-Systems will need to continue developing the business unit in the right direction.

Thanks to our strong starting position, we are reasserting our commitment to the strategic goal of being the leading European telecommunications provider. We want to be a leader in terms of customer experience, technology, and the implementation of advances in productivity for our business customers. Because only when we lead can we grow and meet the demands of our customers and, consequently, our investors in the long term. This growth will be made possible by carefully managing our financial resources and systematically transforming the Company to be simple, digital, and agile in every sense. We play a responsible and active role in society with what we do. We help bridge distances – something that is more important than ever before at the moment. Because we bring people and companies together digitally. This is what we believe in and what we are working to achieve.

Business combination of T-Mobile US and Sprint

Sprint has been included in Deutsche Telekom’s consolidated financial statements as a fully consolidated subsidiary since April 1, 2020. As a result of the change in the composition of the Group during the course of the year, the remeasured assets and liabilities were recognized as of this date, and all income and expenses generated from the date of first-time consolidation are included in Deutsche Telekom’s consolidated income statement. This affects the comparability of the figures for the reporting year with the prior-year figures.

For further information on the business combination of T-Mobile US and Sprint, please refer to the section “Group organization.”

Realignment of the B2B telecommunications business in the Germany operating segment

Our B2B telecommunications business was realigned with effect from July 1, 2020. A new B2B entity was created in the Germany operating segment, and the assets and liabilities previously assigned to the Systems Solutions, Europe, and Group Headquarters & Group Services segments have been transferred to the new entity. Prior-year comparatives in these segments (development of operations, customer development, headcount development, and order entry) were adjusted retrospectively.

For further information on the realignment of the B2B telecommunications business and on the different consummation dates required under company law, please refer to the section “Group organization.”

Coronavirus pandemic

The coronavirus pandemic affected our business in several of our business areas, impacting on revenues and earnings. For example, temporary travel restrictions have resulted in lower roaming and visitor revenues. Our terminal equipment business also felt the squeeze, as did our corporate customer business. At the same time, we recorded an increase in the volume of voice calls, both in mobile communications and in the fixed network. While it is impossible to quantify the long-term impact of the coronavirus pandemic, we see it as both a risk and an opportunity: On the one hand, we expect to see appreciable effects on the economy as a whole, while on the other, the pandemic has given a boost to the digitalization trend.

Comparison of the Group’s expectations with actual figures

In the 2019 Annual Report, we outlined expectations for the 2020 financial year for our financial and non-financial key performance indicators anchored in our management system. The following tables summarize the pro forma figures for 2019, the results expected for the reporting year, and the actual results achieved in 2020. The performance indicators that we also forecast in the 2019 Annual Report and their development are presented in the individual sections.

Comparison of the expected financial key performance indicators with actual figures

		Pro forma figures for 2019[a]	Expectations for 2020	Results in 2020
ROCE	%	5.1	n.a.[b]	4.6
Net revenue	billions of €	80.5	increase	101.0
Profit (loss) from operations (EBIT)	billions of €	9.5	increase	12.8
EBITDA AL (adjusted for special factors)[c]	billions of €	24.7	minimum 35	35.0
Free cash flow AL (before dividend payments and spectrum investment)[c, d]	billions of €	7.0	minimum 6.0	6.3
Cash capex (before spectrum investment)[c]	billions of €	(13.1)	(around 17)	(17.0)
Rating (Standard & Poor's, Fitch)		BBB+	from A- to BBB	BBB, BBB+
Rating (Moody's)		Baa1	from A3 to Baa2	Baa1

[a] The effects of the business combination with Sprint are not included in the pro forma figures for 2019.

[b] The expected ROCE published in the 2019 combined management report (2019 Annual Report) is no longer comparable due to the inclusion of Sprint since April 1, 2020. The figure forecast in 2019 no longer reflects the impact of the business combination with Sprint on NOA and NOPAT. Based on the pro forma figure for 2019 of 5.1 % we expected a "slight decrease" with the Group structure existing at that point in time.

[c] Contrary to the forecasts published in the 2019 combined management report (2019 Annual Report), we adjusted the guidance for 2020 for EBITDA AL (adjusted for special factors), free cash flow AL (before dividend payments and spectrum investment), and cash capex (before spectrum investment) during the course of the year (Interim Group Reports as of June 30, 2020 and September 30, 2020).

[d] Before interest payments for zero-coupon bonds and before termination of forward-payer swaps at T-Mobile US.

Comparison of the expected non-financial key performance indicators with actual figures

		Pro forma figures for 2019[a]	Expectations for 2020	Results in 2020
Customer satisfaction (TRI*M index)		67.3	slight increase	72.2
Employee satisfaction (commitment index)[b]		4.0	stable trend	4.0
Fixed-network and mobile customers				
Germany				
Mobile customers	millions	46.2	increase	48.5
Fixed-network lines	millions	17.8	slight decrease	17.6
Retail broadband lines	millions	13.7	slight increase	14.1
United States				
Postpaid customers	millions	47.0	increase	81.4
Prepaid customers	millions	20.9	slight increase	20.7
Europe				
Mobile customers	millions	46.2	stable trend	45.6
Fixed-network lines	millions	9.1	stable trend	9.1
Broadband customers	millions	6.7	increase	7.0
Systems Solutions				
Order entry[c]	billions of €	4.7	stable trend	4.6

[a] The effects of the business combination with Sprint are not included in the pro forma figures for 2019.

[b] Commitment index as per the 2019 employee survey.

[c] Pro forma figure for 2019 adjusted retrospectively during the year (Interim Group Report as of September 30, 2020) in connection with the realignment of the B2B telecommunications business.

We look back on a successful financial year. The business combination of T-Mobile US and Sprint in the United States is a major success. Our performance in 2019 was once again dominated by substantial growth in revenue and adjusted EBITDA AL. At EUR 101.0 billion, revenue increased by much more than expected. This is partly due to the fact that the effects of the transaction with Sprint had not been included in the guidance for 2020. But even assuming a comparable composition of the Group and excluding exchange rate effects, we recorded an increase of EUR 2.9 billion or 3.0 %. Adjusted EBITDA AL also followed this trend, increasing substantially year-on-year to EUR 35.0 billion. EBIT also echoed this clear growth trend, up by EUR 3.3 billion. At EUR 6.3 billion, we exceeded the guidance for free cash flow AL (before dividend and spectrum investment), which we had revised upwards in the course of the year to EUR 6.0 billion. At EUR 17.0 billion, cash capex (before spectrum investment) exactly matched our most recent guidance figure. ROCE (return on capital employed) decreased by 0.5 percentage points in the reporting period to 4.6 %. This was mainly down to the assets acquired from Sprint, in particular spectrum licenses.

We are also well on track with our non-financial key performance indicators. In addition to substitution effects, this is thanks to our good coronavirus crisis management: the focus on expanding digital sales channels was one factor contributing to a near normalization of customer development. As such, the customer numbers in our Germany and Europe operating segment developed in line with expectations. In the United States operating segment, we again recorded strong postpaid customer additions: including the customers acquired in connection with the Sprint transaction and the adjustment of the customer base carried out in the course of the year, the number of customers increased by 5.5 million. By contrast, the development in the number of prepaid customers fell short of our original expectation on account of the specific adjustments made to the customer base during the year in order to harmonize the customer definition in connection with the Sprint transaction. Order entry in our Systems Solutions operating segment initially fell short of our expectations earlier in the year. The effects of the coronavirus pandemic resulted in delays in current projects and the postponement of deal closures, especially with our automotive customers in the digital solutions area. The resulting mid-year lull in order entry, however, was almost completely offset by the year-end with a number of major deals signed in other areas.

At the end of the reporting year, customer satisfaction came in at 72.2 points compared with an adjusted baseline figure of 67.9 points at the start of the year. Following changes to the revenue shares contributed by each country and in order to create an equivalent basis for comparing the Group's expectations with actual figures, we recalculated the baseline figure for 2020 on the basis of the new structures these changes entailed. The new baseline thus diverges from the figure of 67.3 reported as of December 31, 2019. The Germany, Europe, and Systems Solutions operating segments contributed to the positive development with improvements in customer loyalty. Our goal for the coming years is to further improve customer satisfaction in all areas.

For further information on the trends in our main financial and non-financial key performance indicators, please refer to the relevant passages in this section as well as in the section "Development of business in the operating segments."

Results of operations of the Group

Net revenue

In 2020, we generated net revenue of EUR 101.0 billion, which was 25.4 % or EUR 20.5 billion up on the prior-year level. In organic terms, i.e., assuming a comparable composition of the Group in the prior year and excluding exchange rate effects, revenue developed positively, with growth of EUR 2.9 billion or 3.0 %. For a comparison on an organic basis, net revenue in the 2019 financial year was raised by EUR 19.2 billion to account for effects of changes in the composition of the Group – primarily from the acquisition of Sprint in the United States operating segment – and net exchange rate effects of EUR -1.6 billion were taken into account.

Our United States operating segment in particular contributed to the positive revenue trend with an increase of 51.4 %. Adjusted for the acquisition of Sprint and exchange rate effects, revenue was up 5.0 % against the prior-year level. Revenue in our home market of Germany was slightly up on the prior-year level, increasing by 0.2 %. This slight increase was mainly due to the positive trend in our fixed-network business on the back of revenue growth in the broadband business and in variable call charges. This offset the decline in revenue in the mobile business. The coronavirus pandemic had a negative impact on roaming, visitor, and terminal equipment revenues, and resulted in delays or postponements to current orders in B2B telecommunications business. In our Europe operating segment, revenue decreased by 2.2 %, mainly due to exchange rate effects. In organic terms, revenue remained stable at the prior-year level, despite the deterioration in economic conditions due to the coronavirus pandemic. The fixed-network business performed well, recording increases in broadband and TV revenues. Revenues from mobile business decreased slightly, primarily driven by declines in roaming and visitor revenues as a result of travel restrictions, some of which are still in place or have been reimposed, and in low-margin terminal equipment business. These negative effects have been partially offset by increases in higher-margin service revenues. Total revenue in our Systems Solutions operating segment decreased by 5.6 % year-on-year, reflecting the coronavirus-induced decline of the IT market in Western Europe. The upward revenue trend in our growth areas public cloud and security was not sufficient to offset the declines in traditional IT and project business. The development of our growth area digital solutions was particularly affected by the impact of the coronavirus pandemic on the automotive industry. Total revenue in our Group Development operating segment increased by 3.1 % year-on-year, thanks to the operational growth of our two subsidiaries, T-Mobile Netherlands and DFMG.

For further information on revenue development in our segments, please refer to the section "Development of business in the operating segments."

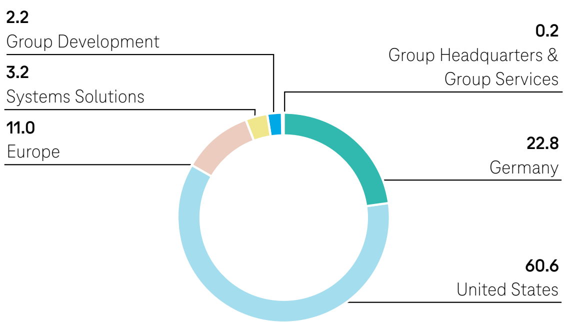
Contribution of the segments to net revenue

millions of €

	2020	2019	Change	Change %	2018
Net revenue	**100,999**	**80,531**	**20,468**	**25.4**	**75,656**
Germany	23,779	23,730	49	0.2	23,662
United States	61,208	40,420	20,788	51.4	36,522
Europe	11,335	11,587	(252)	(2.2)	11,312
Systems Solutions	4,178	4,424	(246)	(5.6)	4,474
Group Development	2,883	2,797	86	3.1	2,185
Group Headquarters & Group Services	2,556	2,627	(71)	(2.7)	2,735
Intersegment revenue	(4,941)	(5,055)	114	2.3	(5,234)

Contribution of the segments to net revenue[a]

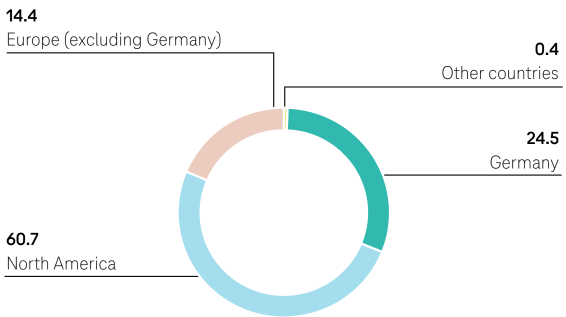
%



[a] For further information, please refer to Note 36 "Segment reporting" in the notes to the consolidated financial statements.

Breakdown of revenue by region

%



At 60.6 %, our United States operating segment provided by far the largest contribution to net revenue of the Group and in particular thanks to the acquisition of Sprint was up 10.4 percentage points above the level in the prior year. In this connection, the proportion of net revenue generated internationally also increased significantly from 69.5 % to 75.5 %.

Adjusted EBITDA AL, EBITDA AL

Adjusted EBITDA AL increased year-on-year by EUR 10.3 billion or 41.6 % to EUR 35.0 billion in 2020. But even in organic terms, adjusted EBITDA AL increased by EUR 2.6 billion or 7.9 %. For a comparison on an organic basis, adjusted EBITDA AL in the 2019 financial year was raised by EUR 8.2 billion to account for effects of changes in the composition of the Group and net exchange rate effects of EUR -0.5 billion were taken into account.

All segments, with the exception of the Systems Solutions operating segment, made a positive contribution to this development: Adjusted EBITDA AL of our United States operating segment increased significantly, particularly on the back of higher service and terminal equipment revenues in connection with the acquisition of Sprint. In organic terms, adjusted EBITDA AL grew by 10.8 % year-on-year. These increases were offset by higher operating expenses, primarily in connection with the acquisition of Sprint. Our Germany operating segment contributed to this result thanks to a slightly positive revenue trend, and improved cost efficiency with 1.6 % higher adjusted EBITDA AL. Adjusted EBITDA AL in our Europe operating segment remained stable. In organic terms, it increased by as much as 2.1 %. The main factor in this trend was savings in indirect costs. In our Systems Solutions operating segment, adjusted EBITDA AL declined by 6.0 %; excluding negative exchange rate effects the decline would have been 1.8 %. The decline was mainly caused by the decrease in earnings in traditional IT and project business, partly due to the effects of the coronavirus pandemic. The increase of 6.6 % in adjusted EBITDA AL in our Group Development operating segment was driven by revenue growth, synergies from the acquisition of Tele2 Netherlands, and efficient management of costs at T-Mobile Netherlands. The GD Towers business also continued to post consistent growth on the back of rising volumes.

Contribution of the segments to adjusted Group EBITDA AL

	2020 millions of €	Proportion of adjusted Group EBITDA AL %	2019 millions of €	Proportion of adjusted Group EBITDA AL %	Change millions of €	Change %	2018 millions of €
EBITDA AL (adjusted for special factors) in the Group[a]	**35,017**	**100.0**	**24,731**	**100.0**	**10,286**	**41.6**	**23,074**
Germany	9,231	26.4	9,083	36.7	148	1.6	8,829
United States	20,997	60.0	11,134	45.0	9,863	88.6	10,084
Europe	3,910	11.2	3,910	15.8	0	0.0	3,703
Systems Solutions	235	0.7	250	1.0	(15)	(6.0)	209
Group Development	1,101	3.1	1,033	4.2	68	6.6	892
Group Headquarters & Group Services	(429)	(1.2)	(650)	(2.6)	221	34.0	(599)
Reconciliation	(28)	(0.1)	(29)	(0.1)	1	3.4	(44)

[a] Comparatives for 2018 were calculated on a pro forma basis for the key performance indicators redefined as of January 1, 2019 following the introduction of the IFRS 16 accounting standard.

EBITDA AL increased by EUR 10.0 billion or 43.4 % year-on-year to EUR 33.2 billion, with special factors changing from EUR -1.6 billion to EUR -1.8 billion. Net expenses incurred in connection with staff-related measures were recorded as special factors and decreased by EUR 0.4 billion year-on-year to EUR -1.3 billion. In addition, expenses of EUR 1.7 billion were recorded as special factors under gains/losses from deconsolidations, disposals, and acquisitions. These expenses were incurred in connection with the approval process for the business combination of T-Mobile US and Sprint, with acquisition and integration costs, with restructuring costs to realize cost efficiencies from the business combination, and with a reduction in the useful life of leased network technology for cell sites. EUR 0.2 billion related to the derecognition of a billing software for postpaid customers, which was still in development, in the United States operating segment. A transaction fee of EUR 0.3 billion received from SoftBank in return for support in the immediate sale by SoftBank of T-Mobile US shares had an offsetting effect. In the prior year, expenses of EUR 0.5 billion had been recorded as special factors in connection with gains/losses from deconsolidations, disposals, and acquisitions. Reversals of impairment losses recorded as special factors of EUR 1.6 billion resulted from the partial reversal of impairment losses on spectrum licenses at T-Mobile US. Furthermore, the agreed sale of the Romanian fixed-network business resulted in a reversal of impairment losses on property, plant and equipment of EUR 50 million recorded in the course of the year. Other special factors affecting EBITDA AL amounted to EUR -0.5 billion and mainly relate to expenses incurred in the United States operating segment in the first half of 2020 in connection with the coronavirus pandemic.

For further information on the development of (adjusted) EBITDA AL in the segments, please refer to the section “Development of business in the operating segments.”

A reconciliation of the definition of EBITDA with the “after leases” indicator (EBITDA AL) can be found in the following table:

millions of €	2020	2019
EBITDA	38,633	27,120
Depreciation of right-of-use assets[a]	(4,530)	(3,181)
Interest expenses on recognized lease liabilities[a]	(925)	(796)
EBITDA AL	**33,178**	**23,143**
Special factors affecting EBITDA AL	(1,839)	(1,589)
EBITDA AL (adjusted for special factors)	**35,017**	**24,731**

[a] Excluding finance leases at T-Mobile US.

EBIT

Group EBIT increased from EUR 9.5 billion to EUR 12.8 billion, up EUR 3.3 billion or 35.4 % against the prior year. This increase is due in particular to the effects described under adjusted EBITDA AL and EBITDA AL. Depreciation and amortization stood at EUR 25.0 billion overall, up EUR 7.8 billion on the prior year. This increase is mainly attributable to Sprint, which has been included since April 1, 2020. Impairment losses on non-current assets reduced EBIT by EUR 0.8 billion. A total of EUR 0.5 billion of this related to the Systems Solutions operating segment and the Group Headquarters & Group Services segment, EUR 0.2 billion to the Europe operating segment, and EUR 0.1 billion to the United States operating segment.

For further information on depreciation, amortization and impairment losses, please refer to Note 27 “Depreciation, amortization and impairment losses” in the notes to the consolidated financial statements.

Profit before income taxes

Profit before income taxes increased by EUR 1.4 billion, mainly for the aforementioned reasons. Our loss from financial activities increased by EUR 1.9 billion to EUR 4.1 billion. This increase is primarily due to a EUR 1.9 billion increase in finance costs to EUR 4.2 billion, mainly due to the financial liabilities recognized and the restructuring begun in connection with the acquisition of Sprint, and the related increase in financing, including the handling charges incurred for a briefly utilized bridge loan facility. Other financial income/expense was unchanged at EUR 0.1 billion. This development was attributable to the year-on-year increase in gains from financial instruments, due, among other factors, to the subsequent measurement of the stock options to buy shares in T-Mobile US received from SoftBank in June 2020. Lower measurement effects from embedded derivatives at T-Mobile US compared with the prior year and higher interest expense from the measurement of provisions and liabilities had an offsetting effect.

Net profit, adjusted net profit

Net profit increased year-on-year by EUR 0.3 billion to EUR 4.2 billion. Tax expense came to EUR 1.9 billion compared with EUR 2.0 billion in the prior year. Profit attributable to non-controlling interests increased by EUR 1.2 billion to EUR 2.6 billion, mainly in our United States operating segment. This increase related to the positive development in operations and the decrease in T-Mobile US' capital share as a result of the Sprint transaction. Excluding special factors, which had a negative overall effect of EUR 1.6 billion on net profit, adjusted net profit amounted to EUR 5.7 billion, up against the level in the prior year of EUR 4.9 billion.

The following table presents a reconciliation of net profit to net profit adjusted for special factors:

millions of €	2020	2019	Change	Change %	2018
Net profit (loss)	**4,158**	**3,867**	**291**	**7.5**	**2,166**
Special factors affecting EBITDA AL	(1,839)	(1,589)	(250)	(15.7)	(1,497)
Staff-related measures	(1,268)	(913)	(355)	(38.9)	(1,159)
Non-staff-related restructuring	(32)	(81)	49	60.5	(109)
Effects of deconsolidations, disposals and acquisitions	(1,655)	(462)	(1,193)	n.a.	(223)
Reversals of impairment losses	1,655	0	1,655	n.a.	0
Other	(539)	(132)	(407)	n.a.	(6)
Special factors affecting net profit	283	510	(227)	(44.5)	(882)
Impairment losses	(656)	(368)	(288)	(78.3)	(707)
Profit (loss) from financial activities	(25)	(4)	(21)	n.a.	(757)
Income taxes	730	461	269	58.4	401
Non-controlling interests	234	421	(187)	(44.4)	181
Special factors	**(1,557)**	**(1,081)**	**(476)**	**(44.0)**	**(2,379)**
Net profit (loss) (adjusted for special factors)	**5,715**	**4,948**	**767**	**15.5**	**4,545**

Earnings per share, adjusted earnings per share

Earnings per share is calculated as net profit divided by the adjusted weighted average number of ordinary shares outstanding, which totaled 4,743 million as of December 31, 2020. This resulted in adjusted earnings per share of EUR 0.88, compared with EUR 0.82 in the prior year. Adjusted earnings per share, adjusted for special factors affecting net profit, amounted to EUR 1.20 compared with EUR 1.04 as of December 31, 2019.

Special factors

The following table presents a reconciliation of EBITDA AL, EBIT, and net profit/loss to the respective figures adjusted for special factors.

millions of €

	EBITDA AL 2020	EBIT 2020	EBITDA AL 2019	EBIT 2019	EBITDA AL 2018	EBIT 2018
EBITDA AL/EBIT	**33,178**	**12,804**	**23,143**	**9,457**	**21,577**	**8,001**
Germany	**(751)**	**(751)**	**(453)**	**(453)**	**(628)**	**(628)**
Staff-related measures	(675)	(675)	(418)	(418)	(590)	(590)
Non-staff-related restructuring	(18)	(18)	(38)	(38)	(46)	(46)
Effects of deconsolidations, disposals and acquisitions	(18)	(18)	0	0	0	0
Impairment losses	0	0	0	0	0	0
Other	(40)	(40)	4	4	8	8
United States	**(370)**	**(370)**	**(544)**	**(544)**	**(160)**	**(160)**
Staff-related measures	(32)	(32)	(17)	(17)	(15)	(15)
Non-staff-related restructuring	0	0	0	0	0	0
Effects of deconsolidations, disposals and acquisitions	(1,522)	(1,522)	(527)	(527)	(145)	(145)
Impairment losses	0	0	0	0	0	0
Reversals of impairment losses	1,604	1,604	0	0	0	0
Other	(420)	(420)	0	0	0	0
Europe	**(188)**	**(374)**	**(141)**	**(461)**	**(122)**	**(797)**
Staff-related measures	(181)	(181)	(111)	(111)	(90)	(90)
Non-staff-related restructuring	0	0	0	0	0	0
Effects of deconsolidations, disposals and acquisitions	(6)	(6)	(23)	(23)	(14)	(14)
Impairment losses	0	(186)	0	(320)	0	(674)
Reversals of impairment losses	50	50	0	0	0	0
Other	(51)	(51)	(8)	(8)	(19)	(19)
Systems Solutions	**(210)**	**(636)**	**(310)**	**(338)**	**(240)**	**(296)**
Staff-related measures	(168)	(168)	(154)	(154)	(174)	(174)
Non-staff-related restructuring	(3)	(3)	(4)	(4)	(4)	(4)
Effects of deconsolidations, disposals and acquisitions	0	0	(11)	(11)	0	0
Impairment losses	0	(426)	0	(27)	0	(56)
Other	(39)	(39)	(141)	(141)	(63)	(63)
Group Development	**(43)**	**(43)**	**97**	**97**	**(27)**	**(27)**
Staff-related measures	(11)	(11)	(19)	(19)	(6)	(6)
Non-staff-related restructuring	0	0	(1)	(1)	0	0
Effects of deconsolidations, disposals and acquisitions	(30)	(30)	111	111	(21)	(21)
Impairment losses	0	0	0	0	0	0
Other	(2)	(2)	4	4	(1)	(1)
Group Headquarters & Group Services	**(277)**	**(322)**	**(237)**	**(237)**	**(318)**	**(318)**
Staff-related measures	(201)	(201)	(195)	(195)	(284)	(284)
Non-staff-related restructuring	(11)	(11)	(38)	(38)	(59)	(59)
Effects of deconsolidations, disposals and acquisitions	(78)	(78)	(13)	(13)	(44)	(44)
Impairment losses	0	(44)	0	0	0	0
Other	14	14	9	9	69	69
Group	**(1,839)**	**(2,496)**	**(1,589)**	**(1,959)**	**(1,497)**	**(2,204)**
Staff-related measures	(1,268)	(1,268)	(913)	(913)	(1,159)	(1,159)
Non-staff-related restructuring	(32)	(32)	(81)	(81)	(109)	(109)
Effects of deconsolidations, disposals and acquisitions	(1,655)	(1,655)	(462)	(462)	(223)	(223)
Impairment losses	0	(656)	0	(370)	0	(707)
Reversals of impairment losses	1,655	1,655	0	0	0	0
Other	(539)	(539)	(132)	(132)	(6)	(6)

millions of €

	EBITDA AL 2020	EBIT 2020	EBITDA AL 2019	EBIT 2019	EBITDA AL 2018	EBIT 2018
EBITDA AL/EBIT (adjusted for special factors)	**35,017**	**15,300**	**24,731**	**11,416**	**23,074**	**10,204**
Profit (loss) from financial activities (adjusted for special factors)		(4,103)		(2,192)		(2,091)
Profit (loss) before income taxes (adjusted for special factors)		**11,197**		**9,223**		**8,114**
Income taxes (adjusted for special factors)		(2,659)		(2,454)		(2,225)
Profit (loss) (adjusted for special factors)		**8,538**		**6,770**		**5,889**
Profit (loss) (adjusted for special factors) attributable to						
Owners of the parent (net profit (loss)) (adjusted for special factors)		5,715		4,948		4,545
Non-controlling interests (adjusted for special factors)		2,823		1,822		1,344

Net assets of the Group

Condensed consolidated statement of financial position

millions of €

	Dec. 31, 2020	Share of total assets/ liabilities and shareholders' equity %	Change	Dec. 31, 2019	Share of total assets/ liabilities and shareholders' equity %	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2016
Assets								
Cash and cash equivalents	12,939	4.8	7,546	5,393	3.2	3,679	3,312	7,747
Trade receivables	13,523	5.0	2,677	10,846	6.4	9,988	9,723	9,362
Intangible assets	118,066	43.7	49,864	68,202	40.0	64,950	62,865	60,599
Property, plant and equipment	60,975	22.6	11,427	49,548	29.0	50,631	46,878	46,758
Right-of-use assets	30,302	11.2	12,304	17,998	10.5	n.a.	n.a.	n.a.
Current and non-current financial assets	9,640	3.6	2,390	7,250	4.2	4,432	9,045	13,599
Deferred tax assets	7,972	3.0	5,268	2,704	1.6	2,949	4,013	5,210
Non-current assets and disposal groups held for sale	1,113	0.4	1,016	97	0.1	145	161	372
Other assets	10,387	3.8	1,753	8,634	5.1	8,601	5,337	4,838
Total assets	**264,917**	**98.1**	**94,245**	**170,672**	**100.0**	**145,375**	**141,334**	**148,485**
Liabilities and shareholders' equity								
Current and non-current financial liabilities	107,108	39.7	40,759	66,349	38.9	62,275	57,529	64,650
Current and non-current lease liabilities	32,715	12.1	12,880	19,835	11.6	n.a.	n.a.	n.a.
Trade and other payables	9,760	3.6	329	9,431	5.5	10,735	10,971	10,441
Provisions for pensions and other employee benefits	7,684	2.8	1,853	5,831	3.4	5,502	8,375	8,451
Current and non-current other provisions	9,033	3.3	2,370	6,663	3.9	6,435	6,527	6,388
Deferred tax liabilities	17,260	6.4	8,306	8,954	5.2	8,240	6,967	10,007
Liabilities directly associated with non-current assets and disposal groups held for sale	449	0.2	420	29	0.0	36	0	194
Other liabilities	8,358	3.1	1,009	7,349	4.3	8,715	8,495	9,509
Shareholders' equity	72,550	26.9	26,319	46,231	27.1	43,437	42,470	38,845
Total liabilities and shareholders' equity	**264,917**	**98.1**	**94,245**	**170,672**	**100.0**	**145,375**	**141,334**	**148,485**

The IFRS 16 "Leases" accounting standard has been applied since January 1, 2019. Prior-year comparatives were not adjusted. Financial liabilities included finance lease liabilities in accordance with IAS 17 for the last time as of December 31, 2018.

Total assets amounted to EUR 264.9 billion as of December 31, 2020, up by EUR 94.2 billion against December 31, 2019. This significant increase is mainly due to the change in the composition of the Group in connection with the acquisition of Sprint in the United States operating segment. The acquired and remeasured assets and liabilities of Sprint were included in all items of the statement of financial position upon consummation of the transaction on April 1, 2020.

For further information on the business combination of T-Mobile US and Sprint, please refer to the section "Summary of accounting policies – Changes in the composition of the Group and other transactions" in the notes to the consolidated financial statements.

Cash and cash equivalents increased by EUR 7.5 billion year-on-year.

For further information, please refer to Note 35 "Notes to the consolidated statement of cash flows" in the notes to the consolidated financial statements.

On the assets side, **trade receivables** amounted to EUR 13.5 billion, up by EUR 2.7 billion against the 2019 year-end. Receivables increased by EUR 2.9 billion as of April 1, 2020 in connection with the inclusion of Sprint. Exchange rate effects, primarily from the translation from U.S. dollars into euros, reduced the carrying amount. Excluding this effect, receivables in the United States operating segment increased, mainly due to higher receivables from wholesale partners – in particular as a consequence of the sale of Sprint's prepaid business to DISH – and higher receivables under the Equipment Installment Plan – primarily as a result of the market launch of higher-priced devices in the fourth quarter of 2020. In the Germany operating segment, receivables increased as a result of the contractual termination of a revolving factoring agreement for receivables from consumers and business customers. By contrast, receivables in the Europe operating segment decreased, among other factors, on account of the agreed sale of Telekom Romania Communications, which operates the Romanian fixed network business. This entity's receivables were reclassified as of December 31, 2020 to non-current assets and disposal groups held for sale.

The carrying amounts of **intangible assets** and **property, plant and equipment** increased by EUR 61.3 billion overall to EUR 179.0 billion. Effects from changes in the composition of the Group of EUR 73.0 billion in connection with the acquisitions of Sprint and Simpel contributed to this increase, which also includes preliminary goodwill arising from the transactions; EUR 8.7 billion from the Sprint transaction and EUR 0.2 billion from the Simpel transaction. Capital expenditure totaling EUR 22.6 billion, especially to upgrade and build out the network in our United States operating segment, and for the broadband/fiber-optic build-out, the IP transformation, and mobile infrastructure in the Germany and Europe operating segments, also increased the carrying amounts. This also includes, in the United States operating segment, FCC spectrum licenses of EUR 1.1 billion – primarily acquired at a spectrum auction that ended in March 2020 – and in the Group Development and Europe operating segments, spectrum licenses totaling EUR 0.6 billion – mainly in the Netherlands, Hungary, Greece, and Austria. Depreciation and amortization of EUR 20.0 billion, negative exchange rate effects of EUR 13.3 billion, primarily from the translation of U.S. dollars into euros, and disposals of EUR 1.8 billion decreased the carrying amount. The latter included EUR 0.2 billion in the United States for the derecognition of billing software for postpaid customers, which was still in development. In connection with the intention to sell Telekom Romania Communications and T-Mobile Infra, both companies were classified as held for sale as of December 31, 2020. As a result, the carrying amount declined by EUR 0.6 billion overall. Furthermore, the carrying amount of intangible assets and property, plant and equipment was increased by EUR 1.7 million in total as a result of the following reversals of impairment losses and was reduced by EUR 0.7 billion overall by the following impairment losses.

Impairment losses on spectrum licenses previously acquired by T-Mobile US were partially reversed, increasing the carrying amount by EUR 1.6 billion. In part, the reasons leading to the impairment loss recognized in 2012 no longer exist, thus giving rise to the reversal. An initial reversal of the impairment in the amount of EUR 1.7 billion had already been recognized in 2017. The measurement of Sprint's licenses in connection with the purchase price allocation following the business combination of T-Mobile US and Sprint indicated a further increase in the licenses' value.

In the Systems Solutions operating segment, the realignment of the B2B telecommunications business in combination with the effects of the coronavirus pandemic triggered ad hoc impairment testing of assets, which identified a reduction in the business outlook for IT operations. The result was the recognition of a non-cash impairment loss of EUR 0.5 billion on non-current assets of the Systems Solutions cash-generating unit. EUR 426 million of the impairment loss related to the Systems Solutions operating segment. Another EUR 44 million related to software recognized in the Group Headquarters & Group Services segment which is subject to use by the Systems Solutions operating segment and is allocated to the Systems Solutions cash-generating unit for the purposes of impairment testing.

An ad hoc impairment test was also conducted in the Europe operating segment on account of the agreed sale of the Romanian fixed-network business. In this context, the associated loss of the existing MVNO agreements results in the recognition of an impairment loss totaling EUR 160 million on non-current assets of the Romanian mobile business, which will remain within the Group. In the Romanian fixed-network business, the planned sale resulted in a reversal of impairment losses recognized in the past on property, plant and equipment of EUR 50 million.

Right-of-use assets with regard to leases increased by EUR 12.3 billion compared with December 31, 2019 to EUR 30.3 billion. In connection with the business combination with Sprint, right-of-use assets of EUR 6.3 billion were recognized. Another EUR 9.4 billion came from the agreement concerning the lease and use of cell sites concluded between T-Mobile US and American Tower in September 2020. This was a modification to existing leases with American Tower. The agreement gives T-Mobile US greater flexibility in the course of merging the mobile networks of T-Mobile US and Sprint and of the 5G network build-out. By contrast, depreciation of EUR 5.1 billion, negative exchange rate effects of EUR 2.1 billion, disposals of EUR 0.4 billion, and reclassifications to assets and disposal groups held for sale of EUR 0.1 billion decreased the carrying amount.

Current and non-current **financial assets** increased by EUR 2.4 billion to EUR 9.6 billion. The acquisition of Sprint resulted in an increase of EUR 0.4 billion. Derivatives without a hedging relationship increased by EUR 1.1 billion, mainly in connection with the subsequent measurement of the stock options to buy shares in T-Mobile US received from SoftBank in June 2020 and with new additions of embedded derivatives and embedded derivatives assumed in connection with the acquisition of Sprint at T-Mobile US, including their subsequent measurement. Measurement effects from the derecognition of a derivative in connection with the repayment of a term loan raised during the course of the year had an offsetting effect. Derivatives with a hedging relationship increased by EUR 0.6 billion, primarily due to the increase in positive fair values from interest rate swaps in fair value hedges. In addition, other financial assets increased by EUR 0.3 billion in connection with grants receivable from funding projects for the broadband build-out in Germany.

The increase in **non-current assets and disposal groups held for sale** by EUR 1.0 billion to EUR 1.1 billion was mainly the result of the reclassified assets of T-Mobile Infra, which is allocated to the Group Development operating segment, and Telekom Romania Communications, which operates the Romanian fixed-network business in the Europe operating segment. Both these companies were classified as held for sale as of December 31, 2020 on account of the intention to sell them.

The increase of EUR 1.8 billion in **other assets** to EUR 10.4 billion was also mainly due to the inclusion of Sprint.

On the liabilities and shareholders' equity side, current and non-current **financial liabilities** increased by EUR 40.8 billion compared with the end of 2019 to a total of EUR 107.1 billion. EUR 39.1 billion of this resulted from the transfer of liabilities from Sprint. Immediately after the transaction, liabilities of the former Sprint totaling USD 9.8 billion (EUR 8.9 billion) were repaid. Since then, a number of refinancing measures have been implemented in connection with the business combination, some of which have already been reversed. On April 1, 2020, for example, T-Mobile US raised a new term loan of USD 4 billion (EUR 3.7 billion), which was redeemed prematurely on October 9, 2020. Senior secured notes, issued on April 9, 2020 for a total of USD 19 billion (EUR 17.3 billion) were used to repay a briefly utilized bridge loan facility. In addition, T-Mobile US issued senior secured notes with a volume of USD 4.0 billion (EUR 3.6 billion) on June 24, 2020, USD 4 billion (EUR 3.4 billion) on October 6, 2020, and USD 4.75 billion (EUR 4.0 billion) on October 28, 2020. In the course of the third quarter of 2020, T-Mobile US repaid a number of bonds with a total value of EUR 3.6 billion, some of them prematurely. Furthermore, bonds with a total volume of EUR 1.8 billion when translated into euros were issued in the Group in various currencies in the course of the year. Euro and U.S. Dollar bonds with a total volume of EUR 6.3 billion when translated into euros were repaid. A Deutsche Bundespost treasury note (zero-coupon bond) issued in the past with a carrying amount of EUR 1.4 billion fell due on December 31, 2019 and was repaid on that date by a bank using its own funds. The payment by Deutsche Telekom AG to this bank was made on the following bank working day of January 2, 2020. Derivative financial liabilities decreased by EUR 0.8 billion in total, mainly due to the decline of EUR 1.0 billion from the premature termination of forward-payer swaps by T-Mobile US at the start of April 2020. The secured term loan was originated on April 1, 2020. Exchange rate effects, in particular from the translation of U.S. dollars into euros, lowered the financial liabilities by EUR 6.9 billion.

For further information on the development of financial liabilities, please refer to Note 13 "Financial liabilities and lease liabilities" in the notes to the consolidated financial statements.

Current and non-current **lease liabilities** increased by EUR 12.9 billion to EUR 32.7 billion compared with December 31, 2019. EUR 6.8 billion of this increase was attributable to the inclusion of Sprint. In connection with the modification of existing leases that T-Mobile US agreed with American Tower, lease liabilities increased by EUR 9.4 billion. Exchange rate effects, in particular from the translation of U.S. dollars into euros, lowered the carrying amount by EUR 2.3 billion.

Trade and other payables increased by EUR 0.3 billion to EUR 9.8 billion. The inclusion of Sprint increased the carrying amount by EUR 2.9 billion. This was offset in particular by lower liabilities to terminal equipment vendors and declines in liabilities in connection with the acquisition of assets in the United States operating segment. Liabilities also decreased in the other operating segments. Exchange rate effects, especially from the translation from U.S. dollars into euros, also decreased the carrying amount.

Provisions for pensions and other employee benefits increased by EUR 1.9 billion compared with December 31, 2019 to EUR 7.7 billion, mainly due to a decline in the prices of plan assets, interest rate adjustments, and the change in the composition of the Group in connection with the acquisition of Sprint.

Current and non-current **other provisions** increased by EUR 2.4 billion compared with December 31, 2019 to EUR 9.0 billion. EUR 1.9 billion of this related to the business combination of T-Mobile US and Sprint. Furthermore, the provisions recognized for the Civil Service Health Insurance Fund (Postbeamtenkrankenkasse – PBeaKK) increased by EUR 0.5 billion, which is attributable to the subsequent measurement of the present value determined using actuarial principles (interest effect) and other additions.

The increase in **liabilities directly associated with non-current assets and disposal groups held for sale** by EUR 0.4 billion to EUR 0.4 billion mainly related to the aforementioned reclassified liabilities of T-Mobile Infra and Telekom Romania Communications. Both these companies were classified as held for sale as of December 31, 2020 on account of the intention to sell them.

Other liabilities increased by EUR 1.0 billion compared with December 31, 2019 to EUR 8.4 billion, due in particular to higher current and non-current other liabilities. The inclusion of Sprint increased other liabilities by EUR 0.7 billion. In addition, other liabilities increased by EUR 0.2 billion due to existing build-out obligations in connection with grants receivable from funding projects for the broadband build-out in the Germany operating segment. The carrying amounts of contract liabilities increased in particular as a result of the inclusion of Sprint.

Shareholders' equity increased from EUR 46.2 billion as of December 31, 2019 to EUR 72.6 billion. The business combination of T-Mobile US and Sprint consummated on April 1, 2020 resulted in an increase in shareholders' equity of EUR 30.6 billion as of the date of first-time consolidation. Profit of EUR 6.7 billion and capital increases from share-based payments of EUR 0.5 billion also increased the carrying amount. Shareholders' equity was reduced in connection with dividend payments for the 2019 financial year to Deutsche Telekom AG shareholders in the amount of EUR 2.8 billion and to other shareholders of subsidiaries in the amount of EUR 0.2 billion. Other comprehensive income also reduced shareholders' equity by EUR 8.5 billion. The main factors in this negative other comprehensive income were the currency translation effects recognized directly in equity (EUR 6.6 billion), the remeasurement of defined benefit plans (EUR 1.4 billion), and losses from hedging instruments, mainly from forward-payer swaps concluded for borrowings at T-Mobile US, which were terminated prematurely in April 2020 and for which the cumulative changes in value must be reversed over the terms of the loans (EUR 1.0 billion). By contrast, income taxes relating to components of other comprehensive income of EUR 0.4 billion had a positive impact on other comprehensive income.

For further information, please refer to Note 19 "Shareholders' equity" in the notes to the consolidated financial statements.

For further information on the business combination of T-Mobile US and Sprint and the acquisition of Simpel, please refer to the section "Summary of accounting policies – Changes in the composition of the Group and other transactions" in the notes to the consolidated financial statements.

Financial position of the Group and profitability

Finance management

Our finance management ensures our Group's ongoing solvency and hence its financial equilibrium. The fundamentals of Deutsche Telekom's finance policy are established each year by the Board of Management and overseen by the Supervisory Board. Group Treasury is responsible for implementing the finance policy and for ongoing risk management. In order to ensure we have scope for financing, we continuously monitor the development of net debt, Deutsche Telekom AG's rating, financial flexibility, and free cash flow AL.

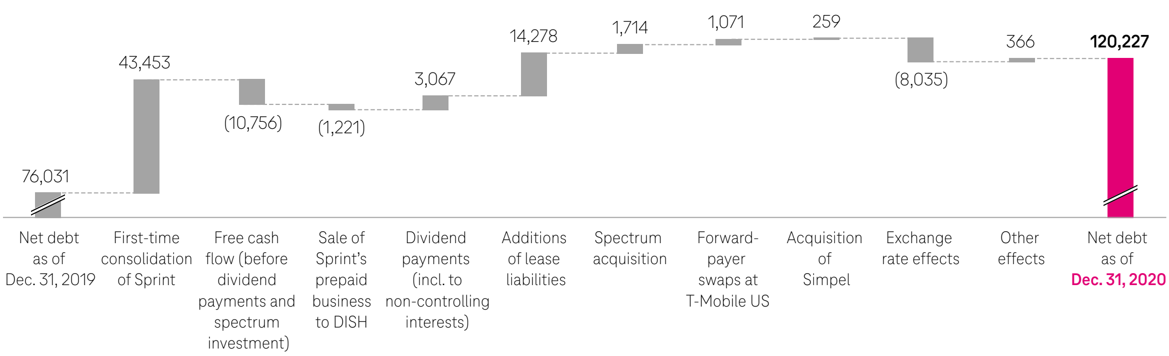
Calculation of net debt

millions of €

	Dec. 31, 2020	Dec. 31, 2019	Change	Change %
Bonds and other securitized liabilities	87,702	51,644	36,058	69.8
Liabilities to banks	5,257	6,516	(1,259)	(19.3)
Other financial liabilities	14,149	8,189	5,960	72.8
Lease liabilities	32,715	19,835	12,880	64.9
Financial liabilities and lease liabilities	**139,823**	**86,184**	**53,639**	**62.2**
Accrued interest	(1,035)	(748)	(287)	(38.4)
Other	(703)	(739)	36	4.9
Gross debt	**138,085**	**84,697**	**53,388**	**63.0**
Cash and cash equivalents	12,939	5,393	7,546	n.a.
Derivative financial assets	4,038	2,333	1,705	73.1
Other financial assets	881	940	(59)	(6.3)
Net debt	**120,227**	**76,031**	**44,196**	**58.1**

Changes in net debt

millions of €



Other effects of EUR 0.4 billion include, among other factors, recognition of liabilities for the acquisition of media broadcasting rights, financing options under which the payments for trade payables become due at a later point in time by involving banks in the process, and offsetting effects from the measurement of embedded derivatives at T-Mobile US.

Other financing options

Off-balance-sheet financial instruments mainly relate to the sale of receivables by means of factoring. Total receivables sold as of December 31, 2020 amounted to EUR 3.1 billion (December 31, 2019: EUR 4.2 billion). This mainly relates to factoring agreements in the United States and Germany operating segments. The year-on-year decline was mainly attributable to the contractual termination of a revolving factoring agreement in the Germany operating segment. The agreements are used in particular for active receivables management.

Furthermore, in the reporting year, we chose financing options totaling EUR 0.2 billion (2019: EUR 0.7 billion) which extended the period of payment for trade payables from operating and investing activities by involving banks in the process and which upon payment are shown under cash flows used in/from financing activities. As a result, we show these payables under financial liabilities in the statement of financial position.

The rating of Deutsche Telekom AG

	Standard & Poor's	Moody's	Fitch
Long-term rating / outlook			
Dec. 31, 2016	BBB+ / stable	Baa1 / stable	BBB+ / stable
Dec. 31, 2017	BBB+ / stable	Baa1 / stable	BBB+ / stable
Dec. 31, 2018	BBB+ / CreditWatch negative	Baa1 / negative	BBB+ / stable
Dec. 31, 2019	BBB+ / CreditWatch negative	Baa1 / negative	BBB+ / stable
Dec. 31, 2020	**BBB / stable**	**Baa1 / negative**	**BBB+ / stable**
Short-term rating	**A-2**	**P-2**	**F2**

As announced in 2018, rating agency Standard & Poor's downgraded Deutsche Telekom AG's rating from BBB+ to BBB with a stable outlook on completion of the business combination of T-Mobile US and Sprint. We are therefore still a solid investment-grade company with access to the international capital markets.

Financial flexibility

		2020	2019	2018	2017	2016
Relative debt[a] Net debt / EBITDA (adjusted for special factors)		**2.78x**	2.65x	2.4x	2.3x	2.3x
Equity ratio	%	**27.4**	27.1	29.9	30.0	26.2

[a] Relative debt is calculated on a quarterly basis and the calculation of the figure for 2020 includes as an input for the first quarter of 2020 historic pro forma figures for Sprint, which was included in the United States operating segment.

To ensure financial flexibility, we primarily use the KPI "relative debt." This is a core component of our finance strategy and an important performance indicator for investors, analysts, and rating agencies.

Calculation of free cash flow AL

millions of €

	2020	2019	2018
Net cash from operating activities	**23,743**	**23,074**	**17,948**
Interest payments for zero-coupon bonds	1,600	0	0
Termination of forward-payer swaps at T-Mobile US	2,158	0	0
Net cash from operating activities[a]	**27,501**	**23,074**	**17,948**
Cash capex	(18,694)	(14,357)	(12,492)
Spectrum investment	1,714	1,239	269
Cash capex (before spectrum investment)	**(16,980)**	**(13,118)**	**(12,223)**
Proceeds from the disposal of intangible assets (excluding goodwill) and property, plant and equipment	236	176	525
Free cash flow (before dividend payments and spectrum investment)[a]	**10,756**	**10,133**	**6,250**
Principal portion of repayment of lease liabilities[b]	(4,468)	(3,120)	(199)
Free cash flow AL (before dividend payments and spectrum investment)[a, c]	**6,288**	**7,013**	**6,051**

[a] Before interest payments for zero-coupon bonds and before termination of forward-payer swaps at T-Mobile US.

[b] Excluding finance leases at T-Mobile US.

[c] Comparatives for 2018 were calculated on a pro forma basis for the key performance indicators redefined as of January 1, 2019 following the introduction of the IFRS 16 accounting standard.

Free cash flow AL (before dividend payments and spectrum investment) decreased by EUR 0.7 billion year-on-year to EUR 6.3 billion. The following effects impacted on this development:

Excluding interest payments for zero-coupon bonds and the premature termination of forward-payer swaps concluded for borrowings at T-Mobile US, **net cash from operating activities** increased by EUR 4.4 billion. The sustained strong performance of the operating segments, especially the United States, including Sprint, had an increasing effect on net cash from operating activities. Higher (net) interest payments, which were up by EUR 2.1 billion in total, mainly as a result of the financial liabilities recognized and the restructuring begun in connection with the acquisition of Sprint, and the related increase in financing, including the handling charges incurred for a briefly utilized bridge loan facility, had a negative effect. Income tax payments decreased by EUR 0.1 billion compared with the prior year. Factoring agreements of EUR 0.8 billion had a negative impact on net cash from operating activities in the reporting year, mainly as a result of the contractual termination of a revolving factoring agreement in the Germany operating segment. In the prior year, factoring agreements had had negative effects of EUR 0.3 billion.

Cash capex (before spectrum investment) increased by EUR 3.9 billion to EUR 17.0 billion, largely on account of the inclusion of Sprint and the ongoing 5G network build-out in the United States. Cash capex in the Germany operating segment decreased slightly. Capital expenditure in the Germany operating segment totaled around EUR 4.2 billion in 2020, in particular for the build-out of the 5G and fiber-optic networks. In the Europe operating segment, cash capex stood at EUR 1.8 billion, which was slightly up on the prior year. Here, we also continue to invest in the provision of broadband and fiber-optic technology and in 5G as part of our integrated network strategy.

The increase in repayments of lease liabilities was due in particular to payments for leases in the United States operating segment, partly as a result of the inclusion of Sprint, and partly as a result of payments for new leases concluded in 2020 for network technology and cell sites in connection with the 5G network build-out.

For further information on the statement of cash flows, please refer to Note 35 "Notes to the consolidated statement of cash flows" in the notes to the consolidated financial statements.

Profitability

millions of €

		2020	2019	2018
ROCE	%	**4.6**	**5.1**	**4.7**
Profit (loss) from operations (EBIT)		12,804	9,457	8,001
Share of profit (loss) of associates and joint ventures accounted for using the equity method		(12)	87	(529)
Interest component of unrecognized rental and lease obligations[a]		n.a.	n.a.	630
Other NOP adjustments		n.a.	n.a.	1
Net operating profit (NOP)		**12,792**	**9,544**	**8,103**
Tax (imputed tax rate 2020: 27.8 %; 2019: 27.8 %; 2018: 27.8 %)		(3,556)	(2,653)	(2,253)
Net operating profit after taxes (NOPAT)		**9,236**	**6,891**	**5,850**
Cash and cash equivalents		12,939	5,393	3,679
Operating working capital		6,458	2,983	(511)
Intangible assets		118,066	68,202	64,950
Property, plant and equipment		60,975	49,548	50,631
Right-of-use assets[a]		30,302	17,998	n.a.
Non-current assets and disposal groups held for sale and liabilities[b]		664	68	145
Investments accounted for using the equity method		543	489	576
Other assets		n.a.	n.a.	331
Present value of unrecognized rental and lease obligations		n.a.	n.a.	15,760
Other provisions		(9,033)	(6,663)	(6,435)
Other NOA adjustments		n.a.	n.a.	0
Net operating assets (NOA)		**220,914**	**138,018**	**129,126**
Average net operating assets (Ø NOA)		**201,545**	**135,618**	**124,024**

[a] The calculation method used to determine this financial performance indicator was adjusted in 2019 as a result of the new IFRS 16 accounting standard.
[b] Excluding the carrying amounts of companies accounted for using the equity method.

ROCE decreased by 0.5 percentage points in the reporting period to 4.6 %. This was due to stronger percentage growth in average operating assets (NOA) than in net operating profit after taxes (NOPAT). Both NOPAT and average NOA were affected by the business combination of T-Mobile US and Sprint. Thus, the positive development of NOPAT in 2020 was driven primarily by a substantial increase in EBIT at T-Mobile US. Overall, NOPAT amounted to EUR 9.2 billion in 2020, up from EUR 6.9 billion in 2019. At the same time, average NOA increased, due in particular to the spectrum licenses; property, plant and equipment; and right-of-use assets acquired as part of the Sprint transaction and the modification of the agreement concerning the lease and use of cell sites between T-Mobile US and American Tower. The average amount of net operating assets (NOA) increased to EUR 201.5 billion in 2020 from EUR 135.6 billion in the prior year. In addition to the inclusion of Sprint, the development of NOA also reflects our consistently high investment volume.

For further information on the definition of ROCE and the methods used to calculate this key performance indicator, please refer to the section "Management of the Group."

Reconciliation for the change in disclosure of key figures for the prior years in the 2020 financial year

millions of €

	Total revenue	Profit (loss) from operations (EBIT)	EBITDA AL (adjusted for special factors)	Depreciation and amortization	Impairment losses	Segment assets[a]	Segment liabilities[a]
FY 2019/December 31, 2019 **Presentation as of December 31, 2019 – as reported**							
Germany	21,886	4,063	8,720	(4,251)	(4)	41,253	30,968
United States	40,420	5,488	11,134	(7,777)	0	84,413	54,087
Europe	12,168	1,182	4,005	(2,790)	(341)	27,699	10,843
Systems Solutions	6,805	(218)	519	(503)	(29)	6,615	4,800
Group Development	2,797	615	1,033	(812)	0	8,395	10,571
Group Headquarters & Group Services	2,620	(1,648)	(651)	(1,158)	(2)	54,162	65,066
Total	**86,696**	**9,482**	**24,760**	**(17,291)**	**(376)**	**222,537**	**176,335**
Reconciliation	(6,166)	(25)	(29)	25	(21)	(51,865)	(51,894)
Group	**80,531**	**9,457**	**24,731**	**(17,266)**	**(397)**	**170,672**	**124,441**
FY 2019/December 31, 2019 **+/- Realignment of the B2B telecommunications business as of July 1, 2020**							
Germany	1,844	265	362	(85)	0	3,021	1,254
United States	0	0	0	0	0	0	0
Europe	(581)	(74)	(94)	17	0	(821)	(316)
Systems Solutions	(2,381)	(207)	(269)	53	0	(2,099)	(833)
Group Development	0	0	0	0	0	0	0
Group Headquarters & Group Services	8	17	0	16	0	177	178
Total	**(1,111)**	**1**	**0**	**1**	**0**	**279**	**283**
Reconciliation	1,111	(1)	0	(1)	0	(279)	(283)
Group	**0**	**0**	**0**	**0**	**0**	**0**	**0**
FY 2019/December 31, 2019 **= Presentation as of December 31, 2020**							
Germany	23,730	4,327	9,083	(4,337)	(4)	44,274	32,222
United States	40,420	5,488	11,134	(7,777)	0	84,413	54,087
Europe	11,587	1,109	3,910	(2,773)	(341)	26,878	10,527
Systems Solutions	4,424	(425)	250	(450)	(29)	4,517	3,967
Group Development	2,797	615	1,033	(812)	0	8,395	10,571
Group Headquarters & Group Services	2,627	(1,631)	(650)	(1,141)	(2)	54,339	65,244
Total	**85,585**	**9,483**	**24,760**	**(17,290)**	**(376)**	**222,816**	**176,618**
Reconciliation	(5,055)	(26)	(29)	24	(21)	(52,144)	(52,177)
Group	**80,531**	**9,457**	**24,731**	**(17,266)**	**(397)**	**170,672**	**124,441**

[a] Figures relate to the reporting date December 31, 2019.

Development of business in the operating segments

For further information, please refer to the IR back-up at: www.telekom.com/en/investor-relations.

Our B2B telecommunications business was realigned with effect from July 1, 2020. A new B2B unit was created in the Germany operating segment, and the assets and liabilities previously assigned to the Systems Solutions, Europe, and Group Headquarters & Group Services segments have been transferred to the new unit. Prior-year comparatives in these segments (development of operations, customer development, headcount development, and order entry) were adjusted retrospectively.

For further information on the realignment of the B2B telecommunications business and on the different consummation dates required under company law, please refer to the section "Group organization."

Germany

Customer development

thousands	Dec. 31, 2020	Dec. 31, 2019	Change	Change %	Dec. 31, 2018
Mobile customers	48,526	46,189	2,337	5.1	44,202
Contract customers	26,037	25,291	746	2.9	25,435
Prepaid customers	22,490	20,898	1,592	7.6	18,767
Fixed-network lines	17,590	17,824	(234)	(1.3)	18,625
Retail broadband lines	14,118	13,730	388	2.8	13,561
Of which: optical fiber	9,515	8,529	986	11.6	7,236
Television (IPTV, satellite)	3,864	3,618	246	6.8	3,353
Unbundled local loop lines (ULLs)	4,101	4,638	(537)	(11.6)	5,236
Wholesale broadband lines	7,733	7,372	361	4.9	6,722
Of which: optical fiber	6,433	5,863	570	9.7	4,970

Total

In Germany we continue to be market leader both in terms of fixed-network and mobile revenues. This success is attributable to our high-performance networks. We offer best customer experience with award-winning network quality – in the fixed network as in mobile communications – and with a broad product portfolio and excellent service. We want to offer our customers a seamless and technology-neutral telecommunications experience. To this end we market not only fixed-network and mobile products, but also convergence products such as our brand-new MagentaEINS Plus rate plan, introduced in September 2020. This new offering bundles our connectivity services for home and on the move in a single contract. Our MagentaEINS convergence product remains very popular among customers, with some 5.1 million customers having opted for MagentaEINS by the end of 2020. That corresponds to an increase of 7.5 % against year-end 2019.

We continued to see strong demand for our fiber-optic-based lines. As of the end of December 2020, the total number of lines had increased to over 15.9 million. In other words, we connected a further 1.6 million lines to our fiber-optic network in Germany in 2020. With the progress made in fiber-optic rollout and vectoring technology, we also successfully drove forward the marketing of higher bandwidths.

Mobile communications

We won a total of 2.3 million mobile customers in 2020. Of these, 649 thousand were high-value contract customers under our Telekom and congstar brands. Sustained high demand for mobile rate plans with included data volumes alongside our multiple award-winning network quality continues to drive this trend. The number of mobile contract customers with resellers (service providers) increased, primarily due to the volatile developments at some of our service providers. We have added 1.6 million prepaid customers since the start of the year, largely on the back of our automotive offerings targeted specifically at business customers.

For further information on our awarding-winning network quality, please refer to the section "Highlights in the 2020 financial year."

The StreamOn option, with which customers can stream certain music, gaming, or video services without reducing their included data allowance, remains very popular. At the end of 2020, almost 4 million customers were using this option, up by around 30 % year-on-year.

Fixed network

Due to the persistently challenging development in the fixed-network market, primarily owing to aggressive pricing offers of competitors, we are pursuing new paths in marketing. Our focus is on convergence offerings and further development of such products: We offer MagentaTV with exclusive access to a wide range of additional content in the Megathek library and via popular streaming services, and with TV lines and fiber-optic-based lines and, since September 2020, our MagentaEINS Plus rate plan. Our brand-new convergence product offers customers Germany-wide unlimited data plus added benefits for the community and no minimum contract term.

The number of broadband lines increased by 388 thousand to over 14.1 million in 2020. After completing the IP migration, broadband customer additions were up significantly compared with 170 thousand additions in 2019. We added 246 thousand TV customers in 2020, increasing the customer base by 6.8 % compared with the end of the prior year. In traditional fixed-network business, the number of lines declined by 234 thousand. This marked a considerable reduction in line losses compared with the prior-year period, which had been affected in particular by the migration of consumers to IP. As expected, the number of fixed-network lines therefore declined slightly to around 17.6 million lines.

Wholesale

As of December 31, 2020, fiber-optic-based lines accounted for 54.4 % of all lines – 5.5 percentage points higher than at the end of 2019. This growth was driven largely by high demand for our contingent model. The number of unbundled local loop lines decreased by 537 thousand compared with the end of the prior year, partly as a result of the shift to higher-value fiber-optic-based lines and partly from consumers switching to cable providers. In addition, our wholesale customers are migrating their retail customers to their own fiber-optic-based lines. The total number of wholesale lines at the end of 2020 was around 11.8 million.

Development of operations

millions of €		2020	2019	Change	Change %	2018
Total revenue		**23,779**	**23,730**	**49**	**0.2**	**23,662**
Consumers		11,723	11,602	121	1.0	11,523
Business Customers		8,861	8,954	(93)	(1.0)	9,032
Wholesale		2,983	2,944	39	1.3	2,874
Other		212	230	(18)	(7.8)	233
Profit (loss) from operations (EBIT)		**4,085**	**4,327**	**(242)**	**(5.6)**	**4,181**
EBIT margin	%	17.2	18.2			17.7
Depreciation, amortization and impairment losses		(4,440)	(4,341)	(99)	(2.3)	(4,116)
EBITDA		8,525	8,668	(143)	(1.6)	8,296
Special factors affecting EBITDA		(751)	(453)	(298)	(65.8)	(628)
EBITDA (adjusted for special factors)		9,276	9,121	155	1.7	8,924
EBITDA AL[a]		8,480	8,630	(150)	(1.7)	8,202
Special factors affecting EBITDA AL[a]		(751)	(453)	(298)	(65.8)	(628)
EBITDA AL (adjusted for special factors)[a]		**9,231**	**9,083**	**148**	**1.6**	**8,829**
EBITDA AL margin (adjusted for special factors)[a]	%	38.8	38.3			37.3
Cash capex[b]		**(4,172)**	**(4,414)**	**242**	**5.5**	**n.a.**

[a] Comparatives for 2018 were calculated on a pro forma basis for the key performance indicators redefined as of January 1, 2019 following the introduction of the IFRS 16 accounting standard.

[b] Retrospective changes in connection with realignment of the B2B telecommunications business have not been applied to cash capex for the 2018 financial year.

Total revenue

In 2020 we generated total revenue of EUR 23.8 billion, which was up slightly by 0.2 % year-on-year. Growth in fixed-network business, driven largely by broadband revenue growth of 5.7 % and a 2.3 % rise in revenue from variable call charges, offset declining revenues in mobile communications business. Overall, revenue was affected by the effects of the coronavirus pandemic, such as temporary travel restrictions, lockdowns, and the deteriorated economic situation. This had a negative impact on roaming, visitor, and terminal equipment revenues, and resulted in delays or postponements to current orders in B2B telecommunications business.

Revenue from **Consumers** grew by 1.0 % year-on-year. Volume-driven declines in revenue from voice components continue to strongly impact on traditional fixed-network business. By contrast, revenue from broadband business grew by 4.8 % while revenue from fixed-network terminal equipment increased by 5.6 % on the back of strong terminal equipment leasing business. Mobile business declined by 1.1 % primarily due to lower revenues from mobile terminal equipment business. In addition, negative trends in roaming and visitor revenues in consequence of the coronavirus pandemic had an impact.

Revenue from **Business Customers** declined by 1.0 %. IT revenues increased by 3.4 % and mobile revenues declined by 0.9 % compared with the prior-year period. Business customer operations were also affected by the aforementioned negative impact of the coronavirus crisis, particularly in mobile business. The B2B telecommunications business, which was integrated into the Germany operating segment effective July 1, 2020, reported a decline in revenue at the end of 2020 of 3.2 % year-on-year. This is attributable to the deteriorated economic situation in consequence of the coronavirus pandemic and to market-related factors such as price erosion and competitive pressure in solutions business.

For further information on the realignment of the B2B telecommunications business, please refer to the section "Group organization."

Wholesale revenue was up at the end of 2020 by 1.3 % year-on-year. The positive trend in the number of fiber-optic-based lines, driven mainly by the contingency model, continued in 2020 with an increase of 9.7 % compared with the end of 2019 and partially offset the decrease in revenues from declining volumes of unbundled local loop lines. The coronavirus pandemic had positive effects on voice revenues in the second and fourth quarter of 2020.

Adjusted EBITDA AL, EBITDA AL

EBITDA AL adjusted for special factors increased by EUR 148 million or 1.6 % year-on-year to EUR 9.2 billion. Our adjusted EBITDA AL margin increased to 38.8 %, up from 38.3 % in the prior year. The main reasons for this increase are a sound operational development, driven by high-value revenue growth and enhanced cost efficiency. Lower personnel costs resulting, among other factors, from the smaller headcount and the ongoing implementation of efficiency enhancement and digitalization measures reduced costs. Higher expenses recognized as special factors for socially responsible instruments in connection with the staff restructuring, in particular the dedicated retirement program, had an offsetting effect. EBITDA AL decreased in 2020 by 1.7 % year-on-year to EUR 8.5 billion.

EBIT

Profit from operations was down 5.6 % year-on-year to around EUR 4.1 billion, partly as a result of the slightly lower EBITDA level together with higher depreciation, amortization and impairment losses year-on-year, mainly on account of higher depreciation of property, plant and equipment.

Cash capex

Cash capex decreased by EUR 242 million or 5.5 % compared with the prior-year period. This is mainly due to the fact that cash outflows in connection with the acquisition of 5G mobile spectrum licenses in the 2019 financial year were shown in cash capex and, since 2020, have been presented in net cash from/used in financing activities on account of the payment plan agreed with the Federal Republic of Germany. Cash capex also declined as a result of the changed accounting treatment of grants receivable from funding projects for the broadband build-out as of the start of the third quarter of 2019. Capital expenditure totaled around EUR 4.2 billion in 2020, with much of this figure going towards the build-out of our 5G and fiber-optic networks. The number of households connected by pure fiber-optic lines increased to over 2 million at the end of 2020. In mobile communications, our customers benefit from greater LTE network coverage. As of December 31, 2020, we supplied 98.7 % of households in Germany with LTE. More than two thirds of the German population can already use 5G.

United States

Customer development

thousands	Dec. 31, 2020	Dec. 31, 2019	Change	Change %	Dec. 31, 2018
Branded customers[a, b]	102,064	67,895	34,169	50.3	63,656
Postpaid customers[c]	81,350	47,034	34,316	73.0	42,519
Postpaid phone customers	66,618	40,346	26,272	65.1	37,224
Other postpaid customers	14,732	6,689	8,043	n.a.	5,295
Prepaid customers[b, c, d]	20,714	20,860	(146)	(0.7)	21,137

Adjustments of the customer base

thousands	Total adjustments of customer base in 2020	Adjustment of customer definition for Sprint's prepaid business as of July 1, 2020[d]	Adjustment of customer definition at Sprint as of Apr. 1, 2020[c]	Sprint additions April 1, 2020
Branded customers[a]	28,354	(9,393)	(4,853)	42,600
Postpaid customers[c]	28,830	0	(5,514)	34,344
Postpaid phone customers	24,055	0	(1,861)	25,916
Other postpaid customers	4,775	0	(3,653)	8,428
Prepaid customers[c, d]	(476)	(9,393)	661	8,256

[a] Starting in the first quarter of 2020, T-Mobile US discontinued reporting of wholesale customers due to the expansion of machine-to-machine (M2M) and Internet of Things (IoT) products and instead will continue to focus on postpaid and prepaid customer reporting.

[b] On July 18, 2019, we entered into an agreement whereby certain T-Mobile US prepaid products will now be offered and distributed by a current MVNO partner. As a result, we included a base adjustment to reduce prepaid customers by 616 thousand in the third quarter of 2019.

[c] Includes customers acquired in connection with the Sprint Merger and certain customer base adjustments.

[d] In connection with obtaining regulatory approval for the Sprint Merger, on July 1, 2020, substantially all prepaid customers acquired were subsequently acquired by DISH. Upon closing of the transaction with DISH, we entered into a Mobile Virtual Network Operator (MVNO) agreement to provide network services to customers of their prepaid business for a period of up to seven years. As a result, we included a base adjustment to reduce prepaid customers by 9.4 million in the third quarter of 2020. The prepaid customers included in our total customers as of June 30, 2020 include the customers subsequently acquired by DISH and are expected to be different than the customers included under the MVNO agreement, and classified as wholesale customers, due to differences in customer reporting policies.

Branded customers

At December 31, 2020, the United States operating segment (T-Mobile US) had 102.1 million customers, compared to 67.9 million customers at December 31, 2019. Net customer additions were 5.8 million in 2020, compared to 4.9 million net customer additions in 2019, due to the factors described below.

Postpaid net customer additions were 5.5 million in 2020 – the most in company history – compared to 4.5 million postpaid net customer additions in 2019. The increase resulted from higher postpaid other net customer additions primarily due to higher gross additions from connected devices primarily due to educational institution additions and lower churn, partially offset by lower switching activity in the industry from reduced store traffic due to retail store closures arising from the coronavirus pandemic. This increase was partially offset by lower postpaid phone net customer additions primarily due to higher churn from customers acquired in the Sprint Merger and lower switching activity in the industry from reduced store traffic due to retail store closures arising from the coronavirus pandemic.

Prepaid net customer additions were 331 thousand in 2020, compared to 339 thousand prepaid net customer additions in 2019. The decrease was primarily due to lower prepaid gross customer additions, partially offset by lower churn due to lower switching activity in the industry from reduced store traffic due to retail store closures arising from the coronavirus pandemic.

Development of operations

millions of €

		2020	2019	Change	Change %	2018
Total revenue		**61,208**	**40,420**	**20,788**	**51.4**	**36,522**
Profit (loss) from operations **(EBIT)**		**9,187**	**5,488**	**3,699**	**67.4**	**4,634**
EBIT margin	%	15.0	13.6			12.7
Depreciation, amortization and impairment losses		(15,665)	(7,777)	(7,888)	n.a.	(5,294)
EBITDA		24,852	13,265	11,587	87.4	9,928
Special factors affecting EBITDA		(270)	(544)	274	50.4	(160)
EBITDA (adjusted for special factors)		25,122	13,809	11,313	81.9	10,088
EBITDA AL[a]		20,628	10,590	10,038	94.8	9,924
Special factors affecting EBITDA AL[a]		(370)	(544)	174	32.0	(160)
EBITDA AL (adjusted for special factors)[a]		**20,997**	**11,134**	**9,863**	**88.6**	**10,084**
EBITDA AL margin (adjusted for special factors)[a]	%	34.3	27.5			27.6
Cash capex		**(10,394)**	**(6,369)**	**(4,025)**	**(63.2)**	**(4,661)**

[a] Comparatives for 2018 were calculated on a pro forma basis for the key performance indicators redefined as of January 1, 2019 following the introduction of the IFRS 16 accounting standard.

Total revenue

Total revenue for the United States operating segment of EUR 61.2 billion in 2020, increased by 51.4 %, compared to EUR 40.4 billion in 2019. In U.S. dollars, T-Mobile US' total revenues increased by 55.0 % year-over year primarily due to increased service revenues as well as increased equipment revenues. The components of these changes are described below.

Service revenues primarily due to higher average postpaid customers driven by customers acquired in the Sprint Merger, the success of new customer segments and rate plans as well as continued growth in existing and new markets, growth in other connected devices (tablets and wearable products), and growth in educational institution customers. The increase in service revenues was also driven by higher postpaid phone ARPU as a result of customers acquired in the Merger and higher roaming and other service revenues primarily from the inclusion of wireline operations acquired in the Sprint Merger.

Equipment revenues increased in 2020 primarily due to an increase in device sales revenue, excluding purchased leased devices. In addition, equipment revenues increased due to the Sprint Merger including increases in lease revenues due to a higher number of customer devices under lease, an increase in revenues primarily related to the liquidation of returned devices, and an increase in sales of leased devices, primarily due to an increase in purchased leased devices.

Other revenues were essentially flat in 2020.

Adjusted EBITDA AL, EBITDA AL

In euros, adjusted EBITDA AL increased by 88.6 % to EUR 21.0 billion in 2020, compared to EUR 11.1 billion in 2019. The adjusted EBITDA AL margin increased to 34.3 % in 2020, compared to 27.5 % in 2019. In U.S. dollars, adjusted EBITDA AL increased by 92.8 % during the same period. Adjusted EBITDA AL increased primarily due to higher service revenues and equipment revenues as discussed above. These increases were partially offset by increases in expenses primarily due to the Sprint Merger including those associated with backhaul agreements, other tower expenses, employee-related and benefit-related costs primarily due to increased headcount, external labor and professional services, lease costs, and advertising. Additional increases in expenses primarily due to the Sprint Merger include those associated with leased device cost of equipment sales, primarily due to an increase in purchased leased devices, costs related to the liquidation of returned devices, repair and maintenance costs, regulatory and roaming costs, and legal related expenses for risk provisioning and commitments. In addition to these costs primarily due to the Sprint Merger, were increases in expenses primarily due to the continued build-out of our nationwide 5G network, costs associated with our restructuring activities, device cost of equipment sales, excluding purchased leased devices, bad debt primarily due to the estimated macro-economic impacts of the coronavirus pandemic, commission expense primarily due to higher gross customer additions, and inventory repair expense as a result of an increase in the high-end device mix to fulfill insurance claims. The impact from commission costs capitalization and amortization, including a net benefit from costs capitalized as result of the Sprint Merger, reduced adjusted EBITDA AL by USD 45 million in 2020 compared to 2019.

EBITDA AL in 2020, included special factors of EUR -0.4 billion compared to special factors of EUR -0.5 billion in 2019. The change in special factors was primarily due to an increase of EUR 1.2 billion in Merger-related costs including transaction costs, including legal and professional services related to the completion of the Merger; EUR 1.0 billion of restructuring costs, including severance, store rationalization and network decommissioning; and integration costs to achieve synergies in network, retail, IT, and back office operations. Also, EUR 0.4 billion in third-party commissions and cleaning-related expenses associated with the coronavirus pandemic and EUR 0.2 billion postpaid billing system disposal. These increases in special factor expenses were offset by the EUR 1.6 billion spectrum impairment reversal and the EUR 0.3 billion transaction fee received from SoftBank. Overall, EBITDA AL increased by 94.8 % to EUR 20.6 billion in 2020, compared to EUR 10.6 billion in 2019, due to the factors described above, including special factors.

EBIT

EBIT increased by 67.4 % to EUR 9.2 billion in 2020, compared to EUR 5.5 billion in 2019. In U.S. dollars, EBIT increased by 72.6 % during the same period primarily due to higher EBITDA AL. In U.S. dollars, depreciation and amortization increased by 106.5 % primarily due to higher depreciation expense from assets acquired in the Sprint Merger, excluding leased devices, and network expansion from the continued build-out of our nationwide 5G network. In addition depreciation and amortization increased due to higher depreciation expense on leased devices resulting from a higher total number of customer devices under lease, primarily from customers acquired in the Sprint Merger, and higher amortization from intangible assets acquired in the Sprint Merger.

Cash capex

Cash capex increased by 63.2 % to EUR 10.4 billion in 2020, compared to EUR 6.4 billion in 2019. In U.S. dollars, cash capex increased by 67.3 % primarily driven by network integration related to the Sprint Merger, the continued build-out of our nationwide 5G network and an increase in spectrum purchases.

Europe
Customer development

thousands

		Dec. 31, 2020	Dec. 31, 2019	Change	Change %	Dec. 31, 2018
Europe, total	Mobile customers	45,619	46,165	(546)	(1.2)	50,542
	Contract customers[a]	26,918	26,245	673	2.6	26,665
	Prepaid customers[a]	18,701	19,920	(1,219)	(6.1)	23,877
	Fixed-network lines[b]	9,084	9,105	(21)	(0.2)	9,039
	Of which: IP-based[b]	8,439	8,311	128	1.5	7,391
	Broadband customers	6,953	6,672	281	4.2	6,405
	Television (IPTV, satellite, cable)	5,057	4,945	112	2.3	4,835
	Unbundled local loop lines (ULLs)/ wholesale PSTN	2,246	2,294	(48)	(2.1)	2,275
	Wholesale broadband lines[c]	684	533	151	28.3	411
Greece	Mobile customers	6,914	7,365	(451)	(6.1)	7,893
	Fixed-network lines	2,589	2,638	(49)	(1.9)	2,566
	Broadband customers	2,185	2,033	152	7.5	1,893
Romania	Mobile customers	4,683	4,916	(233)	(4.7)	5,360
	Fixed-network lines	1,444	1,560	(116)	(7.4)	1,741
	Broadband customers	912	1,014	(102)	(10.1)	1,101
Hungary	Mobile customers	5,427	5,369	58	1.1	5,330
	Fixed-network lines	1,759	1,703	56	3.3	1,663
	Broadband customers	1,323	1,231	92	7.5	1,148
Poland	Mobile customers	11,198	10,954	244	2.2	10,787
	Fixed-network lines	31	18	13	72.2	18
	Broadband customers	39	18	21	n.a.	18
Czech Republic	Mobile customers	6,178	6,265	(87)	(1.4)	6,188
	Fixed-network lines[b]	606	533	73	13.7	394
	Broadband customers	368	320	48	15.0	251
Croatia	Mobile customers	2,253	2,274	(21)	(0.9)	2,273
	Fixed-network lines	885	908	(23)	(2.5)	931
	Broadband customers	625	621	4	0.6	618
Slovakia	Mobile customers	2,441	2,428	13	0.5	2,369
	Fixed-network lines	865	860	5	0.6	853
	Broadband customers	607	576	31	5.4	543
Austria	Mobile customers	5,074	5,019	55	1.1	7,194
	Fixed-network lines	569	549	20	3.6	538
	Broadband customers	635	612	23	3.8	594
Other[d]	Mobile customers	1,451	1,576	(125)	(7.9)	3,149
	Fixed-network lines	335	335	0	0.0	333
	Broadband customers	259	249	10	4.0	238

[a] M2M cards (machine-to-machine) were reclassified Group-wide as of January 1, 2020 and assigned exclusively to the prepaid customer segment. The portion of M2M cards which had previously been recognized in the contract customer segment was reclassified accordingly. The comparatives for 2019 have been adjusted retrospectively.

[b] The prior-year comparatives for IP-based fixed-network lines in the Czech Republic were adjusted as part of the standardization of the underlying customer definition.

[c] The prior-year comparatives for wholesale broadband lines in Croatia and Greece were adjusted as part of the standardization of the underlying customer definition.

[d] “Other”: national companies of North Macedonia, Montenegro, and the lines of the GTS Central Europe group in Romania. We sold the national company in Albania as of May 7, 2019.

Total

After customer development was hampered by the corona-induced shop closures during the first lockdown, our crisis management paid off over the remainder of the year. The focus on expanding digital sales channels, such as our service app and service center services, almost brought customer development back to normal. It did not slump again, not even when lockdown measures were reimposed at the end of 2020 during the second coronavirus wave. Our MagentaOne convergent product portfolio, in particular, generated double-digit growth of 19.5 % in FMC customers thanks to ongoing demand. We are continuously building out our fixed-network infrastructure with state-of-the-art fiber-optic-based lines (FTTH, FTTB, and FTTC), with Greece, Hungary, and Slovakia in particular seeing the greatest rollout progress in the reporting year. Since the start of the year, the number of broadband customers has increased by 4.2 %.

In mobile business, we recorded growth in high-value contract customers, which only partially offset the decline in the prepaid customer base. In 5G, we reached the first milestone a year ago with the market launch in Austria. Following Hungary and Poland, our national companies in the Czech Republic, Slovakia, Croatia, and Greece also launched 5G commercially in the fourth quarter of 2020.

Mobile communications

In the Europe operating segment, we had 45.6 million mobile customers as of December 31, 2020, a slight decline of 1.2 % compared with the end of 2019. The number of high-value contract customers increased by 2.6 %. The contract customer bases grew or remained stable in almost all of our national companies, with particularly strong growth recorded in Romania, Austria, Poland, and Hungary. Overall, contract customers account for 59 % of the total customer base. Our innovative services and rate plans are now joined in all countries by a new product portfolio, which we revamped in line with the “more for more” principle. Customers in these countries can now select high-value add-on services – e.g., more data – for a small additional monthly fee. The new portfolio also satisfies the growing demand for data volume driven by video streaming and gaming services. In addition, thanks to our integrated network strategy our customers benefited from greater coverage with fast mobile broadband. As of December 31, 2020, we covered 97.6 % of the population in the countries of our operating segment with LTE, reaching around 108 million people in total.

By contrast, the prepaid customer base declined slightly, in line with expectations, in particular in Romania and Greece. This was due in part to the negative impact of the coronavirus pandemic. But also, our market approach is focused on contract rate plans and we offer our prepaid customers attractive high-value contract rate plans. Already, more than one third of new contract customer adds are former prepaid customers who have taken advantage of these offerings. Furthermore, inactive SIM cards are deactivated from the customer base at regular intervals.

Fixed network

Broadband business continued to grow despite the coronavirus pandemic, with the customer base increasing by 4.2 % compared with the end of the prior year to a total of 7.0 million. The customer bases of almost all of our national companies, especially in Greece, Hungary, the Czech Republic, and Slovakia saw substantial growth. Romania was the exception. By continuing to invest in innovative fiber-optic-based technologies, we are systematically building out our fixed-network infrastructure. Thus, we increased household coverage with optical fiber at our four largest national companies to 4.1 million households as of December 31, 2020. The number of IP-based lines increased to account for 92.5 % of all fixed-network lines by the end of December 2020. The total number of fixed-network lines in our Europe operating segment was on a par with the prior-year level at 9.1 million.

The TV and entertainment business had a total of 5.1 million customers as of December 31, 2020, up 2.3 % compared with the prior year. With both telecommunications providers and OTT players offering TV services, the TV market is already saturated in many countries of our segment.

FMC – fixed-mobile convergence

Our portfolio of convergent products, MagentaOne, was highly popular with consumers across all of our national companies. At the end of 2020, we had 5.7 million FMC customers; this corresponds to growth of 19.5 % compared with the prior year. Our national companies in Greece, Hungary, and Austria in particular contributed to this double-digit growth. We have also seen substantially accelerated growth in the marketing of our MagentaOne Business product to business customers.

Development of operations

millions of €

		2020	2019	Change	Change %	2018
Total revenue		**11,335**	**11,587**	**(252)**	**(2.2)**	**11,312**
Greece		2,940	2,943	(3)	(0.1)	2,888
Romania		951	980	(29)	(3.0)	933
Hungary		1,734	1,872	(138)	(7.4)	1,889
Poland		1,453	1,486	(33)	(2.2)	1,526
Czech Republic		1,072	1,088	(16)	(1.5)	1,047
Croatia		917	960	(43)	(4.5)	966
Slovakia		773	785	(12)	(1.5)	761
Austria		1,302	1,276	26	2.0	1,055
Other[a]		283	298	(15)	(5.0)	343
Profit (loss) from operations **(EBIT)**		**1,278**	**1,109**	**169**	**15.2**	**650**
EBIT margin	%	11.3	9.6			5.7
Depreciation, amortization and impairment losses		(2,875)	(3,114)	239	7.7	(2,998)
EBITDA		4,153	4,223	(70)	(1.7)	3,648
Special factors affecting EBITDA		(188)	(141)	(47)	(33.3)	(122)
EBITDA (adjusted for special factors)		4,341	4,364	(23)	(0.5)	3,771
EBITDA AL[b]		3,722	3,769	(47)	(1.2)	3,581
Special factors affecting EBITDA AL[b]		(188)	(141)	(47)	(33.3)	(122)
EBITDA AL (adjusted for special factors)[b]		**3,910**	**3,910**	**0**	**0.0**	**3,703**
Greece		1,199	1,212	(13)	(1.1)	1,173
Romania		153	141	12	8.5	135
Hungary		520	551	(31)	(5.6)	540
Poland		378	383	(5)	(1.3)	382
Czech Republic		430	448	(18)	(4.0)	432
Croatia		337	360	(23)	(6.4)	374
Slovakia		335	327	8	2.4	320
Austria		496	467	29	6.2	336
Other[a]		63	20	43	n.a.	11
EBITDA AL margin (adjusted for special factors)[b]	%	34.5	33.7			32.7
Cash capex[c]		**(2,216)**	**(1,816)**	**(400)**	**(22.0)**	**n.a.**

The contributions of the national companies correspond to their respective unconsolidated financial statements and do not take consolidation effects at operating segment level into account.

a “Other”: national companies of North Macedonia, Montenegro, and the GTS Central Europe group in Romania, as well as the Europe Headquarters. We sold the national company in Albania as of May 7, 2019.

b Comparatives for 2018 were calculated on a pro forma basis for the key performance indicators redefined in 2019 following the introduction of the IFRS 16 accounting standard.

c Retrospective changes arising in connection with the realignment of the B2B telecommunications business have not been applied to cash capex for the 2018 financial year.

Total revenue

Our Europe operating segment generated total revenue of EUR 11.3 billion as of December 31, 2020, a year-on-year decrease of 2.2 %. In organic terms, i.e., assuming constant exchange rates and adjusted for the sale of Telekom Albania, revenue remained on a par with the prior-year level, despite the deterioration in economic conditions due to the coronavirus pandemic. Overall we therefore fell slightly short of our expectations on account of the coronavirus pandemic.

Fixed-network business proved to be solid over the year as a whole. We thus recorded an increase in revenue from broadband business in organic terms, in part as a result of the ongoing build-out of our networks. In many places, we have been rated the telecommunications company with the best network (e.g., Connect readers’ choice 2020, Ookla tests in Greece and Croatia), which is paying off, especially in these times of lockdowns, with the associated demand for broadband connections. Thanks to the wide range of services we offer, the TV business also recorded slight growth rates. The systems solutions business grew year-on-year, especially in Greece and Poland; the wholesale business also recorded positive growth rates, driven in part by higher revenue in Romania. We recorded a slight organic decline in mobile revenues compared with the prior year, primarily driven by declines in roaming and visitor revenues as a result of travel restrictions, some of which are still in place or have been reimposed, and by a conscious reduction in low-margin terminal equipment business. These negative effects have been partially offset by increases in higher-margin service revenues (excluding roaming and visitor revenues).

For more information on our award-winning network quality, please refer to the section “Highlights in the 2020 financial year.”

Looking at the development by country, our national companies in Austria, Poland, and the Czech Republic recorded the best organic development of revenue in the 2020 financial year. This offset the decline in revenue in Romania, Croatia, and Slovakia in particular. In Romania, the downward trend was mainly due to declining revenues from mobile communications and systems solutions business, which were partially offset by higher wholesale revenues.

Revenue from **Consumers** declined by 1.5 % compared with the prior-year period. Lower revenue from mobile terminal equipment business and from roaming was only partially offset by gains in higher-margin service revenues (excluding roaming). In the fixed network, revenue from broadband/TV business increased thanks to our innovative TV and entertainment offerings as well as the continuous rollout of fiber-optic technology. This offset the decline in revenue from voice telephony. In addition, the higher number of FMC customers had a positive impact on revenue.

The coronavirus pandemic posed huge challenges for the European companies in 2020. This is clearly reflected in our **Business Customers** operations. Revenue decreased 2.6 % year-on-year, with declines in mobile communications, fixed-network, and ICT business. As a result of coronavirus-related travel restrictions, our European subsidiaries were unable to realize the majority of the planned roaming revenues (especially in tourism countries such as Croatia). As of the end of 2020, these losses were not offset by revenue from the Europe-wide increase in demand for mobile data and broadband lines. In the first and third quarters of 2020, our ICT business recorded above-average new business with our cloud solutions (e.g., in Greece). However, by the end of 2020, the second lockdown had caused further postponements of customer orders from our corporate customers and from the public sector, which resulted in a slight decline in revenues from ICT business (in particular in our most important ICT market, Hungary).

Adjusted EBITDA AL, EBITDA AL

Our Europe operating segment generated adjusted EBITDA AL of EUR 3.9 billion in the 2020 financial year, which was on a par with the prior-year level, despite the impact of the coronavirus pandemic. In organic terms, i.e., assuming constant exchange rates and adjusted for the sale of Telekom Albania, adjusted EBITDA AL increased by 2.1 %, thus continuing to make a positive contribution to earnings. Savings in indirect costs (primarily due to lower personnel, marketing, and travel costs) were the main factor contributing to this development.

Looking at the development by country, the increase in adjusted organic EBITDA AL was largely attributable to the positive trends at our national companies in Austria, Romania, Hungary, Slovakia, and Poland. Contrasting developments were reported primarily at the national company in Croatia, where decreases in mobile revenues, especially from roaming and visitors, terminal equipment business, as well as decreases in voice telephony in fixed-network business, were only partially offset by positive revenue effects from systems solutions as well as broadband and TV business.

EBITDA AL decreased by 1.8 % year-on-year to EUR 3.7 billion. Expenses arising from special factors were up EUR 47 million year-on-year, mainly on account of the higher expenses for staff restructuring measures. The agreed sale of the Romanian fixed-network business prompted a reversal of impairment losses in the course of the year that had been recognized on property, plant and equipment in the past. This had a positive effect on EBITDA AL in the amount of EUR 50 million. In organic terms, EBITDA AL recorded modest growth of 0.7 %.

Development of operations in selected countries

Greece. In Greece, revenue remained on a par with the prior-year level at EUR 2.9 billion. The fixed-network business recorded a further increase: the broadband business posted particularly strong growth as a result of the intensive rollout of fiber-optic lines and vectoring. The systems solutions business also recorded significant growth, firmly driven by higher contract volumes in the public sector. The wholesale business recorded modest growth. In addition to good operational development, mobile business was heavily impacted by the coronavirus-related decline in roaming and visitor revenues as a result of reduced travel activities. These declines were only partially offset by the increase in the number of mobile devices sold. Business with the convergent product portfolio enjoyed a positive trend, generating revenue growth, thanks in particular to higher customer numbers.

In the 2020 financial year, adjusted EBITDA AL in Greece stood at EUR 1.2 billion, which was a slight decrease against the prior year of 1.1 %: the slightly lower net margin, driven largely by higher direct costs, was only partially offset by savings in indirect costs, in particular personnel costs.

Hungary. Revenue in Hungary totaled EUR 1.7 billion in the 2020 financial year, a decrease of 7.4 % against the prior year. This decline was due to negative exchange rate effects. In organic terms, revenue was on a par with the prior year. Mobile business grew, driven by higher service revenues (excluding from roaming and visitors), due in part to much higher data usage. This offset the decrease in roaming and visitor revenues resulting from the negative impact of the coronavirus pandemic. Higher revenues from the sale of mobile devices also contributed to this increase. In fixed-network business, systems solutions saw a decline due to a lower order volume in the public sector. By contrast, both broadband and TV revenues increased substantially, driven in particular by a larger customer base. Our MagentaOne convergence products also continued to perform well, with substantial customer additions and a corresponding increase in revenue.

Adjusted EBITDA AL stood at EUR 520 million, down 5.6 % year-on-year. In organic terms, adjusted EBITDA AL increased by 2.0 % compared with the prior year. This growth is attributable in particular to savings in indirect costs, including lower personnel costs and marketing expenses. Lower direct costs also had a positive impact on organic adjusted EBITDA AL.

Poland. Our revenue in Poland decreased by 2.2 % in the 2020 financial year to EUR 1.5 billion. This decline was due to negative exchange rate effects. In organic terms, revenue increased by 1.1 %. This growth is based on higher fixed-network revenue, especially in systems solutions business. The fixed-network core business also generated substantial revenue growth thanks to a larger customer base. Overall, this growth offset the negative effects from the decline in wholesale business. Higher service revenues in the mobile business (excluding roaming and visitors) were almost sufficient to offset the declines, particularly in terminal equipment sales and roaming and visitor revenues. The increase in high-value service revenues was attributable to both volume-driven increases in revenues from voice telephony and a higher-value customer base.

Adjusted EBITDA AL stood at EUR 378 million, down 1.3 % year-on-year. In organic terms, adjusted EBITDA AL increased by 2.0 %, mainly on the back of a higher net margin.

Czech Republic. In the 2020 financial year, revenue in the Czech Republic stood at EUR 1.1 billion, down 1.5 % on the prior-year level. This decline was due to negative exchange rate effects. In organic terms, revenue increased by 1.6 %. The fixed-network business was a strong driver of growth, recording substantial year-on-year increases in broadband and TV business in particular. The continuous investments in new fiber-optic networks paid off with a higher number of customers. Mobile revenues were down slightly on the prior-year level. In operational terms, service revenues (excluding roaming and visitors) increased year-on-year. The customer response to our “more for more” offers and the associated increase in revenue per customer contributed to this positive trend. However, the negative effects of the coronavirus pandemic on roaming and visitor revenues neutralized these gains.

Adjusted EBITDA AL decreased by 4.0 % year-on-year to EUR 430 million. In organic terms, earnings declined slightly by 1.2 % against the previous year: the positive organic revenue trend was offset by overall increases in direct and indirect costs.

Austria. Revenue in Austria totaled EUR 1.3 billion in the reporting year. This increase of 2.0 % was mainly attributable to higher mobile terminal equipment sales. Business with higher-margin service revenues also contributed positively to revenue. These two effects more than offset the declines in roaming and visitor revenues resulting from the coronavirus pandemic. The Magenta product portfolio has been very well received by our customers. This can be seen in particular in the development of the fixed-network business: broadband in particular generated positive growth rates, as a result of a larger customer base and other factors.

Adjusted EBITDA AL increased substantially by 6.2 % year-on-year to EUR 496 million. In addition to the positive revenue effects, stability in the development of costs also contributed to this growth.

EBIT

Our Europe operating segment recorded an increase in EBIT of EUR 169 million in the reporting year. In connection with the agreed sale of the Romanian fixed-network business, an ad hoc impairment loss of EUR 160 million was recognized in 2020 on non-current assets of the Romanian mobile business, which is to remain in the Group. This impairment was the result of the discontinuance of the previously existing MVNO agreements. Impairment losses totaling EUR 0.3 billion were recognized in Romania in the prior year. Depreciation and amortization were down slightly on the prior year.

Cash capex

In the reporting year, the Europe operating segment reported cash capex of EUR 2.2 billion, up 22.0 % year-on-year. This increase is largely due to a rise in cash outflows for the acquisition of spectrum licenses, primarily in Hungary and Greece. Even adjusted for spectrum acquisitions, our level of investment was up year-on-year. We continue to invest in the provision of broadband and fiber-optic technology and in 5G as part of our integrated network strategy.

Systems Solutions
Order entry

millions of €

	2020	2019	Change	Change %	2018[a]
Order entry	4,588	4,740	(152)	(3.2)	n.a.

[a] Retrospective changes arising in connection with the realignment of the B2B telecommunications business have not been applied to order entry for the 2018 financial year.

Development of business

The 2020 financial year was dominated by the ongoing strategic development of our systems solutions business with a focus on growth and future viability, as well as our extensive transformation program, and the effects of the coronavirus pandemic.

Under the transformation program we realigned our organization and workflows, adjusted capacities, and developed a new strategy for our portfolio. Stand-alone portfolio units assume responsibility not only for our growth areas but also for our traditional IT business. Consistent with our efforts to implement the Group's strategy pillar "Lead in business productivity," on July 1, 2020, we combined our B2B telecommunications operations in our Germany operating segment.

Furthermore, the effects of the coronavirus pandemic on the global economy continue to impact on the financial position of our business customers. This led to delays in current projects and the postponement of deal closures, especially with our automotive customers in the digital solutions area. The resulting mid-year lull in order entry was almost completely offset by the year-end with a number of major deals signed in other areas. As a result, order entry in our Systems Solutions operating segment decreased year-on-year by 3.2 % in 2020, which was in line with our expectations.

Development of operations

millions of €

		2020	2019	Change	Change %	2018
Total revenue		**4,178**	**4,424**	**(246)**	**(5.6)**	**4,474**
Of which: external revenue		3,242	3,423	(181)	(5.3)	3,435
Profit (loss) from operations **(EBIT)**		**(650)**	**(425)**	**(225)**	**(52.9)**	**(453)**
Special factors affecting EBIT		(636)	(338)	(298)	(88.2)	(296)
EBIT (adjusted for special factors)		(14)	(87)	73	83.9	(157)
EBIT margin (adjusted for special factors)	%	(0.3)	(2.0)			(3.5)
Depreciation, amortization and impairment losses		(790)	(479)	(311)	(64.9)	(409)
EBITDA		140	54	86	n.a.	(44)
Special factors affecting EBITDA		(210)	(310)	100	32.3	(240)
EBITDA (adjusted for special factors)		350	364	(14)	(3.8)	196
EBITDA AL[a]		25	(60)	85	n.a.	(31)
Special factors affecting EBITDA AL[a]		(210)	(310)	100	32.3	(240)
EBITDA AL (adjusted for special factors)[a]		**235**	**250**	**(15)**	**(6.0)**	**209**
EBITDA AL margin (adjusted for special factors)[a]	%	5.6	5.7			4.7
Cash capex[b]		**(255)**	**(356)**	**101**	**28.4**	**n.a.**

[a] Comparatives for 2018 were calculated on a pro forma basis for the key performance indicators redefined as of January 1, 2019 following the introduction of the IFRS 16 accounting standard.

[b] Retrospective changes in connection with realignment of the B2B telecommunications business have not been applied to cash capex for the 2018 financial year.

Total revenue

Total revenue in our Systems Solutions operating segment in the 2020 financial year decreased by 5.6 % year-on-year to EUR 4.2 billion, reflecting the coronavirus-induced decline of the IT market in Western Europe. The upward revenue trend in our growth areas public cloud and security was not sufficient to fully offset the declines in traditional IT and project business. The development of the digital solutions business was particularly affected by the impact of the coronavirus pandemic on the automotive industry.

Adjusted EBITDA AL, EBITDA AL

In the 2020 financial year, adjusted EBITDA AL at our Systems Solutions operating segment decreased by 6.0 % year-on-year to EUR 235 million. The decrease in earnings in traditional IT business and in project business, partly due to the effects of the coronavirus pandemic, were largely offset by efficiency enhancement effects from our transformation program and strong growth in our growth areas (especially public cloud and security). EBITDA AL increased by EUR 85 million compared with the prior year to EUR 25 million, thanks to the streamlining of the portfolio in 2019. As a result, special factors were down EUR 100 million on the prior year, at EUR -200 million.

Adjusted EBIT, EBIT

Adjusted EBIT in our Systems Solutions operating segment in the 2020 financial year improved by EUR 73 million year-on-year, coming in at EUR -14 million, mainly as a result of declines in depreciation and amortization. The realignment of the B2B telecommunications business in combination with the effects of the coronavirus pandemic triggered ad hoc impairment testing, which identified a reduction in the business outlook for IT operations. This resulted in the recognition of a non-cash impairment loss of around EUR 0.4 billion on non-current assets in the systems solutions business, which reduced EBIT to EUR -0.7 billion.

Cash capex

Cash capex in the Systems Solutions operating segment stood at EUR 255 million in 2020, compared with EUR 356 million in the prior year. This was due to a reduced need for investments in traditional IT business and in the area of digital solutions, which was impacted by the effects of the coronavirus pandemic on the automotive industry. Going forwards, we will continue to focus our investments on developing our growth business.

Group Development

Customer development

thousands		Dec. 31, 2020	Dec. 31, 2019	Change	Change %	Dec. 31, 2018
T-Mobile Netherlands	Mobile customers	6,803	5,610	1,193	21.3	4,021
	Fixed-network lines	682	619	63	10.2	241
	Broadband customers	668	605	63	10.4	241

The number of mobile customers and fixed-network lines in the Netherlands continued to increase steadily on the back of the positive development of operational business. The acquisition of the Dutch MVNO and SIM provider Simpel as of December 1, 2020 increased the mobile customer base by around 1.0 million. In mobile communications, our portfolio of rate plans with large data volumes through to unlimited data continued to win us new customers despite the deteriorated economic situation in consequence of the coronavirus pandemic, as well as intense competition. The number of customers in the fixed-network consumer portfolio also continued to grow.

Development of operations

millions of €		2020	2019	Change	Change %	2018
Total revenue		**2,883**	**2,797**	**86**	**3.1**	**2,185**
Of which: T-Mobile Netherlands		1,946	1,910	36	1.9	1,322
Of which: GD Towers		989	945	44	4.7	862
Profit (loss) from operations (EBIT)		**562**	**615**	**(53)**	**(8.6)**	**560**
Depreciation, amortization and impairment losses		(780)	(812)	32	3.9	(334)
EBITDA		1,343	1,427	(84)	(5.9)	893
Special factors affecting EBITDA		(43)	97	(140)	n.a.	(27)
EBITDA (adjusted for special factors)		1,386	1,330	56	4.2	921
Of which: T-Mobile Netherlands		639	591	48	8.1	425
Of which: GD Towers		786	771	15	1.9	529
EBITDA AL[a]		1,058	1,130	(72)	(6.4)	865
Special factors affecting EBITDA AL[a]		(43)	97	(140)	n.a.	(27)
EBITDA AL (adjusted for special factors)[a]		**1,101**	**1,033**	**68**	**6.6**	**892**
Of which: T-Mobile Netherlands		554	502	52	10.4	413
Of which: GD Towers		587	563	24	4.3	509
EBITDA AL margin (adjusted for special factors)[a]	%	38.2	36.9			40.8
Cash capex		**(699)**	**(452)**	**(247)**	**(54.6)**	**(271)**

[a] Comparatives for 2018 were calculated on a pro forma basis for the key performance indicators redefined as of January 1, 2019 following the introduction of the IFRS 16 accounting standard.

Total revenue

Total revenue in our Group Development operating segment increased in 2020 by 3.1 % year-on-year to EUR 2.9 billion, thanks to the operational growth of our two subsidiaries, T-Mobile Netherlands and DFMG. In the Netherlands, customer growth in the mobile and fixed-network business, higher terminal equipment sales, and the acquisition of Simpel effective December 1, 2020 contributed to the revenue growth. The GD Towers unit also recorded a year-on-year increase in revenue, driven by volume-based growth at DFMG.

Adjusted EBITDA AL, EBITDA AL

Adjusted EBITDA AL increased year-on-year from EUR 1.0 billion to EUR 1.1 billion. This growth was attributable to the aforementioned positive revenue trend at T-Mobile Netherlands, synergies from the takeover of Tele2 Netherlands, and efficient cost management in the company. The GD Towers business continued to post consistent growth on the back of rising volumes. By contrast, EBITDA decreased by 6.4 % to EUR 1.1 billion. This was primarily due to negative special factors of EUR 43 million arising in part from consulting services in connection with the business combination of T-Mobile US and Sprint and the integration of Tele2 Netherlands at T-Mobile Netherlands. The prior-year figure included positive net special factors of EUR 97 million, mainly resulting from the allocation of our share of 11 % in Ströer SE & Co. KGaA to Deutsche Telekom Trust e.V.

EBIT

EBIT decreased by 8.6 % year-on-year to EUR 562 million, mainly as a result of the special factors described under adjusted EBITDA AL. Depreciation, amortization and impairment losses were down on the prior-year period.

Cash capex

Cash capex increased by EUR 247 million year-on-year to EUR 699 million, mainly due to the acquisition of mobile licenses by T-Mobile Netherlands. It also grew as a result of additional investments for the 5G build-out and those required to integrate Tele2 Netherlands and higher capital expenditure at DFMG in connection with building out mobile infrastructure in Germany.

Group Headquarters & Group Services

Development of operations

millions of €	2020	2019	Change	Change %	2018
Total revenue	**2,556**	**2,627**	**(71)**	**(2.7)**	**2,735**
Profit (loss) from operations **(EBIT)**	**(1,655)**	**(1,631)**	**(24)**	**(1.5)**	**(1,646)**
Depreciation, amortization and impairment losses	(1,304)	(1,143)	(161)	(14.1)	(812)
EBITDA	(350)	(488)	138	28.3	(833)
Special factors affecting EBITDA	(277)	(237)	(40)	(16.9)	(318)
EBITDA (adjusted for special factors)	(73)	(251)	178	70.9	(515)
EBITDA AL[a]	(707)	(887)	180	20.3	(917)
Special factors affecting EBITDA AL[a]	(277)	(237)	(40)	(16.9)	(318)
EBITDA AL (adjusted for special factors)[a]	**(429)**	**(650)**	**221**	**34.0**	**(599)**
Cash capex[b]	**(990)**	**(1,010)**	**20**	**2.0**	**n.a.**

[a] Comparatives for 2018 were calculated on a pro forma basis for the key performance indicators redefined as of January 1, 2019 following the introduction of the IFRS 16 accounting standard.

[b] Retrospective changes in connection with realignment of the B2B telecommunications business have not been applied to cash capex for the 2018 financial year.

Total revenue

Total revenue in our Group Headquarters & Group Services segment decreased in 2020 by 2.7 % year-on-year as a result of lower revenue from land and buildings, largely due to the ongoing optimization of space. Lower intragroup revenues at Deutsche Telekom IT on account of a reduced revenue-relevant cost basis also had an effect.

Adjusted EBITDA AL, EBITDA AL

Adjusted EBITDA AL at Group Headquarters & Group Services increased by EUR 221 million year-on-year to EUR -429 million. This increase was mainly due to lower operating expenses at our Group Services, higher income from real estate sales, and the reduced headcount at Vivento as a result of the continued staff restructuring. Furthermore, lower IT-related costs at Deutsche Telekom IT had a positive impact. By contrast, lower revenue from land and buildings had a negative impact on adjusted EBITDA AL.

Overall, EBITDA AL was negatively impacted in the reporting year by special factors amounting to EUR 277 million, especially for staff-related measures. This contrasts with special factors of EUR 237 million in the prior-year period, also in particular for staff-related measures.

EBIT

The moderate year-on-year decline in EBIT of EUR 24 million to EUR -1.7 billion was largely a result of two contrasting effects: the increase in depreciation, amortization and impairment losses on the one hand, and the positive development of EBITDA AL on the other. The increase in depreciation, amortization and impairment losses is mainly attributable to the increased volume of output in connection with the introduction of agile processes and shorter project runtimes at Deutsche Telekom IT. Depreciation and amortization also rose following the decision to capitalize newly commissioned domestic intragroup development services at Deutsche Telekom IT since January 2016 instead of charging them internally. An impairment loss was also recognized in the amount of EUR 44 million on software used by the Systems Solutions operating segment. This was a consequence of the ad hoc impairment testing carried out in the Systems Solutions cash-generating unit. By contrast, depreciation, amortization and impairment losses from land and buildings decreased as a result of our continued optimization of the real estate portfolio.

Cash capex

Cash capex decreased by EUR 20 million year-on-year, primarily owing to decreased investment in real estate-related construction and project services and lower cash capex for vehicles.

Development of business at Deutsche Telekom AG

Deutsche Telekom AG prepares its annual financial statements in accordance with the principles of German GAAP, as specified in the German Commercial Code (Handelsgesetzbuch – HGB) and the German Stock Corporation Act (Aktiengesetz – AktG).

As the Headquarters of the Deutsche Telekom Group, we perform strategic and cross-segment management functions and provide services for other Group companies. The profits and losses of our subsidiaries and Group financing measures have a material effect on our financial position and results of operations. Total revenue in the United States operating segment increased by 51.4 %. This increase was mainly attributable to higher service and terminal equipment revenues, due in particular to postpaid customer additions in connection with the business combination with Sprint, growing success of new customer segments as well as continued growth in existing and new markets. Total revenue in our Germany operating segment was almost flat on the prior-year level with an increase of 0.2 %. Higher revenue in the fixed-network business compensated for revenue declines in the mobile communications business. The coronavirus pandemic had a negative impact on roaming, visitor, and terminal equipment revenues. It also resulted in delays or postponements to current orders in B2B telecommunications business. Revenue in our Europe operating segment decreased by 2.2 %. In organic terms, revenue remained stable at the prior-year level, despite the deterioration in economic conditions due to the coronavirus pandemic. The fixed-network business showed a very solid performance. Revenue from our mobile communications business recorded a slight decline, in particular in roaming, visitor, and terminal equipment revenues. These negative effects were partially offset by higher service revenues (excluding roaming). Total revenue in our Systems Solutions operating segment decreased by 5.6 %, reflecting the coronavirus-induced decline of the IT market in Western Europe. The upward revenue trend in our growth areas public cloud and security was not sufficient to fully offset the declines in traditional IT and project business. Total revenue in our Group Development operating segment increased by 3.1 % year-on-year, thanks to operational growth at T-Mobile Netherlands B.V., The Hague, and at DFMG Deutsche Funkturm GmbH, Münster.

Deutsche Telekom AG reported income after taxes for the 2020 financial year of EUR 2.5 billion. Alongside the operating business, the development of business in the reporting year was affected by a large number of other factors, including capital repayments based on fair values, write-downs resulting from the impairment of the indirectly held investments in BT Group plc, London, and the write-ups on Hellenic Telecommunications Organization S.A., Athens. The latter were required under German GAAP due to improved earnings prospects. Furthermore, in connection with the realignment of the B2B telecommunications business, the Deutsche Telekom Global Carrier (DTGC) business area was transferred to Telekom Deutschland GmbH, Bonn, with retroactive economic effect as of January 1, 2020, as part of a spin-off with realization of hidden reserves.

Results of operations of Deutsche Telekom AG

Statement of income of Deutsche Telekom AG under German GAAP (total cost method)

millions of €

	2020	2019	Change	Change %	2018
Net revenue	**2,740**	**3,423**	**(683)**	**(20.0)**	**3,546**
Other own capitalized costs	9	7	2	28.6	7
Total operating performance	**2,749**	**3,430**	**(681)**	**(19.9)**	**3,553**
Other operating income	4,725	2,387	2,338	97.9	2,672
Goods and services purchased	(471)	(1,037)	566	54.6	(1,024)
Personnel costs	(2,291)	(2,326)	35	1.5	(2,537)
Depreciation, amortization and write-downs	(211)	(254)	43	16.9	(289)
Other operating expenses	(2,834)	(3,081)	247	8.0	(4,521)
Operating results	**1,667**	**(881)**	**2,548**	**n.a.**	**(2,146)**
Net financial income (expense)	1,245	3,131	(1,886)	(60.2)	6,488
Income taxes	(380)	(484)	104	21.5	(143)
Income after income taxes	**2,532**	**1,766**	**766**	**43.4**	**4,199**
Other taxes	(17)	(17)	0	0.0	(13)
Income after taxes	**2,515**	**1,749**	**766**	**43.8**	**4,186**

The positive operating results improved by approximately EUR 2.5 billion year-on-year. This increase was mainly due to an increase in other operating income of EUR 2.3 billion, a decline in goods and services purchased of EUR 0.6 billion, and a decrease in other operating expenses of EUR 0.2 billion compared with the prior year. A decrease of EUR 0.7 billion in revenue had an offsetting effect.

The year-on-year decrease in revenue of EUR 0.7 billion is largely attributable to the spin-off of the DTGC business area and mainly relates to fixed-network revenue.

The increase of EUR 2.3 billion in other operating income was mainly attributable to income of EUR 1.5 billion from a capital repayment based on fair values by T-Mobile Global Zwischenholding GmbH, Bonn, income of EUR 0.8 billion from the realization of hidden reserves in connection with the spin-off of the DTGC business area, and an increase of EUR 0.3 billion in income from derivatives primarily in connection with U.S. dollar contracts. A decrease of EUR 0.1 billion in income from cost transfers and reimbursements as well as a decline of EUR 0.1 billion in foreign currency translation gains, in particular, had a negative effect in the reporting year.

The write-ups on Hellenic Telecommunications Organization S.A. (OTE), Athens, in the amount of EUR 0.9 billion and on Deutsche Telekom Asset Management GmbH & Co. KG, Monheim, in the amount of EUR 0.1 billion, which were required under German GAAP due to improved earnings prospects, also had a positive effect in the reporting year. In the prior year, other operating income had included write-ups on Hellenic Telecommunications Organization S.A. (OTE), Athens, in the amount of EUR 0.9 billion, and on Ströer SE & Co. KGaA, Cologne, in the amount of EUR 0.1 billion.

The year-on-year decrease of EUR 0.6 billion in goods and services purchased is due primarily to the transfer of International Carrier Services in connection with the spin-off of the DTGC business area and relates to network access charges.

The decrease of EUR 0.2 billion in other operating expenses compared with the previous year was mainly attributable to a decrease of EUR 0.2 billion in expenses from derivatives in connection with U.S. dollar contracts.

Net financial income decreased by EUR 1.9 billion to EUR 1.2 billion. This was primarily due to a write-down in the amount of EUR 1.4 billion on CTA Holding GmbH, Bonn, as a result of the impairment of this company's indirectly held investment in the British BT Group plc, London, United Kingdom. Furthermore, net financial income was impacted by an increase of EUR 0.3 billion in net interest expense and a decline of EUR 0.2 billion in income related to subsidiaries, associated, and related companies.

Income related to subsidiaries, associated, and related companies, which declined by EUR 0.2 billion compared with the prior year, was positively affected in the reporting year in particular by profits transferred by Telekom Deutschland GmbH, Bonn, of EUR 3.6 billion (2019: EUR 3.7 billion), T-Mobile Global Zwischenholding GmbH, Bonn, of EUR 0.6 billion (2019: transfer of losses of EUR 17 thousand), DFMG Holding GmbH, Bonn, of EUR 0.2 billion (2019: EUR 0.3 billion), and GMG Generalmietgesellschaft mbH, Cologne, of EUR 0.2 billion (2019: EUR 0.2 billion). The transfer of the losses from Deutsche Telekom IT GmbH, Bonn, of EUR 0.8 billion (2019: EUR 0.7 billion), and from T-Systems International GmbH, Frankfurt/Main, of EUR 0.7 billion (2019: EUR 0.2 billion), had an offsetting effect.

Income related to subsidiaries, associated and related companies was impacted in particular by the operating business of the consolidated subsidiaries. The figure for the reporting year also included effects from a capital repayment based on fair values by T-Mobile Global Holding GmbH, Bonn, to T-Mobile Global Zwischenholding GmbH, Bonn, as well as from the write-downs by Telekom Deutschland GmbH, Bonn, and T-Systems International GmbH, Frankfurt/Main, on their shares in CTA Holding GmbH, Bonn.

The increase in the net interest expense of EUR 0.3 billion compared with the prior year was primarily the result of lower income from plan assets for pension obligations in the amount of EUR 0.2 billion and lower income from long-term loans to Group companies in the amount of EUR 0.1 billion.

Income after income taxes was particularly impacted by the aforementioned effects and increased by EUR 0.8 billion year-on-year in 2020.

Other tax expense of EUR 17 million combined with the aforementioned factors resulted in income after taxes of EUR 2,515 million in the 2020 financial year. Taking into account EUR 2,614 million in unappropriated net income carried forward, unappropriated net income totaled EUR 5,129 million.

Financial position of Deutsche Telekom AG

Balance sheet of Deutsche Telekom AG under German GAAP

millions of €

	Dec. 31, 2020	Dec. 31, 2020 %	Dec. 31, 2019	Change	Dec. 31, 2018
Assets					
Intangible assets	216	0.2	217	(1)	186
Property, plant and equipment	2,388	2.0	2,313	75	2,376
Financial assets	101,411	86.8	111,020	(9,609)	94,431
Noncurrent assets	**104,015**	**89.0**	**113,550**	**(9,535)**	**96,993**
Inventories	0	0.0	0	0	1
Receivables	8,180	7.0	6,695	1,485	22,325
Other assets	964	0.8	1,313	(349)	1,630
Cash and cash equivalents	3,201	2.7	2,076	1,125	680
Current assets	**12,345**	**10.6**	**10,084**	**2,261**	**24,636**
Prepaid expenses and deferred charges	437	0.4	463	(26)	522
Difference between plan assets and corresponding liabilities	9	0.0	13	(4)	7
Total assets	**116,806**	**100.0**	**124,110**	**(7,304)**	**122,158**
Shareholders' equity and liabilities					
Capital stock and reserves	53,028	45.4	53,021	7	53,015
Unappropriated net income	5,129	4.4	5,460	(331)	7,031
Shareholders' equity	**58,157**	**49.8**	**58,481**	**(324)**	**60,046**
Accruals for pensions and similar obligations	3,960	3.4	3,780	180	3,747
Tax accruals	412	0.4	411	1	238
Other accruals	2,591	2.2	2,602	(11)	2,377
Accruals	**6,963**	**6.0**	**6,793**	**170**	**6,362**
Debt	10,952	9.4	10,928	24	6,705
Remaining liabilities	40,594	34.8	47,776	(7,182)	48,904
Liabilities	**51,546**	**44.1**	**58,704**	**(7,158)**	**55,609**
Deferred income	140	0.1	132	8	141
Total shareholders' equity and liabilities	**116,806**	**100.0**	**124,110**	**(7,304)**	**122,158**

In addition to shareholders' equity, our financial position is mainly determined by financial assets as well as by receivables from and payables to Group companies. Loans recognized under financial assets as well as receivables from and payables to affiliated companies primarily resulted from financing relationships between Deutsche Telekom AG and its subsidiaries.

The balance sheet total decreased by EUR 7.3 billion year-on-year to EUR 116.8 billion.

The development of total assets was attributable in particular to the decrease of EUR 9.6 billion in financial assets and the decrease of EUR 0.3 billion in other assets. By contrast, receivables increased by EUR 1.5 billion and cash and cash equivalents by EUR 1.1 billion.

The decline in financial assets of EUR 9.6 billion year-on-year resulted in particular from repayments of loans to affiliated companies, mainly by T-Mobile USA, Inc., Bellevue, in the amount of EUR 8.5 billion, T-Mobile Polska S.A., Warsaw, in the amount of EUR 0.7 billion, and Telekom Deutschland GmbH, Bonn, in the amount of EUR 0.4 billion. Shares in affiliated companies, which rose by a total of EUR 0.2 billion, had an offsetting effect. This was due in particular to the increase in the carrying amount of the investment in Telekom Deutschland GmbH, Bonn, in connection with the spin-off of the DTGC business area at the fair value of the new shareholding of EUR 1.1 billion. In addition, write-ups led to an increase in the shares in Hellenic Telecommunications Organization S.A. (OTE), Athens, in the amount of EUR 0.9 billion and in Deutsche Telekom Asset Management GmbH & Co. KG, Monheim, in the amount of EUR 0.1 billion. The shares in affiliated companies were reduced by the write-down of EUR 1.4 billion on CTA Holding GmbH, Bonn, and the capital repayment of EUR 0.6 billion by T-Mobile Global Zwischenholding GmbH, Bonn.

The year-on-year increase in receivables of EUR 1.5 billion resulted in particular from a EUR 1.0 billion increase in financial receivables from affiliated companies, mainly from loans granted to Deutsche Telekom Europe B.V., Maastricht, in the amount of EUR 1.0 billion, and a EUR 0.7 billion increase in receivables from cash management.

The decrease in other assets of EUR 0.3 billion is attributable in particular to a EUR 0.2 billion decline in income tax receivables and a EUR 0.1 billion decline in receivables from cost reimbursements.

The development of total shareholders' equity and liabilities was mainly influenced by the decrease of EUR 7.2 billion in remaining liabilities and of EUR 0.3 billion in shareholders' equity. By contrast, accruals increased by EUR 0.2 billion.

The EUR 0.3 billion decline in shareholders' equity was primarily attributable to the dividend payment of EUR 2.8 billion for the previous year. Income after taxes for the 2020 financial year of EUR 2.5 billion had an offsetting effect on shareholders' equity.

The increase in accruals is largely attributable to a EUR 0.2 billion increase in pension obligations, in particular in connection with changes in discount rates.

Debt remained unchanged year-on-year at EUR 11.0 billion. In the reporting year, new bonds were issued in the amount of EUR 1.6 billion and repayments of treasury bills were made in the amount of EUR 0.4 billion. Liabilities to banks decreased by EUR 1.2 billion, mainly due to repayments of principal in the amount of EUR 1.6 billion. These were offset by loans of EUR 0.4 billion.

Remaining liabilities decreased by a total of EUR 7.2 billion year-on-year, due mainly to the decrease in financial liabilities to affiliated companies, particularly as a result of loan repayments of EUR 5.4 billion to Deutsche Telekom International Finance B.V., Maastricht. The borrowing of EUR 1.2 billion from T-Mobile Austria Holding GmbH, Vienna, had an offsetting effect. In addition, liabilities from cash management decreased due in particular to the capital repayment by T-Mobile Global Zwischenholding GmbH, Bonn, in the amount of EUR 2.1 billion, as well as to other liabilities by a total of EUR 0.7 billion.

Statement of cash flows of Deutsche Telekom AG under German GAAP

millions of €

	2020	2019	Change	2018
Income after taxes	**2,515**	**1,749**	**766**	**4,186**
Net cash (used for) provided by operating activities	(1,808)	17,760	(19,568)	4,409
Net cash provided by (used for) investing activities	11,587	(14,536)	26,123	1,940
Net cash (used for) provided by financing activities	(8,654)	(1,828)	(6,826)	(5,826)
Net change in cash and cash equivalents	**1,125**	**1,396**	**(271)**	**523**
Cash and cash equivalents, at the beginning of the year	2,076	680	1,396	157
Cash and cash equivalents, at the end of the year	**3,201**	**2,076**	**1,125**	**680**

Net cash used for/provided by operating activities changed year-on-year by EUR 19.6 billion, resulting in net cash used for operating activities of EUR 1.8 billion. The change resulted mainly from the intragroup restructuring of receivables from cash management to noncurrent loans, which had led to a high level of net cash provided by operating activities in the previous year. In the reporting year, the decrease in liabilities from cash management, which was due in particular to a capital repayment by T-Mobile Global Zwischenholding GmbH, Bonn, had a negative effect on net cash used for/provided by operating activities.

Net cash provided by investing activities in the reporting year was primarily attributable to repayments of medium- and long-term investments by subsidiaries of EUR 9.6 billion, mainly by T-Mobile USA, Inc., Bellevue, as well as a capital repayment by T-Mobile Global Zwischenholding GmbH, Bonn, in the amount of EUR 2.1 billion. Cash outflows for short-term loans amounting to EUR 1.0 billion and cash outflows to acquire properties in the amount of EUR 0.3 billion had an offsetting effect. Net cash provided by investing activities also included interest received of EUR 1.2 billion. In the previous year, net cash used for investing activities had been mainly impacted by cash outflows of EUR 17.9 billion to subsidiaries for medium- and long-term investments. In particular, repayments of medium- and long-term investments by subsidiaries in the amount of EUR 1.8 billion and interest received in the amount of EUR 1.5 billion had an offsetting effect.

Net cash used for financing activities changed by EUR 6.8 billion year-on-year to EUR 8.7 billion. Net cash used for financing activities in the reporting year resulted primarily from net repayments of current financial liabilities of EUR 2.9 billion, especially to Deutsche Telekom International Finance B.V., Maastricht, the payment of the dividend for the 2019 financial year of EUR 2.8 billion, and interest paid of EUR 3.0 billion. The year-on-year change mainly related to EUR 5.8 billion lower net borrowings of noncurrent financial liabilities and bullet payments of interest of EUR 1.6 billion in connection with the redemption of long-term zero-coupon bonds in the reporting year.

In all, this resulted in an increase in cash and cash equivalents of EUR 1.1 billion in the reporting year.

Risk management in hedge accounting

We use derivatives to hedge interest rate and currency exposures; i.e., exclusively for hedging purposes, not for speculative gains. In the process, we monitor the effectiveness of the hedges on a regular basis.

Corporate responsibility and non-financial statement

The outbreak of the coronavirus pandemic in 2020 clearly underscored the huge opportunities that digitalization offers in tackling societal challenges. Online shopping and contactless payments reduce the risk of infection, doctors offer consultations online, contact tracing apps help contain the pandemic – and, the world over, people are chatting with each other via live video. What is more, during the first lockdown people began working from home. Even in times of crisis, we remain committed to keeping everyone connected. SDG 10 STRUCTURE Our multi-billion investments in the network infrastructure have paid off throughout the pandemic: our networks were running stably even under substantially higher loads. SDG 9 STRUCTURE We fulfilled our responsibility as an employer by introducing comprehensive rules and supportive measures to help employees work from home SDG 8 EMPLOYEES, while safeguarding service for our customers in parallel. Our home office configurator helps small and medium-sized businesses, for example, to develop customized solutions for staff working from home. Likewise, our Digital Schutzpaket Business (digital business protection package) keeps sensitive customer data safe. We are also furthering the digitalization trend in schools: not only with fiber-optic connections, but also by providing support to schools in lodging applications for funding. SDG 4 RELATIONSHIPS In 2020, T-Mobile US helped set up homeschooling infrastructure for more than 500,000 students in the United States. In its home country, T-Mobile Austria provided 10,000 students with free data packages for online study. We also helped ease the impact of coronavirus on society with a range of further activities. The measures in question include providing additional data volume free of charge, gifting smartphones to retirement and care homes SDG 10 RELATIONSHIPS, and establishing a hotline to support Nebenan.de, a neighborhood help portal. During the crisis, we have proved we are a reliable partner. That is why F.A.Z.-Institut, a company specializing in management, media, and marketing information, honored us with a "heroes of the crisis" award in 2020.

But digitalization can help us tackle other challenges, such as protecting our climate. A key prerequisite for this is that increasing use of the internet does not lead to higher CO_2 emissions. In the reporting year, we reached a milestone on the path toward achieving our ambitious climate goals: since the start of 2020, our customers in Germany have been surfing on Deutsche Telekom's green network, which is powered solely by electricity from renewable sources. We also continued to pursue our other sustainability goals. As part of our "We care for our Planet" program, we initiated various measures to reduce CO_2 emissions and conserve resources. SDG 15 ENVIRONMENT On top of that, we positioned ourselves with a broad-based campaign against online hate speech and for more digital civil courage.

Creating transparency

We have been transparently reporting on our corporate responsibility (CR) activities for more than 20 years: on our website, in the "We Care" magazine, in our CR report, and in our Annual Report. Since the 2016 financial year, we have also explained how our core business contributes to achieving the UN Sustainable Development Goals (SDGs), which have been set as part of the 2030 Agenda.

For further information, please refer to the section "Sustainable Development Goals."

Since the 2017 reporting year, we have published this non-financial statement (NFS) as part of the management report in accordance with the CSR Directive Implementation Act. In selecting the content for the NFS 2020, we took both the statutory requirements and the results of our materiality analysis into account. SDG 17 RELATIONSHIPS The concepts in this NFS are described on the basis of our long-standing CR reporting and in line with the GRI standards. We will publish our 2020 CR report at the end of March 2021. This will also satisfy the additional transparency expectations of our stakeholders.

The Supervisory Board of Deutsche Telekom AG is responsible for the review of the content of the NFS. In the reporting year, it did this with the support of PricewaterhouseCoopers GmbH Wirtschaftsprüfungsgesellschaft (independent auditor) in the form of a limited assurance engagement. This audit was based on the International Standard on Assurance Engagements ISAE 3000 (revised). Unless otherwise stated, all disclosures in this NFS apply in equal measure to the Group and the parent company. To avoid repetition within the management report, we refer to further information provided in other sections wherever relevant. References to disclosures not contained in the combined management report are provided as background information; these disclosures are not part of the NFS and thus are not covered by the review.

The independent judging panel for the Building Public Trust Awards 2020, comprising experts from academia, industry, and rating agencies, selected us to receive the award for best climate impact reporting among DAX 30-listed companies. PricewaterhouseCoopers has been awarding the Building Public Trust Award since 2016.

Explanation of the business model

We are one of the leading telecommunications companies worldwide. We offer our consumers fixed-network/broadband, mobile, internet, and internet-based TV products and services, as well as ICT solutions for our business and corporate customers.

For further information on our business model, please refer to the sections “Group organization” and “Group strategy.”

Strategic and organizational approach to sustainability

We see ourselves as a responsible company and have made that a core element of our Group strategy. We are committed to implementing sustainability along our entire value chain – and to playing an important role in meeting today’s environmental, economic, and social challenges. We are expressly committed to the principles of the United Nations Global Compact, the German Sustainability Code, and the Code of Responsible Conduct for Business. Furthermore, we support the SDGs of the United Nations (UN), in particular contributing to the following goals: 3 Good health and well-being, 4 Quality education, 5 Gender equality, 8 Decent work and economic growth, 9 Industry, innovation and infrastructure, 11 Sustainable cities and communities, 12 Responsible consumption and production, and 13 Climate action.

Our CR strategy includes three fields of action: “Connected life and work – enabling a sustainable lifestyle in the digital world,” “Connecting the unconnected,” and “Low-carbon society.” In addition, the following topics are of particular importance within our sustainability management system: data security and data privacy, digitalization, sustainable supply chains, circular economy and resource decoupling, as well as being a responsible employer.

Our Board of Management bears overall responsibility for our CR goals, discussing and making decisions on key CR-related issues. The Group Corporate Responsibility (GCR) unit develops Group-wide policies and guidelines. Its aim is to further develop our corporate culture, particularly in terms of sustainable innovation and social responsibility. The CR managers from the different business units and national companies are responsible for implementing our CR strategy and work together in the international CR Manager Network. GCR is also advised by the CR Board, which is composed of the heads of the Group’s key areas. Our values and basic principles are anchored in our Guiding Principles, the Code of Conduct, the Code of Human Rights & Social Principles, and other subject-specific policies. The cornerstones of our sustainability management activities are formally set out in our CR Policy, which is binding for all Group units. As part of our CR controlling activities, we record environmental, social, and governance (ESG) data and performance indicators. We use this data primarily to calculate our Group-wide ESG KPIs (key performance indicators), which we use to measure and control our CR performance. In some cases, the KPIs and other metrics can also be linked to the SDGs to show the progress we are making in the SDG focus areas.

The Socially Responsible Investment ESG KPI indicates the percentage of Deutsche Telekom AG shares held by investors who show a predominant or at least partial concern for environmental, social, and governance criteria in their investment strategy. And our commitment to greater sustainability is paying off: As of September 30, 2020, around 13 % of all T-Shares were held by investors who show at least a partial concern for environmental, social, and governance criteria, and 9 % were held by investors who manage their funds primarily in accordance with aspects of socially responsible investment (SRI). In the reporting year, our share was added to a further sustainability index: the Euronext Vigeo World 120 from Vigeo Eiris. SDG 8 FINANCE

Listing of the T-Share in sustainability indexes/ratings

Rating agency	Indexes/ratings/ranking	2020	2019	2018	2017	2016
S&P SAM	DJSI World	✔	✔	✔	✔	✔
	DJSI Europe	✔	✔	✔	✔	✔
	S&P Global 1200 ESG	✔	✔	–	–	–
	S&P Europe 350 ESG	✔	✔	–	–	–
	S&P Europe Developed LargeMidCap ESG	✔	✔	–	–	–
CDP	STOXX Global Climate Change Leaders	✔	✔	✔	✔	✔
	Supplier Engagement A-List	✔	✔	✔	✖	✔
MSCI	ESG Universal Indexes	✔	✔	✔	✔	–
ISS-oekom	"Prime" (Sector Leader)	✔	✔	✔	✔	✔
Bloomberg	Gender Equality Index	✔	✔	✔	✖	✖
Sustainalytics	STOXX Global ESG Leaders	✔	✔	✔	✔	✔
	EURO STOXX 50 ESG	✔	✔	–	–	–
	iSTOXX 50 SD KPI	✔	✔	✔	✔	✔
	UN Global Compact 100	✔	✔	✔	✔	✔
FTSE Financial Times Stock Exchange	FTSE4Good	✔	✔	✔	✔	✔
Vigeo Eiris	Euronext Vigeo World 120	✔	✖	✖	✖	✖
	Euronext Vigeo Europe 120	✔	✔	✖	✖	✖
	Euronext Vigeo Eurozone 120	✔	✔	✖	✖	✖

✔ Listed successfully ✖ Not listed – Index did not exist in the relevant year

We are making our contributions towards solving social challenges measurable. To this end, we have developed a process and methodology to evaluate the external impact of selected products, solutions, and measures. This helps us to keep our key sustainability activities results-oriented and to make our contribution to achieving the SDGs visible. SDG 8 FINANCE

Detailed information will be published in our 2020 CR report.

Process for determining significant topics

We use a comprehensive materiality process to determine the topics that are relevant both for the direction of our sustainability strategy and for our reporting. For instance, we perform a document analysis in order to analyze aspects such as existing legislation and the expectations of our stakeholders, e.g., the capital markets. In the reporting year, we validated the results of this analysis by conducting interviews with independent experts on topics such as the future of work, sustainable business models, and values and responsible corporate governance. The results of the materiality analysis from the previous year were confirmed. Consequently, there is no need to include further matters in the NFS for 2020.

Detailed information on our approach will be published in our 2020 CR report.

As part of our comprehensive risk and opportunity management system, we determine existing and potential risks and opportunities arising from environmental, economic, or social aspects, and from how our Company is managed. Topics such as climate protection, suppliers, data privacy and data security, health, and the environment involve potential risks, which we have outlined in the section "Risk and opportunity management." We maintain this practice to provide the transparency our stakeholders expect, even if the risk assessment has found that these topics have a "low" risk significance and therefore do not need to be rated as "very likely severe" in the meaning of the CSR Directive Implementation Act. The present NFS focuses on these risks and opportunities in relation to the relevant aspects.

For further information, please refer to the section "Risk and opportunity management."

Aspect 1: Environmental concerns

One field of action in our CR strategy is "Low-carbon society." It not only expresses our commitment to minimize the impact our business activities may exert on the climate, but also to tap into the opportunities for sustainable development offered by digitalization. When used properly, it can also make a valuable contribution to saving energy and thus slowing down climate change.

For further information, please refer to the section "Deployment of ICT products to the benefit of society."

In order to handle the rising tide of regulatory requirements, especially from the EU, we established an internal, cross-divisional green deal task force in 2020. The purpose of the task force is to ensure that necessary measures and processes can be implemented without delay and to create the necessary transparency.

Our holistic environmental management system is based on the international ISO 14001 standard. A Group-wide environmental guideline brings together the main voluntary commitments to which the Group as a whole is subject. You can access this policy on our Group website.

Climate protection and resource conservation SDG 13 ENVIRONMENT

Our investments in the network build-out make us one of the biggest investors in the industry. Rising demand for faster data services with full-coverage availability must not lead to an increase in CO_2 emissions and thus accelerate global warming. That is why, by increasing energy efficiency – for instance at our data centers for network operations – we ensure that our energy consumption grows to a much lesser extent than the volumes of data we transmit. We also use renewable energy sources to decouple energy consumption from CO_2 emissions.

For about the last two decades, climate protection has been steadily increasing in importance at Deutsche Telekom. Our Group-wide climate protection strategy covers the following aspects: “Emissions from the value chain,” “Renewable energy sources,” “Energy efficiency,” and “Enablement: positive climate-protection effects on our customers.” In 2019, the Group Board of Management adopted new, ambitious climate goals:

a. By the end of 2021, we intend to source 100 % of the electricity used by the Group from renewables (Scope 2).
b. By 2030, we plan to reduce our CO_2 emissions (Scope 1 and 2) by 90 % (compared to 2017). We want to achieve this not only by switching to renewably sourced electricity, but especially by implementing energy efficiency measures.
c. Over 80 % of our CO_2 footprint arises from the production and use of our products. We plan to achieve a 25 % reduction per customer in these emissions by 2030 (versus 2017) (Scope 3, categories: purchased goods and services, capital goods, use of sold and leased assets). We maintain a close dialog with the suppliers in order to reduce the emissions generated during production and to ensure the products manufactured consume less energy during the utilization phase.

Since 2019, we have been a member of the international industry initiative GSMA. Within this initiative, we undertook to reduce our CO_2 emissions (Scope 1, 2) to “net zero” by 2050 at the latest and thus make our business operations completely climate neutral. This undertaking within the framework of the GSMA industry initiative has since been expanded to include Scope 3 emissions, the goal being to eliminate the industry’s direct and indirect emissions altogether by 2050 at the latest. But in our view this target is not ambitious enough. That is why we intend to assess in 2021 whether we can reach climate neutrality faster.

We developed our new climate goals in line with the current scientific and political conditions. The Science Based Targets initiative (SBTi) has confirmed to us that our climate protection targets contribute to compliance with the Paris Climate Agreement. The SBTi also gave a positive assessment of the targets of our subsidiaries in the United States and Hungary. In order to achieve these targets, T-Mobile US has concluded long-term agreements with wind and solar park operators, which will give the park operators the necessary investment certainty. Consequently, there are now five wind parks and three solar parks in the United States that are either already connected to the network or are set to be connected in the course of 2021. In Germany, too, a wind park is set to be added to the network in 2021 as part of a long-term power purchase agreement. SDG 7 ENVIRONMENT

We have reached our climate goal, adopted in 2013, to reduce the Group’s CO_2 emissions by 20 % (compared to 2008, excluding T-Mobile US). To differing extents, 40 business units in 29 countries contributed toward achieving this goal. The measures taken were varied, e.g., direct procurement of green electricity, enhancing energy efficiency, and acquiring guarantees of origin.

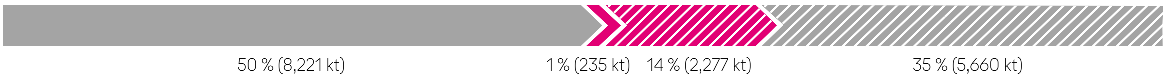
We calculate our CO_2 emissions across the Group in line with the market-based method of the Greenhouse Gas (GHG) protocol. The standard distinguishes between three CO_2 emissions categories (Scope 1, 2, and 3). We report on these each year as part of the CDP and in our CR and Annual Reports. The successful business combination of T-Mobile US and Sprint to form the larger T-Mobile US in 2020 also had a clear impact on our environmental data, with absolute energy consumption rising together with the resulting emissions.

> Detailed information on year-on-year data trends will be published in our 2020 CR report.

The following graphic visualizes the emissions of the different scopes resulting from our business activities, shown as CO_2-equivalents emissions (CO_2e emissions).

CO_2e emissions (Scope 1–3)

Deutsche Telekom Group in 2020 in % and kilotons (kt) of CO_2e



Scope 3 emissions from upstream activities:
Transport services, products and services purchased, capital goods, production waste, energy and fuel upstream chains, business travel, and journey to work

Scope 1 emissions from Deutsche Telekom's own activities:
Operation of Deutsche Telekom's systems, buildings, and vehicles

Scope 2 emissions from energy procured:
Generation of electricity and district heating procured by Deutsche Telekom

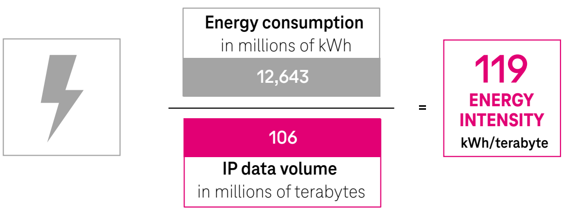
Scope 3 emissions from downstream activities:
Transport of products sold to the customer, use of products sold or leased, and disposal and recycling of products sold

The PUE (power usage effectiveness) metric serves as one indicator for enhancing the energy efficiency in our data centers. We determine this metric using the method recommended by The Green Grid Association, which takes the total energy consumed by data centers into account, not only that used to operate the servers. In 2020, the global PUE metric for our T-Systems data centers was 1.61. Our high-availability, state-of-the-art data centers operated by T-Systems in Germany are designed with even greater efficiency in mind, and as such are capable of achieving a PUE of 1.3. From 2008 to 2020, we reduced the average PUE metric for data centers in Germany from 1.85 to 1.50.

We determine the effectiveness of our climate protection measures using key performance indicators (KPIs). The KPIs Energy Intensity and Carbon Intensity for Deutsche Telekom (fixed-network and mobile entities) are shown in the following graphics. Both KPIs reflect our energy consumption and our CO_2 emissions in relation to the volume of data transmitted, thus demonstrating how our network's energy and emissions efficiency has developed in practice. The result for the Energy Intensity KPI is 119 and 23 for the Carbon Intensity KPI. For the Group as a whole in Germany, the Energy Intensity KPI stands at 60 and the Carbon Intensity KPI at 3.

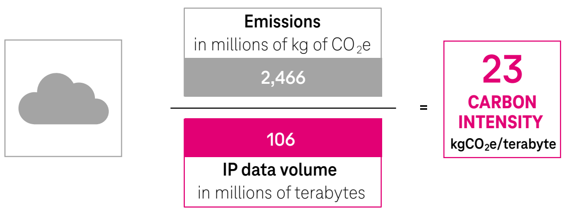
Energy Intensity ESG KPI

Deutsche Telekom Group in 2020



Carbon Intensity ESG KPI

Deutsche Telekom Group in 2020



Other metrics of importance to us are the Renewable Energy KPI and the Enablement Factor ESG KPI. The Renewable Energy KPI shows how much of our Company's overall electricity consumption is obtained from renewable sources. In 2020, this amounted to 58 % Group-wide and 100 % in Germany. When calculating this KPI, we look at direct purchases, guarantees of origin, renewable energy certificates, the renewable energy we produce ourselves, and the proportion of renewable energy used across the countries. We use the Enablement Factor ESG KPI to calculate the positive CO_2 effects facilitated for our customers through using selected products.

For further information, please refer to the section "Deployment of ICT products to the benefit of society."

In order to effectively curb climate change, many relevant players must work together, which is why we participate in national and international associations and organizations, such as the Global e-Sustainability Initiative. We are also working systematically on improving climate protection throughout our supply chain. Since 2016, the CDP supplier engagement rating has assessed how well companies have integrated the topic of climate protection into their supply chains. In 2020, we were awarded an A rating by CDP and included on its Supplier Engagement Leader Board. Almost 70 % of our procurement volume is covered by the participation of our suppliers in CDP's 2020 supply chain program. SDG 17 ENVIRONMENT

Last but not least, handling valuable resources efficiently also plays a vital role in a holistic approach to ecological responsibility. In 2020, our existing "Stop wasting – start caring!" initiative was integrated into "We care for our Planet," an end-to-end environmental program approved by the Board of Management in 2019. Whether in our Telekom shops, with our products and networks, or in terms of mobility – we have adopted an array of measures to conserve resources. SDG 15 ENVIRONMENT For instance, energy-saving initiatives and improvements to our buildings helped us to cut our power consumption by around 137 GWh in 2020 – enough to satisfy the annual electricity needs of over 34,000 private households. What is more, all of Deutsche Telekom's own products have had sustainable packaging since the end of 2020. We developed corresponding sustainability criteria precisely for this purpose. In addition, over 25 % of the packaging of new products we source from our suppliers already meets these criteria. SDG 12 ENVIRONMENT We were also able to save 263 metric tons of CO_2 through our subsidiary Comfortcharge's operation of rapid-charging stations for electric vehicles. That is the equivalent of the CO_2 emissions produced by a passenger car on a journey of 815,000 kilometers. One of the Group's goals is to increase the proportion of electric vehicles in its fleet. Currently, around 10 % of the new vehicles ordered are electric. Various measures have been agreed to significantly increase that share in the coming years. Above and beyond that, the focus in 2020 was on expanding our "We care for our Planet" program and providing it with an international network. KPIs were developed for each component of the initiative, which will feed into our ESG KPIs. These KPIs help us measure our progress and also enhance public transparency of what we do.

For further information on the progress of our environmental program and on our KPIs, please refer to the 2020 CR report.

Conserving resources is also a goal of the Green Pioneers initiative launched by our employees. Thus far, 250 employees from around 45 locations in Germany have joined the initiative. Our Green Pioneers play a proactive role within the workforce, promoting awareness of resource efficiency at the workplace and providing impetus for our core business – and they do so voluntarily, on top of their professional duties. In 2020, some Green Pioneers held courses on environmental issues for their colleagues, with more than 700 employees in total taking part. Other Green Pioneers organized activities on sustainable mobility in the reporting year, such as "Cycling to work" and "Cycling at lunchtime." These two cycling campaigns alone helped save more than 50,000 kg of CO_2 by the end of September 2020. Similar grassroots initiatives by our employees have been launched at our national companies, like T-Mobile Polska in Poland and OTE/Cosmote in Greece. Projects to conserve resources, e.g., campaigns to collect and recycle mobile phones and to avoid plastic waste, have also been implemented at our national companies. SDG 15 EMPLOYEES

Aspect 2: Employee concerns

With their commitment, expertise, and high performance, our almost 230,000 employees ensure that – even during the ongoing coronavirus pandemic – we are always there for our customers, our network remains stable, and the Company can grow and pave the way for the digital society. They are crucial to our business success. Six Guiding Principles, representing our values, form the cornerstones for collaboration within our Company. We have defined our strategic HR priorities in line with the motto: "Supporting people. Driving performance." We attach great importance to employee involvement and fair behavior toward colleagues, promote diversity, and engage in systematic health management. SDG 8 EMPLOYEES

For our Guiding Principles and further information about our HR work, please refer to the section "Employees."

Collaboration with employees' representatives and trade unions SDG 17 EMPLOYEES

Digitalization is fundamentally changing the way we work together. Employees are expected to demonstrate greater flexibility, social skills, and autonomy, to continue learning throughout their lives, and to work with greater independence. We have made it our goal to support our employees in this transformation – and to help them not only manage change, but also take an active role in shaping it.

Codetermination rights play a key role in the digital transformation. Together with employees' representatives and trade unions, we want to create the working world of the future – with an eye to the needs of our workforce and the success of our Company. 86 collective agreements were concluded with the trade union in the course of 2020. In the midst of the coronavirus pandemic, we negotiated a new collective agreement in record time at the end of March 2020. Among other things, the agreement extended protection against dismissal and contained provisions on short-time work. In the case of employees affected by short-time work, such as those working in the Telekom shops, we increased the short-time work allowance to 85 % of the gross salary. The Germany-wide agreement covers 60,000 employees, trainees, and students on dual study programs.

Our dealings with the employee representatives and trade unions also concentrated on harmonizing remuneration systems across Germany. To this end, grading policies and processes were standardized. As the underlying laws and contracts vary from country to country, codetermination matters are managed locally with trade unions and employees' representatives. Group management is generally involved in issues of particular importance.

The works councils, central works councils, and Group Works Council represent the interests of Group employees in Germany. Our partner representing the employees' interests on a European level is the European Works Council (EWC). We also have executive staff representation committees and representatives of disabled employees at unit, company, and Group level. The EWC has been one of our established key dialog partners for many years, representing the interests of Group employees in countries within the European Union and the European Economic Area. The EWC has 32 seats, 31 of which are currently occupied (as of December 31, 2020). Collective bargaining plays an important role and has a long tradition at our Company, a fact made clear by the percentage of employees covered by collective agreements. As of December 31, 2020, 72 % of employees in Germany were covered by collective agreements. We record the Group-wide coverage rate every two years. As of December 31, 2020, it stood at just under 46 %.

We carefully monitored trade union matters in the United States over the course of 2020. The responsibility for national human resources management matters in the United States lies with T-Mobile US' management. This responsibility is assumed with a great deal of commitment and accompanied by excellent customer satisfaction results. Across the globe, Deutsche Telekom respects the rights to freedom of association and collective bargaining in accordance with national law. This naturally also applies to the United States, with each employee at T-Mobile US entitled to form or join a trade union. At the same time, employees are also free to choose not to do so. T-Mobile US will not exert any influence in this respect, neither favoring nor discriminating against employees because of a decision they have made.

Collaboration with employees' representatives is founded on our commitment to trusting cooperation – anchored in our Group-wide Employee Relations Policy, which sets out twelve core elements describing what we stand for as an employer around the world. The policy also describes our aspiration with regard to the following HR topics: virtual working, employee development, responsible handling of changes, health and sustainability, fair pay, work-life balance, leadership, diversity, the prohibition of discrimination, and how we communicate and work together with employees' representatives. Our Code of Human Rights & Social Principles policy statement also includes a voluntary commitment to safeguarding the freedom of association and the right to collective bargaining (in compliance with national law in each case).

Our employee survey, carried out every two years, is a key indicator of the relationship between our Company and its workforce. We supplement it with pulse surveys, which give us a snapshot of the mood across the Group twice a year.

For further information, please refer to the section "Employees."

Diversity and equal opportunity SDG 10 EMPLOYEES

People from some 150 countries work successfully together at Deutsche Telekom. They all bring their diverse skills and cultural characteristics to the workplace. Respecting the individuality of our employees and harnessing their diversity for our joint success is just as important for our Group as developing a shared corporate culture. That is why the Human Resources and Legal Affairs Board of Management department includes a Diversity team. Our Group-wide Diversity Policy, six Guiding Principles, the Employee Relations Policy, and the Code of Human Rights & Social Principles policy statement form the foundation of our commitment to diversity. We are also a founding member of the Diversity Charter corporate initiative. Developments in the proportion of women in leadership positions and serving on the supervisory boards are reported to and discussed by the Board of Management on an annual basis.

We offer our employees a wide variety of options to grow professionally and achieve their potential – regardless of their gender, age, sexual orientation, state of health, ethnic background, religion, or culture. These include mentoring programs, flexible working models, childcare services, advice for those caring for loved ones, and an action plan for inclusion. In various training courses, we shine a light on unconscious bias in order to raise employees' awareness of hidden prejudices. Last but not least, we support the many employee networks at Deutsche Telekom, e.g., in Germany Magenta Pride, Women@telekom, the Fathers' Network, or the Network for International Employees.

In Germany, for example, our collective agreements on remuneration and other matters reached with the trade unions ensure transparent, gender-neutral compensation. We meet the requirements set out in the Act to Promote Transparency of Pay Structures by publishing a remuneration report every five years – most recently in the 2017 financial year.

For further information, please refer to the section "Employees."

Occupational health and safety SDG 3 EMPLOYEES

The coronavirus pandemic left its mark on 2020. We implemented comprehensive hygiene plans and initiated many other measures to protect our employees' health.

For further information, please refer to the section "Employees."

Measures that promote health within the Company not only help individual employees and ensure long-term business success, but also have positive effects beyond that on society as a whole. We use holistic health management to take on social responsibility and promote a proactive culture of health. We support our employees in maintaining their health and occupational safety with a host of target audience-specific measures and extensive prevention programs. We consider the statutory requirements to be only the minimum standard we must achieve. Our corporate occupational health and safety measures are effectively incorporated into our structures via certified management systems and appropriate policies and guidelines. We support the Group-wide approach with a uniform international health, safety, and environmental management system based on the international DIN ISO 45001, DIN EN ISO 14001, and DIN EN ISO 9001 standards for occupational safety and health, environmental protection, and quality.

The Board of Management bears overarching responsibility for safeguarding health, occupational safety, and the environment. We pool together and manage our programs at Group level, with on-site health and safety managers responsible for putting them into practice. We systematically evaluate the programs to ensure they are effective. The health rate, for instance, is reported to the Board of Management once a year. In addition, we review the results of our employee survey, evaluating stress prevention measures under collective agreements, health insurance reports, and competitor benchmarks. We analyze this data each year to derive measures that exceed the statutory requirements. Raising awareness, prevention, and encouraging individual responsibility are high priorities at our Company.

Group-wide initiatives serve to promote health awareness and health literacy among our employees. On completion of the employee survey, for example, all teams across 29 countries are issued recommendations, along with measures to be implemented on the basis of their particular health index rating. In Germany, a range of services are available to employees to promote health in the workplace, including comprehensive check-ups, colon cancer screenings, and flu shots. The program also includes courses on nutrition, exercise, and relaxation (stress prevention, mindfulness, etc.). Due to the coronavirus pandemic, many courses were held online in 2020. In addition, with our Germany-wide employee and executive advisory service, we offer a portfolio of support services in the area of psychosocial health, but also crisis prevention and expert advice in the event of psychosocial crises and extreme incidents. Throughout 2020, occupational medicine specialists were available to answer employees' medical questions with regard to coronavirus.

Standards in Germany serve to improve occupational safety by regulating aspects such as safe, ergonomic environments in buildings and vehicles. In addition to services available to all employees, there are also target group-specific measures, e.g., driver safety training for certain areas of work. Our aim is to promote employees' health, boost their motivation, improve the health rate, and continue to reduce the accident rate.

A variety of key figures demonstrate the effectiveness of our corporate health management services. The health rate, including long-term illnesses at Deutsche Telekom in Germany was 95.0 % in 2020 (prior year: 94.0 %). Excluding long-term illnesses, the health rate in 2020 stood at 96.5 % (prior year: 95.5 %). The health rate is reported to the Board of Management at the end of each quarter. Our aim for 2020 was to bring the Group-wide health rate up to 95.9 % (excluding long-term illnesses). The total number of work-related accidents continued to decline in the reporting year in comparison with the previous year. With 3.8 accidents (resulting in over three days of absence) per thousand employees, the accident rate in Germany was well below the industry average. The Group-wide health index – calculated in 29 countries as part of the last employee survey in 2019 – remained constant at 3.6 (on a scale from 1.0 to 5.0). The next survey is scheduled for 2021.

Aspect 3: Social concerns

Access to state-of-the-art information technology is key to participating in the information and knowledge society. Our promise with the #TAKEPART brand campaign is to enable as many people as possible to participate – also and especially in times of crisis. We are delivering on that promise with an array of different activities. In this context, the security of our customers' data is of prime importance. But the internet is also supposed to be a space in which everyone can feel safe and where we interact on the basis of democratic principles. That is why we are actively pushing for a positive culture of online debate, promoting the competent use of ICT, and making a stand against hate speech and for digital civil courage.

For further information on our corporate identity and our Guiding Principles, please refer to the sections "Group organization" and "Employees."

Deployment of ICT products to the benefit of society SDG 12 FINANCE

During the coronavirus pandemic, the internet has enabled us to physically distance yet still stay close to others. In 2020, we provided practical assistance with various solutions and campaigns. In Germany, for instance, we gave our customers free data volumes under their plans. What is more, together with SAP we developed a coronavirus tracing app (Corona-Warn-App) on behalf of Germany's Federal Government. As of December 2020, the app had been downloaded over 23 million times. Many of our national companies, too, were able to provide rapid solutions. T-Systems Iberia, our national company in Spain, for example, cooperated with Mercabarna, a Spanish food wholesaler, to develop an app that links up supermarkets, social welfare organizations, and logistics companies in a digital marketplace. The idea behind the app was to get donations of food quickly to where they are urgently needed in Spain during the pandemic.

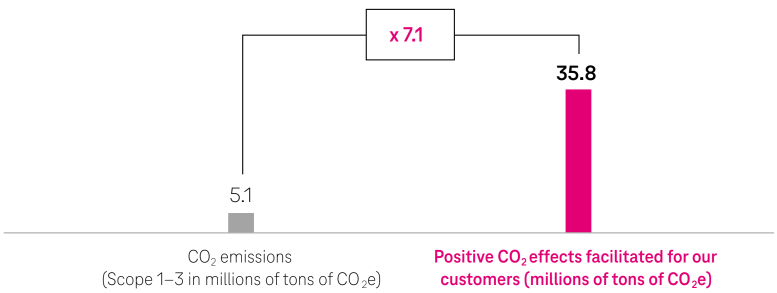
We can use our products, services, and activities to contribute to tackling many environmental and social challenges, as was made clear in a comparison with the 17 sustainability goals (SDGs) adopted by the United Nations. For instance, ICT solutions can help reduce resource consumption in agriculture and increase harvests, shape cities up for the future in terms of sustainability, make mobility more sustainable, stabilize power supply grids, or improve access to education and medical care – areas of application that offer market opportunities for our Company. In order to evaluate the concepts described in this NFS, it is important to also look to the opportunities digitalization opens up for sustainable development. For this reason, we are addressing the topic here, even though it is not required under the CSR Directive Implementation Act.

For further information on our sustainability risks, please refer to the section "Risk and opportunity management – Risks and opportunities."

Using the Sustainable Revenue Share ESG KPI, we determine how much revenue (excluding T-Mobile US) we generate from products that make a contribution to sustainability. In 2020, this share amounted to just over 44 %. For the Enablement Factor ESG KPI, we also calculate the positive CO_2 effects facilitated for our customers through using selected products. We combine this figure with our own CO_2 emissions to determine the enablement factor, which we use to measure our overall performance in relation to climate protection. According to this figure, the positive CO_2 effects facilitated for our customers in Germany were 610 % higher in 2020 than our own CO_2 emissions (enablement factor of 7.1 to 1). The substantial increase against the prior year (enablement factor of 2.4 to 1) is another consequence of the coronavirus pandemic; it results largely from the increased use of our web- and video-conferencing tools due to the growing number of people working from home and home schooling.

Enablement Factor ESG KPI

Deutsche Telekom Group in Germany in 2020



Sustainable products are another key competition factor at our Company. In order to highlight these sustainability benefits to our customers, we have suitable products certified by recognized environmental labels. The majority of Telekom Deutschland's fixed-network devices and media receivers, for example, carry the Blue Angel seal of approval, which was also awarded to the joint system of Telekom Deutschland and Teqcycle for taking back cell phones.

We also use our "we care" label to identify products, services, measures, and initiatives that offer ecological or social sustainability added value, e.g., in the Environment category, our green network in Germany and our reusable carry bags. Further information on the second category of the "we care" label – Digital participation – can be found in the next two sections. SDG 12 ENVIRONMENT

Detailed information on this will be published in our 2020 CR report.

Network access and digital responsibility

All around the world, having access to state-of-the-art information technologies is a precondition for economic performance and participation in a knowledge and information society. That is why we continue to rapidly expand our infrastructure and improve transmission speeds with new, secure technology. SDG 8 FINANCE

Demand for faster data services with full-coverage availability is growing continuously. We invested around EUR 17 billion (not including spectrum investment) primarily in building and operating networks in Europe and the United States, with around EUR 5.5 billion of this figure earmarked for Germany alone. Hence, the majority of the Group's investment volume in Germany is for the build-out of broadband networks. These investments have already paid off – during the coronavirus pandemic, for example, our network was running stably despite increased data traffic. This build-out is based on the goals of our Europe-wide integrated network strategy, which we use to help achieve the EU Commission's network build-out targets and the Federal Government's Digital Agenda and broadband strategy. Founded on two pillars – building out mobile networks and rolling out optical fiber – our strategy sets out, among other elements, to upgrade our mobile networks with 4G/LTE technology so as to offer greater network coverage with fast mobile broadband. In the reporting year, preparations were made to decommission the existing 3G network on June 30, 2021. By the end of 2020, we already covered more than 98.7 % of German households with LTE. We also pushed ahead with the 5G build-out in Germany in 2020: by the end of the year, two thirds of the population had been granted access to the new technology. In 26 cities across Germany, the 5G network is operating in the 36 GHz band, at top speeds of up to 1 Gbit/s (as of the end of 2020). At the end of the reporting year, our fixed network provided around 36 million households with fiber-optic-based technology. In addition to FTTH build-out and vectoring technology, we are using other innovative products, such as our hybrid router, which combines the transmission bandwidths of fixed-network and mobile communications, thus attaining higher transmission speeds – particularly in rural areas. We also moved forward with the build-out of fiber right to the home (FTTH) in the reporting year, connecting a further 600,000 households to the fiber-optic network in 2020 using this network technology. Thus a total of more than two million households in Germany now have the option of a direct connection to Deutsche Telekom's fiber-optic network. SDG 9 STRUCTURE

For further information about our build-out targets, please refer to the section "Group strategy."

In general, we want to make our network infrastructure and our products as efficient, environmentally friendly, and harmless to health as possible. That is why we are committed to addressing the topic of mobile communications and health responsibly. In the context of the award of the 5G licenses, there is public debate around the potential effects of 5G on health. We have been providing information on the scientific evidence regarding mobile communications and health for more than 20 years now. Together with Telefónica Deutschland, Vodafone, and 1&1, we also support the information platform www.informationszentrum-mobilfunk.de. This platform provides expert, evidence-based information on mobile communications topics subject to controversial public debate, such as health, research, technology, benefits, and applications. In 2020, the information platform collaborated with the German Association of Towns and Municipalities to publish a series of information brochures on network build-out for municipalities. We adopted our Group-wide EMF Policy (EMF being short for "electro-magnetic fields") back in 2004. It defines standard requirements – which considerably exceed the applicable national legal requirements – for addressing mobile communications and health-related matters. SDG 3 ENVIRONMENT

For further information, please refer to the section "Risk and opportunity management."

Responsibility for shaping the digital transformation has to be assumed by society as a whole. Our Board of Management plays an active role in this discussion, which entails looking at matters such as how we can use artificial intelligence (AI) responsibly. AI is a well-hidden feature in an ever-growing number of ICT products and services. It opens up opportunities, but also presents challenges. Back in 2018, under the auspices of Group Compliance Management, we were one of the first companies worldwide to adopt AI guidelines on digital ethics. These guidelines provide a framework for a responsible approach to AI. In 2020, we incorporated the requirements formulated in our AI guidelines into our Privacy and Security Assessment, a procedure we use to assess whether new or updated IT systems comply with our security and data privacy requirements. In the reporting year, we also developed internal testing procedures like the robust AI assessment and continued to apply the internal test seal developed in 2019 for Deutsche Telekom AI projects. In order to firmly entrench the AI guidelines in the Company, we continue to provide our employees with further training on how to deal with the requirements. SDG 8 RELATIONSHIPS

Connect the unconnected

But access to technology alone is not enough to ensure everyone can participate in the knowledge and information society – people also need to know how to use digital media safely, competently, responsibly, and for the benefit of everyone. Increasingly, this issue has not only a private dimension – the protection of personal data – but also a socio-political one. Hardly any area of life is untouched by digitalization. That is why we are working to build media literacy and democracy skills in the population. In doing so, we are guided by the aspiration embodied in our #TAKEPART campaign to keep everyone connected, namely that digital participation also includes participation in society. SDG 10 RELATIONSHIPS

As one of Germany's major corporate foundations, the Deutsche Telekom Foundation is dedicated to improving education in STEM subjects in the digital world. Since 2018, it has been supporting the initiative "The Future of STEM learning" and, together with five universities, developing concepts for good STEM teaching. In total, the Deutsche Telekom Foundation has invested EUR 1.6 million in this project. SDG 4 RELATIONSHIPS

The individual national companies are responsible for implementing projects on media literacy. Examples include the youth promotion programs in Slovakia and the United States. Slovak Telekom's national education program ENTER encourages digital education, while T-Mobile US' Changemaker Challenge is a contest in which young people contribute ideas for better coexistence – in the categories technology, environment, and education. Three winners were chosen from among 428 applicants.

All of our initiatives for greater media literacy in Germany can be found on the website "Media, sure! But secure." (www.medienabersicher.de/en/), where we provide informational material for all target groups. Deutsche Telekom's #TAKEPART stories – tales from the digital world for teenagers and young adults – are a practical take on digitalization issues of social relevance and translate them into a range of offers for multipliers. The aim is to raise awareness, highlight alternatives, try out new behaviors, and make the dialog on social media more constructive. All modules of the #TAKEPART stories are also available in simplified German. Our multi-award-winning Teachtoday initiative (www.teachtoday.de/en/) helps children and young people learn how to navigate the internet safely and skillfully. Since 2020, a new toolbox has been available for multipliers and teachers. It comprises more than 100 formats that deal with media literacy and democracy skills. They can be used without any specialist knowledge and have been designed for two key age groups: 9 to 12 and 13 to 16. The initiative also publishes the children's magazine Scroller.

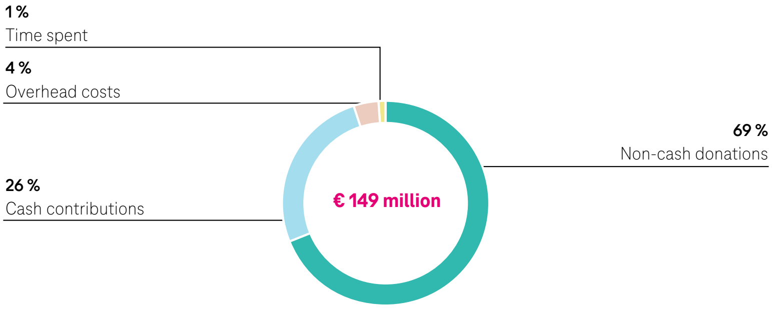
In 2020, our media literacy initiatives focused on “digital civil courage” and dealt with the question of how we want, and are able, to interact with each other on the internet and social media. The downsides of this interaction include hate speech and fake news, which are socially divisive. Together with Deutsche Telekom’s brand management, we launched the campaign “#TAKEPART – No Hate Speech.” Working closely with 44 partners – such as Gesicht zeigen! (Show your face) and #ichbinhier (I’m here) – we are setting an example for more digital civil courage and against turning words into weapons. The corresponding campaign spot was shown on television and other media. Podcasts enabled us to reach out to many thousands of people – including new target groups like teenagers and young adults. Digital civil courage was also a topic of discussion at an international meeting of Deutsche Telekom managers and at the Magenta Moon event. Overall, we reached some 15 million people through the campaign and accompanying events (not including the campaign on TV/radio and in movie theaters). The campaign and the underlying commitment to civil courage online bear the “we care” label in the “Digital participation” category. In this category, the label highlights positive contributions toward solving social challenges in the digital world. SDG 4 RELATIONSHIPS

“Act responsibly” has been specifically named in our strategy since 2020 and social responsibility aspects likewise form part of Deutsche Telekom’s brand profile. The topic also features regularly in sales support contexts and on MagentaTV. In 2020, we broadcast four programs on Scroller-TV. Scroller-TV and the children’s magazine Scroller earned us two Comenius Awards in 2020, Europe’s most prestigious honor for digital education media.

Data privacy is another focal point of our efforts. Our advisory service www.digitallysecure.en and our app-based “We Care” magazine offer practical advice on how to use digital media safely and securely.

We measure the impact of our Group’s social commitment with a set of three ESG KPIs. The Community Investment ESG KPI maps our social commitment in terms of financial, human, and material resources. In 2020, this amounted to EUR 149 million. This strong year-on-year increase was attributable in particular to donations of handsets and services of T-Mobile US rendered as part of its “Digital participation” campaign. The Beneficiaries ESG KPI shows how many people have benefited from our community activities: 16.4 million in 2020. The Media Literacy ESG KPI calculates which proportion of the target group has benefited from media literacy programs as part of our social commitment efforts. In 2020, this KPI was 45 %, up from 41 % in the prior year and precisely at this year’s target figure of 45 %. The rising popularity of our offerings stems largely from a burgeoning interest among the public at large in acquiring media literacy and democracy skills. In times of coronavirus, social and digital media are being not only used, but also abused, more than ever – fueling growing concerns and ultimately helping to boost interest in our offerings. The 2020 ESG KPIs for the Deutsche Telekom Group in Germany were EUR 34 million (Community Investment), over 12 million (Beneficiaries), and 39 % (Media Literacy).

Community Investment ESG KPI



Data privacy and data security SDG 16 STRUCTURE

People will only use ICT solutions if they trust in the security of their personal data – and only then can these solutions develop their true potential for more sustainable development. As a result, we attach particularly great importance to protecting and securing data.

For further information, please refer to the section “Risk and opportunity management.”

Our active data protection and compliance culture, which has been built up over ten years, sets national and international standards. The data privacy-related compliance management system outlines the measures, processes, and audits we use to ensure compliance with laws, regulations, and voluntary commitments to uphold data privacy in the Group.

Since 2009, the Group Board of Management has been advised by an independent Data Privacy Advisory Board comprising reputable experts from politics, science, business, and independent organizations. At the beginning of 2020, the role of the Advisory Board was strengthened through the addition of new members and permanent guests from the ranks of the Board of Management and the Supervisory Board of Deutsche Telekom AG.

Data privacy and data security are governed by the corresponding Group policies: Binding Corporate Rules Privacy (BCRP) regulates how the Group treats personal data, while the Group Security Policy contains significant security-related principles valid within the Group, which are based on the international ISO 27001 standard. These policies allow us to guarantee an adequately high and consistent level of data privacy and security throughout our entire Group.

We issue an annual transparency report – since 2014 in Germany, and since 2016 in our national companies – in which we set out the nature and scope of our disclosures to security authorities. We are thus fulfilling our statutory duty as a telecommunications company.

In order to ensure even better data privacy and data security within our Group, our corporate units are audited and certified several times a year by internal and external experts. This includes the annual (re-)certification of the Telekom Security management in accordance with ISO 27001, regular Group-wide internal security checks, and the annual review of the individual Group units in connection with security maturity reporting. These audits help us assess the status quo of security in our Group.

Every two years, we perform a sample survey of data privacy and data security awareness across the Company. In the course of the Group Data Privacy Audit (GDPA), we survey 25,000 Deutsche Telekom employees on topics related to data privacy and data security. The focus of our Online Awareness Survey (OAS) is on security awareness at the Company. The results are used to calculate the Data Protection Award indicator – which quantifies the level of data protection in the units on a scale from 0 to 100 %. It is based on what the employees said they thought, did, and knew about data protection. The Data Protection Award indicator was calculated in 2020 at 86 % (2018: 76 %, excluding T-Mobile US). The OAS surveys around 42,000 employees Group-wide (excluding T-Mobile US) across all levels of the hierarchy and provides data on security awareness. With academic support, we use the results from this survey to determine the Security Awareness Index (SAI). In the last survey in 2018, the index was 80.3 of a maximum of 100 points (higher than in any other benchmark company). We also have our processes and management systems as well as products and services certified by external, independent organizations such as TÜV, DQS, DEKRA, and auditing firms. The IT systems at Telekom Deutschland were most recently certified as secure in 2020 by the testing institute TÜV Informationstechnik (TÜViT) of the TÜV Nord Group.

Telecommunications companies are required to train their employees on issues related to data protection law when they begin their employment. Deutsche Telekom goes above and beyond these legal requirements: Every two years, we train all of our employees in Germany and place them under an obligation to uphold data privacy and telecommunications secrecy. Corresponding requirements apply to our national companies. Where there is a greater risk of data such as customer or employee information being misused, we also provide additional online training designed for self-study, give data privacy presentations, and host classroom training courses on specialized topics such as protection of customer data.

Since July 1, 2020, the Group's cybersecurity expertise has been pooled at Deutsche Telekom Security, a Deutsche Telekom subsidiary that leads the market for IT security solutions in Germany. Deutsche Telekom Security is responsible for everything related to internal security and its goal is to protect all Group units. It offers consumers and business customers solutions to make information technology more secure, from smartphones through to corporate infrastructure. In the Cyber Defense and Security Operation Center, more than 240 security experts around the world monitor our systems and those of our customers around the clock.

We react to new emerging threats and continuously develop innovative processes for defending against attacks. And for good reason: cyberattacks on companies are becoming more aggressive and sophisticated across all industries. In the reporting period alone, we registered on average almost 45 million attacks per day on our honeypot systems. Of course, not all of the attacks picked up by our sensors are high-level threats. Most are automatic scanning tools seeking to exploit potential vulnerabilities. While these do not necessarily count as fully fledged attacks, they are still to be seen as relevant early-stage activities. In a shielded environment, Deutsche Telekom Security even develops its own malware and uses it to test whether new systems can reliably detect and mitigate attack vectors. In this way we ensure our own critical IT infrastructure is protected. We also offer other operators critical infrastructure advisory services, for example to energy providers.

Our security experts use their experience to help develop security solutions for our customers. In 2020, Deutsche Telekom Security brought a wide range of new solutions to market maturity. Among other things, our key security and defense offerings were combined in the Magenta Security Shield package, so as to offer our customers even better protection. Data privacy and security play a fundamental role in the development of our products and services. We review the security of our systems at every step of development using the Privacy and Security Assessment process both for new systems and for existing systems when the technology or method of data processing is modified. We use a standardized procedure to also document the data privacy and data security status of our products throughout their entire life cycle. Our security management systems are certified externally. At the same time, we ensure that our services also comply with specific regulatory requirements from other industries, such as TISAX in the automotive industry.

Youth protection aspects are also taken into consideration in our product and service design. When we develop services that could be relevant in terms of youth protection in Germany, we consult our Youth Protection Officer for suggestions of restrictions or changes. In 2014, we appointed a Child Safety Officer (CSO) in each of our national companies in Europe. The CSO acts as a central contact for the relevant stakeholders of the community, and plays a key internal role in coordinating issues relevant to youth protection. Since protecting minors when they interact with media is a challenge across many different industries, we cooperate with different youth protection organizations and participate in alliances such as the "Alliance to better protect minors online," which aims to make the internet a safer place for children and young people.
SDG 3 RELATIONSHIPS

We work with research institutes, industry partners, initiatives, standardization bodies, public institutions, and other internet service providers worldwide with a view to fighting cybercrime and enhancing internet security together. For instance, we collaborate with the German Federal Office for Information Security throughout Germany and with the European Union Agency for Network and Information Security at a European level. The Cyber Security Cluster Bonn is an association of authorities and companies in Bonn that are dedicated to consulting, education, and research in the field of cybersecurity. As an expert committee, the Cyber Security Cluster Bonn offers direct advice to German and European government bodies.
SDG 17 RELATIONSHIPS

Aspect 4: Respecting human rights

We place high priority on respecting human rights. This applies not only to our Company, but also to our business partners and our approximately 20,000 suppliers in more than 80 countries – whom we explicitly place under the same obligations.

Labor standards in the supply chain and in the Group SDG 10 EMPLOYEES

There are still places in the world where human rights are not a given. As part of our global procurement activities, we can be exposed to country- and supplier-specific risks. These include, for example, inadequate local working and safety conditions. Violations cause severe damage to those affected and can result in reputational damage and negative financial consequences for companies.

For further information, please refer to the section "Risk and opportunity management."

As a responsible company, we have made an express commitment to upholding the UN Guiding Principles on Business and Human Rights adopted by the United Nations Human Rights Council in 2011 (Ruggie Principles). The obligation to respect human rights is anchored in our core regulations – i.e., our Guiding Principles and our Code of Human Rights & Social Principles policy statement. The latter underscores our commitment to protecting human rights and to the goals of the German National Action Plan on Business and Human Rights adopted by the Federal Government in 2016. At the same time, the code embodies our commitment to complying with the principles laid down by the International Labour Organization (ILO), the Organisation for Economic Co-operation and Development (OECD), the Universal Declaration of Human Rights, and the UN Global Compact. We also require our suppliers to comply with all our guidelines related to human rights. Within the Group, the main focus of our attention is on preserving the right to collective agreements, and on ensuring diversity and equal opportunity.

For further information, please refer to the passages entitled "Collaboration with employees' representatives/trade unions" and "Diversity and equal opportunity."

In order to meet the requirements of the UN Guiding Principles, we have developed an extensive program to implement these Principles throughout our Group and introduced an ongoing process comprising several interconnected measures and tools. The program includes the policy statement, promoting awareness, a mechanism for lodging complaints, a risk and impact analysis, and reporting.

We use two main instruments to review our Code of Human Rights & Social Principles in the Group: Firstly, we compile a central Human Rights & Social Performance Report each year. For 2020, all 121 of the companies surveyed declared in this report that they comply with the rules and principles of the Code of Human Rights & Social Principles. We also included our five joint ventures in the survey for 2020. The report indicated no violations for 2020. Secondly, we have established a central point of contact for human rights issues, which can be reached via the email address “humanrights@telekom.de.” Further contact options and an anonymous whistleblower system can be found on Tell me!, our Group-wide whistleblower portal. We look into all tip-offs received and introduce countermeasures, provided the information is identified as plausible. In 2020, nine tip-offs relating to human rights were received via the point of contact and the whistleblower portal. Not all of these tip-offs were deemed plausible. Whenever necessary, we carry out review processes at our national companies to assess employer-employee relationships. To do so, we compile five human rights-related key performance indicators, such as employee satisfaction, then assess these using a traffic light system. SDG 16 RELATIONSHIPS

For further information about employee satisfaction, please refer to the section “Employees.”

In addition, we conduct an annual formal review of compliance with our Employee Relations Policy. In February 2020, an employee relations policy review was conducted at Crnogorski Telekom in Montenegro. After a review like this, the results are discussed with the regional managers in our national companies. If necessary, we agree measures such as a Human Rights Impact Assessment and Engagement – a process for estimating the actual and potential effects of business activities on human rights, as well as the ability of the organization to prevent, mitigate, or eliminate negative effects. In view of the coronavirus pandemic, we were unable to perform any further assessments abroad in 2020. The pandemic also prevented us from holding on-site training courses to raise awareness among managers and employees for human rights issues. Instead, we organized a Human Rights Risk Assessment at Group Headquarters, in the course of which we identified further Group-wide challenges as regards human rights; among other things, these will make it necessary to adjust individual policies and communications measures. We will take corresponding action before the end of 2021.

Our perception of ourselves as a company that acts in a socially and ecologically sustainable way includes assuming responsibility along our entire value chain. We have been working to improve sustainability throughout our supply chain for many years. Our strategy for sustainable procurement practices is embedded Group-wide in our procurement processes. The heads of the CR and Procurement units are jointly responsible for its implementation. They report to the Board of Management members for HR and Legal Affairs as well as Finance. An escalation process calls for decisions to be made at Board of Management level in severe cases. The Sustainable Procurement working group supports our international procurement units in meeting sustainability requirements. Our sustainability principles for Procurement are set out in the Group’s Global Procurement Policy. The supplementary Procurement Practices provide specific guidelines for procurement in Germany and serve as recommendations for our national companies. The section of the Procurement Practices covering sustainability gives purchasing officers an overview of the CR criteria that are to be taken into account in each stage of the procurement process. An e-learning tool is available to our employees throughout the Group for training purposes. SDG 8 RELATIONSHIPS

We cannot guarantee that all our suppliers conform to the principles of our Supplier Code of Conduct. We review their compliance regularly to minimize risks and support suppliers in further developing their sustainability performance, working closely with them on these issues. Leading up to the supplier evaluation, we classify our categories as critical or non-critical based on risk and opportunity. We have defined 14 Corporate Social Responsibility (CSR) risk criteria and four CSR opportunity criteria on the basis of expert interviews.

For the supplier evaluation itself, we use a multi-stage approach: The Supplier Code of Conduct, for instance, is an integral part of all supplier agreements and binding for all of our suppliers. Ethical, social, and ecological principles as well as fundamental human rights are codified in this document. When selecting a supplier after issuing an invitation to tender, sustainability factors are given a weighting of 10 %. In addition, new suppliers are subjected to a sustainability risk assessment by an external audit firm. In this way, we discover if there is any increased risk in terms of specific sustainability criteria at any of our suppliers.

Sustainability assessments and reviews are conducted for selected suppliers of critical categories. Depending on their individual sustainability performance and risk classification, we use a range of instruments, for instance, the information system EcoVadis, mobile surveys, or on-site supplier audits (social audits). Our focus here is not only on our direct suppliers but also, wherever possible, on downstream suppliers. We also boost the effectiveness of our audits by collaborating with 15 other telecommunications companies in the Joint Audit Cooperation (JAC). In 2020, we completed a total of 89 social audits (76 audits and 13 mobile surveys) – 29 at our direct and 60 at our indirect suppliers. Since 2010, we have carried out 728 audits within the framework of the JAC. The coronavirus pandemic had little impact on the planned JAC audits: where in-person audits were not possible, they were conducted by video conference, for example. SDG 10 RELATIONSHIPS

We work in close cooperation with our strategically important suppliers on improving their sustainability performance, for example, in terms of environmental protection, working hours regulations, and occupational health and safety. This is done primarily as part of the development program we initiated for suppliers. Since 2018, we have been implementing this program on the basis of a voluntary industry-wide approach known as the Sustainable Development Program (SDP). In addition to Deutsche Telekom, telecommunications companies Telefónica and Swisscom have thus far joined the SDP as well and more are to follow. In the reporting period, six further suppliers (two of Deutsche Telekom, three of Swisscom, one of Telefónica) were included in the SDP. Since the launch of the program in 2014, a total of 29 suppliers have completed the SDP, achieving measurable ecological, social, and economic progress. Suppliers made further progress in 2020, too. For instance, one of them succeeded in raising its employee satisfaction level by 11.5 %. Another installed its own photovoltaic system, cutting by 3,700 MWh/year the amount of energy needed to heat and cool its buildings and saving 3,034 metric tons of CO_2e emissions.
SDG 17 RELATIONSHIPS

As announced in the 2019 CR Report, we changed our sustainability performance metric for procurement in 2020 in order to meet the increasing requirements of our stakeholders. To this end, one of the steps we took was to define two new ESG KPIs: The Procurement Volume Without CR Risk ESG KPI – for which the target is 95 % by 2025 – measures the procurement volume from direct business partners on whom an established external service provider carried out checks in the reporting period for negative reports in the media and found no irregularities. It also includes suppliers for whom irregularities were identified, but where corresponding corrective action was taken. The share of this procurement volume subjected to a risk assessment amounted to 99.6 % in 2020. On the other hand, the Order Volume Verified as Non-Critical ESG KPI – target for 2025: 60 % – measures the share accounted for by suppliers checked for social and ecological criteria by means of dedicated reviews – e.g., via EcoVadis, the Carbon Disclosure Project (CDP), social audits, supplier visits, or our Supplier Development Program. In 2020, the share of these CR-qualified suppliers was 62 %. Both ESG KPIs are calculated in respect of the audited Group-wide procurement volume already largely mapped in a standardized procurement reporting system (excluding the “Network Capacity” category and T-Mobile US). The new KPIs replace the previous indicators “Sustainable procurement” and “Top 200 CR-qualified suppliers.”

We are constantly working to enhance the social and ecological sustainability of our value chain. In the reporting year, we developed specific sustainability criteria for IT and network products and tested them in a pilot project. As of 2021, these criteria will be applied in all tenders for hardware products and have a weighting of 10 % when selecting suppliers.

Detailed information on our supplier management system will be published in our 2020 CR report.

Aspect 5: Fighting corruption

Corruption and unfair business practices violate national and international law. We reject every form of corruption, which is why corruption avoidance measures constitute a focus of our compliance activities.

Ethical business practices and compliance SDG 16 EMPLOYEES

We feel it is highly important that all staff and executive bodies in our Group act with integrity and comply with our values, rules of conduct, and applicable laws and statutory requirements at all times. The goal of our compliance activities is to prevent violations and improper business behavior and to integrate compliance into our business processes early on and enduringly. Our customers need to be able to trust that our actions meet the highest standards for compliance and integrity around the world. This is essential if we are to be seen as a reliable partner.

We have expressed our commitment to complying with ethical principles and both legal and statutory requirements. We have anchored this pledge in our Guiding Principles and our Code of Conduct. The Code of Conduct is valid throughout the Group and has been introduced in all of our national companies.

Group Compliance Management, our central compliance organization, also plays a key role in establishing corporate governance structures and a corporate culture that focus on integrity. It promotes a compliance culture and establishes a set of values centering around the issue of compliance at our Group, and encourages managers and employees to internalize these values. Our understanding of compliance therefore far exceeds simply conducting business legally, i.e., in line with laws and internal regulations, and aims to ensure everyone in our Group behaves with integrity.

We have introduced a comprehensive compliance management system to establish integrity and compliance with the law as pillars of conduct across the entire Group. The compliance management system serves to mitigate exposure to legal and financial risks, minimize the risk of reputational damage being sustained by the Company, its employees or executive bodies, prevent violations of applicable law and internal policies and regulations, and deter conduct not in compliance with our values. All our activities comply both with legal and statutory requirements and with our own internal policies and regulations. Responsibility for the compliance management system lies with the Board of Management department for Human Resources and Legal Affairs. In addition, one person at management or board of management level in each Group company is in charge of compliance. Our Chief Compliance Officer is responsible for the Group-wide design, advancement, and implementation of the compliance management system. Compliance officers implement the compliance management system and our compliance goals locally at the level of our operating segments and national companies.

We take many different actions and measures to prevent and fight corruption. Our compliance management system is based on the Compliance Risk Assessments (CRAs), which we use to identify and assess compliance risks and introduce suitable preventative measures. To this end, we have introduced a Group-wide process to be carried out annually. The companies that will take part in the CRAs are selected according to the level of maturity of their compliance management system (maturity-based model). In the reporting year, the CRAs included 69 companies and covered almost 94 % of the workforce (according to the headcount figures for the fully consolidated companies). The individual Group companies are responsible for conducting the CRA, with support and advice given from the central compliance organization. We have our compliance management system regularly reviewed, with particular attention paid to anti-corruption measures. In the two-year period 2020/21, a total of 23 German and international companies will be externally audited.

We regularly provide risk-oriented and target group-specific compliance and anti-corruption training. We have set up the Ask me! advice portal to address all kinds of issues relating to compliance. The portal contains reliable information for employees on laws, internal policies, and rules of conduct relevant to their daily activities.

Despite all precautions, we are not always able to prevent breaches of law or violations of regulations at the Company. The Tell me! whistleblower portal is available to employees and external parties for reporting breaches or suspected breaches of the law or of internal policies and regulations. In 2020, 113 compliance-related tip-offs were submitted via the Tell me! portal (prior year: 122 tip-offs). Over the course of the year, 46 of these were confirmed to be cases of misconduct and dealt with accordingly. Within the scope of the legal framework available to us, we systematically pursue all tip-offs, including those that reach us via other channels, and implement commensurate sanctions in compliance with the relevant statutory provisions. We have introduced a Group-wide reporting process to control and monitor these activities.

With our Supplier Code of Conduct as an integral component of our General Terms and Conditions for Purchasing, we obligate our suppliers to, among other elements, refrain from any kind of corruption or conduct that could be interpreted as such. We select our business partners based on compliance criteria and conduct risk-oriented compliance business assessments. We have been offering regular e-learning training courses on compliance to our suppliers since 2014. SDG 17 RELATIONSHIPS

Innovation and product development

VTI strategy: we enable today's business and shape the future

At Deutsche Telekom, innovation means creating the best (digital) customer experience on the basis of the best network – now and in the future. To this end, we neither manufacture smartphones, nor do we create our own film content, or the automation technology and sensors for industrial campus networks. Our core competency consists in integrating the individual components so that, in conjunction with our network and IT infrastructure, we can guarantee the best customer experience at a reasonable price with resilient and future-proof technology. This is precisely the task of our Technology and Innovation Board of Management department (VTI), which works in close cooperation with our operating segments. VTI is where we combine and integrate our Technology, Innovation, IT, and Security functions. This structure will allow us to meet the demands of the future network generation and the associated requirements not only of our customers, but also of society as a whole – also in terms of network security and sustainability. Our Group strategy includes the claim to "lead in technology." That applies not only to high-speed broadband access, but also to responsible network production. That is an economic and ecological necessity, especially given growing cloudification, increasing data traffic, and the rising number of active components in our network. SDG 9 ENVIRONMENT

Gaming exemplifies the comprehensive nature of the role we play. We do not program games, but offer creators of games and gamers themselves a cloud gaming platform that uses the latest NVIDIA RTX servers with powerful graphics cards. Our networks enable a seamless end-to-end experience that also includes access to stable bandwidth. It is a service we can already offer our fixed-network broadband customers, and our LTE/4G and 5G mobile customers. On top of that, we are building infrastructure to integrate distributed cloud capacity (edge clouds) into our networks. That is getting the cloud closer to the gamers. We define and configure our networks in such a way as to provide stable, low-latency gaming traffic, making for a user experience without interruptions and delays. At the same time, we help a large number of people #TAKEPART by facilitating access to our platform.

The crisis triggered by coronavirus has underscored the importance of investing in resilient, future-proof technology: our networks and IT were, are, and will remain secure and stable. That would not have been possible without the IP migration in Europe and the IT turnaround in Germany.

We are thus in a position both to enable Deutsche Telekom's current business and to simultaneously shape the future. We are convinced that, in line with the priorities of our segments, we can reliably deliver results, constantly develop product, industry, and technological innovations, and simultaneously hone and refine our ways of working – all in the best interests of Deutsche Telekom.

- **Delivery Innovation:** VTI is a supplier for the Group. As such, it is particularly important that we consistently meet our obligations. That means conscientiously delivering our services, leveraging the synergies offered by centralized production, and working cost-efficiently. At the same time, we can also shape the future, e.g., by promoting agile working methods to make our production future-proof.
- **Experience Innovation:** We are Deutsche Telekom's central innovation team. Constantly pursuing innovations that benefit both our customers and the Group is our task and our obligation – but we also consider it an expression of the freedom we enjoy. Our technological innovations form the underpinnings for this. We work in close cooperation with the segments in order to meet all customer requirements, and create useful and meaningful innovations.
- **Capability Innovation:** Continuing to turn Deutsche Telekom into a software-based company entails transforming our capabilities. We want to recognize future changes in our Company and be able to handle them as they arise. Changes become entrenched especially when accompanied by cultural innovation in the shape of skills transformation and the systematic retraining and further training of our employees as software engineers, AI experts, and network architects. By the end of 2020, we had given 1,000 of our employees intensive training in topics relevant for the future, such as software development, artificial intelligence, and cloud computing in 15 Skill Academies. SDG 4 EMPLOYEES

Innovation priorities

Where does innovation come from? Everywhere. That is why it is important to ensure we pursue our innovation activities at an intragroup level and that they are aligned with our strategy. Our interconnected innovation areas provide a holistic, Group-wide framework for this. In the reporting year, we continued to hone our innovation priorities in close coordination with the operating segments, building on our activities in 2019:

- **Connectivity:** We are working to ready our router operating system for the digital future – with enhanced cloud-based connectivity management and service quality, a superior customer experience and standardized operation via app, PC, or TV, and value-added applications, such as child protection functions, home security, predictive maintenance, and troubleshooting. This new router generation is based on a scalable global reference system (Reference Design Kit, RDK), which we are constantly fine-tuning together with other leading telecommunications providers. In 2020, we launched initial applications and prototypes in Germany, Hungary, Croatia, and Greece. We will be starting a comprehensive pilot with the latest router generation in early 2021.
- **MagentaGaming:** We readied our cloud-based gaming offering for the market, launching it at Gamescom in August 2020. In an effort to become the best entertainment aggregator in our markets, we are continuously evolving the offering's functions and features, expanding the available content, integrating payment and customer loyalty systems, and developing mobile gaming applications.
- **Smart Home:** We began cloudifying our smart-home offerings in the previous year, with the aim of making the ecosystem future-proof. We achieved a substantial increase in customer satisfaction, in part by making the activation process a lot simpler. The 2020 financial year saw the integration of Smart Home into Telekom Deutschland's new broadband service, which entailed the changeover to hardware-based applications and in-app service activation via Telekom ID to increase user numbers.
- **Home Orchestration:** We want to improve the customer experience at home by ensuring the easy, seamless, and uniform interaction of all Deutsche Telekom's services and devices, and by enabling the services of selected partners. We continue pushing forward with this integration and orchestration of the home network, TV, smart speakers, smart-home applications, and entertainment services. Initial applications, e.g., Wi-Fi Sharing, have already gone live.

- **Magenta Voice:** In summer 2020, we launched the first mini speaker on the German market. This compact speaker version was honored with the German Design Award. What is more, multiple individual designs make it truly customizable. With smart voice control (also known as voicification), we want to further enhance the way our customers experience our services, and to simplify interaction with technology and devices. In addition, we are constantly evolving the voice platform, winning over new partners, and integrating further voice-controlled Telekom services (e.g., TV, Smart Home). Ongoing functionality enhancements have resulted in rising customer satisfaction levels. In parallel, we are pushing forward with B2B solutions.
- **5G:** With 5G, we are creating the basis for the digital world of tomorrow, especially when it comes to real-time communication. This next-generation technology is the key to innovative applications for virtual reality and extended reality (XR), connected and autonomous driving, robotics, and Industry 4.0. In 2020, we defended our position as innovation leader for the 5G core network by launching dynamic spectrum sharing (DSS), a new antenna technology that for the first time enables the parallel use of LTE and 5G in the same frequency band. DSS has been key to successfully expediting the 5G build-out and thus contributed in a major way to accomplishing our current level of network coverage reaching two thirds of the population in Germany.
- **Campus Networks:** Campus networks for corporate customers are one of the core applications for 5G technology. Campus networks integrate dedicated mobile connectivity with edge computing and integrated digital applications from the fields of production, automation, and logistics, enhancing companies' options to automate their production, and achieve stability and flexibility. We continued expanding our campus portfolio in 2020 and, at the end of the year, successfully completed pilot projects for a 5G campus at the University Hospital Bonn and a "private-only" campus for corporate customers with their own spectrum. The 5G NR NSA product, Campus L, has been ready for rollout since December 2020, while the Campus M version was launched in summer 2020.
- **Network Differentiation:** In this innovation program, we are developing software solutions for the automated analysis and operation of network infrastructure based on artificial intelligence (AI) and machine learning. In addition, a multi-vendor strategy serves to strengthen autonomy and enables us to maintain our innovation leadership. This approach to network production is based on cloud and software technologies that will significantly enhance the customer experience and improve both flexibility and scalability. At the same time, it lowers production costs and opens up new monetization options. The Open Test & Integration Center (OTIC) was opened in Berlin. Here, start-ups, suppliers, operators, and systems integrators can test out how new components interact with mobile networks. The goal is to create a vendor-independent RAN that also interacts quickly and easily with other networks. This is the vision being pursued by the network operators and suppliers that have joined forces in the O-RAN Alliance.
- **AI Enterprise:** By integrating artificial intelligence, we will ensure that our products and services remain competitive into the future. The focus of our activities in 2020 was on scaling up the chatbots already based on AI in order to further personalize customer interactions across all points of contact. German computer magazine Computer Bild named our "Frag Magenta" chatbot the best chatbot by a German telecommunications provider (issue 24/2020). We also continued to personalize our marketing and sales activities so as to be able to offer our customers tailored solutions that are based on our previous interactions with them.
- **Big Data:** This is an innovation area in which we are driving the implementation of Group-wide principles for data processing and analytics. Our uniform data model will enhance our data analyses and enable us to easily transpose successful analyses to new markets. As our top priority is the privacy and integrity of our customers' data, customer and network data remain with the relevant national companies. Applications have been implemented at five national companies and have already resulted in significant efficiency gains.
- **Sustainable Telco:** Our latest innovation area is devoted to making telecommunications providers more sustainable. Currently, the main focus is on energy-optimized network production and the resource-efficient design of products and services. The reporting year saw successful prototypes and tests for AI-based, smart energy management in the mobile network and for decentralized renewable energy production.

Three-pronged innovation strategy
We set ourselves apart from the competition and generate growth in three ways:

1. In-house developments
2. Partnerships
3. Start-up funding

1. In-house developments
In 2020, we continued to pursue our current innovation topics and optimized our delivery process, developed new products, and simultaneously ramped up our transformation into a more agile company.

- **Delivery innovation:** Artificial intelligence drives internal digitalization, e.g., in campaign management or with the Magenta chatbot, which *Computer Bild*, a German computer magazine, named best chatbot by a German telco in its 24/2020 issue. Dynamic spectrum sharing helped us build on our leadership position. This new antenna technology enables the parallel use of LTE and 5G in the same frequency band.
- **Experience innovation:** In the consumer arena, we executed the commercial launch of the mini speaker and MagentaGaming. Industrial campus networks also reached the market.
- **Capability innovation:** In the wake of our transformation into an agile company, more than 70 % of our employees now work in an agile set-up, which is also having a positive impact on IT delivery. For example, around two-thirds of our IT deployments now take place outside of the traditional waterfall development model.

Thanks to our centralized research unit, **Telekom Innovation Laboratories (T-Labs)**, we have access to our own R&D centers. At our T-Labs sites in Berlin, Be'er Sheva, Budapest, and Vienna, we collaborate with the world's leading universities, research institutes, and other companies' innovation centers. Together with these partners, T-Labs is conducting research & development at the interfaces between science and entrepreneurship, with a view to shaping the future in our current key areas: Blockchain, Intelligence, and Experience. The T-Labs teams are solving specific customer problems, enhancing Deutsche Telekom's innovative strength, and tapping into the topics of the future for networks, computing, and processes. SDG 9 RELATIONSHIPS

- **Blockchain** has multiple thrusts: In the first, blockchain technologies are being assessed to see whether they can help make Deutsche Telekom's internal processes more efficient and transparent. A specific example is wholesale roaming, where, in partnership with the GSM Association (GSMA) and other telecommunications companies, we have designed a solution for creating, signing, and billing contracts. The medium-term goal is to work together with the GSMA to create an industry standard to enable further use cases to be implemented using this solution. The second thrust focuses on using the blockchain as infrastructure. This could be crucial, for example, to development of the M2M economy, where producers and consumers connect in a decentralized manner and share trusted data. Another new topic of interest is the development of decentralized identity solutions that could allow people and even machines to autonomously store and manage their own identities. Above and beyond that, we are looking into new ways of participating in open-source projects.
- **Intelligence** relates to all aspects of teaching cognitive abilities to machines. The resulting artificial intelligence (AI) is defined as the imitation of human intelligence or intellectual processes by computer systems. Such processes include learning, drawing conclusions, and automatic correction. T-Labs' main focus is on developing innovations that are thematically related to the requirements of a telecommunications provider and that help automate or optimize its infrastructure, processes, or products. AI research is currently focused on the following: communication networks (so as to optimize network planning for the rollout of new technologies such as fiber optic or 5G); cybersecurity AI (in order to protect Deutsche Telekom's customers and its own infrastructure, and achieve fair, verifiable results using AI); and quantum AI (to enhance both the speed and quality of machine learning processes). In addition, we are launching sustainability AI – which uses AI-based optimizations to make more efficient use of valuable resources. SDG 15 ENVIRONMENT
- **Experience** developed an infrastructure for smart city solutions that is based on micro-services. Developed using open standards, the infrastructure allowed for the integration into the existing OGC platform operated by the City of Hamburg. The platform enables citizens to access a variety of information about their city (free parking spaces, available charging stations for electric vehicles, etc.). The services developed reflect the quest to satisfy the future needs of society. The Experience team collaborates with scientists, businesses, and other partners to shape both the customer journey for every product and the value added by every service. Specific results include prototypes and tests to improve streaming quality, and to utilize XR technology for Deutsche Telekom's business areas.

University Partnerships is being established in cooperation with a large number of Deutsche Telekom units to function as a Group-wide linchpin for innovation, further training, and HR marketing. **Academia as a Service** was launched by T-Labs as an active research network aimed at fostering global academic partnerships, e.g., by starting pilot projects or putting Academia partners into contact with Deutsche Telekom stakeholders. T-Labs' active promotion of university partnership programs assists Deutsche Telekom's HR department in recruiting talented new employees and helps strengthen the Company's corporate brand.

2. Partnerships

We draw on the expertise and abilities of our partners in order to implement the digital transformation. For example, we rely on the tremendous innovative energy coming out of Silicon Valley, Israel, Germany, and other innovation hotspots across the globe. The following are some examples of successful partnerships:

- Deutsche Telekom concluded an agreement with **SK Telecom** to set up a **joint venture for 5G technology**. The joint venture will assist both companies in developing innovative 5G solutions. The focus is on solutions that ensure in-house 5G coverage, initially for the European market. In-house coverage, which is accomplished using 5G repeaters, is currently an untapped market niche, and the joint venture can play a pioneering role in this area. In the medium to long term, we are assessing options for partnerships in the fields of augmented reality (AR) and virtual reality (VR) services, mobile edge computing (MEC), and the app market.
- Deutsche Telekom joined the **Open RAN Policy Coalition**, building on its groundwork in this field: promoting and accelerating carrier-grade open-RAN solutions for an even better customer experience in our networks. As a trailblazer in this area, we founded the global #OpenRAN movement back in 2016. Its mission is to develop specifications to open up and cloudify the RAN, and to encourage a more lively and competitive environment for network equipment providers. Since then, Open RAN has gained considerable momentum. The technical standards and interfaces of the O-RAN Alliance are making the RAN open, smart, and fully interoperable.

- Together with U.S. navigation specialist **Swift Navigation**, Deutsche Telekom is launching a solution for reliable, high-precision geopositioning in the European market. Called Precise Positioning, the system is accurate to the centimeter and enables, for example, lane-accurate navigation for (semi-)autonomous vehicles. Conventional satellite navigations systems like GPS are accurate only to within three to five meters. Skylark™, Swift's cloud solution, corrects this satellite data, allowing the location of autonomous vehicles and machines to be determined with greater accuracy. Via the mobile network, data flows continuously between the ground-based reference stations operated by Deutsche Telekom, the cloud solution from Swift, and the M2M SIM card in the vehicle, delivering precise correction data and enabling exact positioning in real time. Precise Positioning opens up new cross-industry mobility options and possibilities to develop autonomous applications that require exact, reliable positioning. The potential application areas include the automotive industry, logistics, drones, rail traffic, agriculture, the construction industry, and even consumer solutions. In the agricultural sector, for instance, with Precise Positioning self-driving machines can be deployed to sow crops, spread fertilizer, or plow fields with inch-perfect precision and thus save seeds, fertilizer, and energy. SDG 13 ENVIRONMENT
- Deutsche Telekom is now working together with **RemoteMyApp** (RMA) as its partner for modern game streaming technology to serve the cloud gaming business area and bring its MagentaGaming service to the market. Under the partnership, the streaming solution is provided under a limited-time exclusivity arrangement in Deutsche Telekom's footprint markets.
- Deutsche Telekom is also partnering up with **Nreal**, an incredibly innovative provider of mixed reality hardware and software with multiple accolades to its name including as a winner at the CES Innovation Awards. Under the partnership with Nreal, Deutsche Telekom has developed a variety of mixed reality solutions for gaming, entertainment, and productivity, which offer our customers the opportunity in our shops and at other locations to experience the huge potential of our 5G networks first hand.
- **TM Forum** is a leading global alliance of over 700 companies working together to standardize application integration for service providers from the information and telecommunications technology sectors. As a TM Forum member, Deutsche Telekom is a signatory to the Open API Manifesto and its contributions include working with co-members to further develop the standard for open APIs. Open APIs promote better interoperability with partners and help to standardize the integration points between software applications. This is an essential piece of the puzzle both in terms of establishing cross-industry component recycling and ensuring the integration capability of innovations.
- Deutsche Telekom joined the 1000+ Solutions Challenge Alliance of the **Solar Impulse Foundation** in order to identify and promote technologies to reduce carbon emissions in the ICT sector. We are working hand in hand with the Foundation to accelerate the rollout of sustainable and profitable solutions for the ICT industry. We will also make use of these solutions to help achieve our own climate targets.

3. Start-up funding SDG 9 RELATIONSHIPS

As Deutsche Telekom's leading start-up program, the tech incubator **hubraum** puts external start-ups in touch with the relevant business units in our Group, so that together they can offer innovative products to consumers and business customers. To this end, hubraum provides the start-ups with seed financing from its own investment fund and targeted innovation programs geared to our strategic growth areas and technologies.

Since founding hubraum in 2012, we have set up a strategic investment portfolio of over 30 companies and worked together closely with around another 350 start-ups from Europe and Israel in areas such as the real-time gigabit society (e.g., 5G and edge cloud), the smart data economy (e.g., AI and process automation), and the Internet of Things (e.g., NB-IoT and Industry 4.0). With Europe's first 5G networks and edge cloud infrastructure, the hubraum campus in Berlin offers start-ups not only co-working office space, but also exclusive access to our Group's networks, product platforms, and test data to help them build up their businesses faster. Launched in 2019, the hubraum 5G prototyping initiative was continued in 2020 with more specific programs:

B2B – Campus Network Program. Under the Campus Network Program, five start-ups were chosen to develop future applications for 5G campus networks in collaboration with Deutsche Telekom. The applications are to be implemented, for instance, at the Aachen-based Center Connected Industry (CCI), of which Deutsche Telekom is a member.

B2C – Consumer Entertainment Program. Starting in July 2020, seven start-ups worked on projects as part of our 5G Consumer Entertainment Program, the results of which were presented in early October 2020. The goal was to develop concrete 5G applications. The following start-ups received investment funding from Deutsche Telekom:

- In mid-2020, hubraum and its partners **Nreal**, **Qualcomm**, and **Unity** jointly hosted a mixed reality innovation program for start-ups. Over 150 start-ups from across the globe applied to be included on the program, with 14 teams accepted as the 2020 cohort. The participating teams were each given a pair of Nreal Light mixed reality glasses and were able to begin refining their ideas at the end of the year. They have until the Demo Day in spring 2021 to finalize their projects.
- Australian start-up **tagSpace** is already collaborating with n-tv, a news channel. The company is testing how to integrate conventional news content and dedicated specials – e.g., on the fall of the Berlin Wall – into an augmented reality (AR) app.
- Together with **Quake Capital**, a U.S.-based investor specializing in seed funding for early-stage start-ups, and Mediengruppe RTL, in 2020 seven start-ups were selected to test and evolve their ideas in Deutsche Telekom's live network as part of the 5G Consumer Entertainment innovation program. Their goal was to turn 5G into a first-hand experience for our customers. This three-month program was held around Deutsche Telekom's Headquarters in Bonn, where the start-ups were given access to 5G infrastructure for testing purposes.

- You can use the Dance Fight app developed by **Virtual Arts** to put your dance moves to the test and compete live against other dancers. People across the globe follow these dance contests and can vote for their personal favorites. Dance Fight is already available in the Apple and Google app stores in the United States.
- **MojiLaLa's** LeoAR app enables you to place 3D objects in the real world, letting virtual dinosaurs roam through Berlin, for example. Super RTL, a television channel, already uses this app, thus benefiting from the start-up program. German soccer team 1. FC Köln, too, is already testing integrating figures into one of the start-up's AR apps.

Another innovation program focusing on extended reality was launched in 2020 and is set to continue in 2021.

Innovation governance

Innovation cycles are getting shorter and shorter. As a result, we must be agile and flexible in how we manage and budget our innovation projects. We orient ourselves toward the best-practice approaches used by innovative start-ups and successful companies, and to the latest findings from research and academia.

Portfolio and Innovation Board

The Portfolio & Innovation Board (PIB) plays a central role in managing our innovations. This Group-wide body ensures that we set the right priorities by identifying and selecting the innovation projects for our Group and deciding on the method of implementation. Our efforts are guided primarily by the Group strategy and we create full transparency across the Group regarding our investments in innovation.

Corporate Innovation Fund

Our Corporate Innovation Fund (CIF) is managed centrally by the PIB. Similar to a venture capital approach, the CIF offers all business and product ideas generated within the Group a flexible and results-oriented form of funding for a specific project phase. The provision of an additional innovation budget allows us, for example, to fund new innovation projects at short notice and with little red tape. Such financing is granted independently of annual planning periods, and therefore intensifies our focus on market and customer requirements. Innovation can take place anywhere across Deutsche Telekom, as long as the proposed business and product ideas fit within our Group's central innovation focuses.

Investment Committee

We established the Investment Committee to speed up investment decisions on our multi-year innovation priorities. Its objective is to act like an (internal) venture capitalist. The Investment Committee allocates funding according to success, orienting itself to the approach used in the start-up industry and among venture capital investors, whereby raising new funding from capital investors is dependent on the venture's performance. This gives us the flexibility we need when developing innovation topics and focuses efforts on success. Funding is made available for the next project phase only when specific outcomes that are relevant to our customers are achieved.

Deutsche Telekom Capital Partners

Deutsche Telekom Capital Partners (DTCP), established in early 2015, is Deutsche Telekom's investment management group. It manages approximately USD 1.7 billion of assets and advises a portfolio of over 60 companies on behalf of Deutsche Telekom and other institutional investors. DTCP pursues two investment strategies: growth equity in Europe, the United States, and Asia, and investments in digital infrastructure in Europe. The prime motive for DTCP's investments is financial. For example, it acquires shares in companies still in the growth phase and aids those companies' further growth, with a view to selling its stake for a profit later on. DTCP also plays an active role in establishing business relations between the innovative portfolio companies and Deutsche Telekom in order to add value for both sides.

In the growth equity field, the focus on cloud-based software-as-a-service (SaaS) solutions for companies resulted in a positive development, not least due to the spike in the number of people working from home and to increasing digitalization. New additions to the growth equity portfolio included Aircall (call center software), Arctic Wolf Networks (corporate network security), Auth0 (single sign-on systems), Catenoid (online video), and Epsagon (app management). In addition, DTCP increased its stakes in the successful portfolio companies AppsFlyer (marketing analytics) and LeanIX (IT architecture suite). Through the entrance of a new majority shareholder in Pipedrive, a provider of CRM software, DTCP was able to divest part of its stake in the company. The successful investment in Community Fibre, a fiber-optic provider for the London metropolitan area, was DTCP's first in a fiber-optic network and another milestone in the field of digital infrastructure. Cell towers, fiber-optic networks, and data centers are set to form a focus of further DTCP investments.

The strategic investment fund Telekom Innovation Pool (TIP) is available for investments that are mainly strategically motivated. Advised by DTCP, Deutsche Telekom makes investments in and promotes business start-ups that have a strategic focus and clearly collaborate with the Group's business managers. TIP actively pursues long-term innovations for the Deutsche Telekom Group, particularly in the fields of software-defined networking (SDN) and the digitalization of business operations. In 2020, TIP made five new corporate investments: Cynet (network security), Everphone (rented mobile devices), RemoteMyApp (cloud-based gaming solutions), Weaveworks (Kubernetes services), and vHive (drone surveillance of business assets).

Patent portfolio
Patents are gaining more and more significance in the telecommunications industry. Our patent strategy has to keep pace with the constant evolution of market players and fields of activity. On the one hand, our Group's scope for action must be maintained. On the other, in addition to pursuing our own research and development activities, we want to pave the way to open innovation through collaborative projects and partnerships. National and international patent rights are vital for these types of activity. We are strongly dedicated to generating and maintaining our own patents. In the reporting year, Deutsche Telekom held a total of around 8,800 patent rights. We are continuing our intense efforts to develop and streamline our patent portfolio. This will secure the value of the rights we hold and ensure they are in line with our Group's strategic objectives. We have put in place a professional patent law management process to keep our patents safe.

Investment in research and development
Research and development (R&D) expenditure includes pre-production research and development, such as the search for alternative products, processes, systems, and services. By contrast, we do not class as R&D expenditure the costs of developing system and user software which is designed to improve productivity and make our business processes more effective. R&D expenditure in the Deutsche Telekom Group amounted to EUR 33.1 million in 2020 (2019: EUR 45.4 million). In 2020, our Group's investments in internally generated intangible assets to be capitalized were also up year-on-year at EUR 448.4 million compared with EUR 344.2 million for the previous year. These investments predominantly relate to internally developed software, mainly in our Group Headquarters & Group Services segment and our Systems Solutions operating segment.

Employees

Supporting people. Driving performance.
We at Deutsche Telekom are actively shaping the digitalization of society and are engaged in the cultural and digital transformation of our own company. In many areas, environmental effects, new technologies, and business models entail fundamental changes to our working world and the skills we require for it. Our aspiration is to steer this change process and, in doing so, shift the focus of attention to people. After all, it is our employees who make all the difference. In order to offer our customers not only outstanding products and services, but also excellent customer service, we need the very best employees – now and in the future. That is why we also have to remain an attractive employer for talented individuals. We need to create a working environment that encourages flexible, participative ways of working, and entrench a culture of learning that enables us to build up the new skills needed to meet current and future challenges.

Our priorities in 2020
1. Tackle the challenges posed by the coronavirus pandemic
2. Evolve our culture and design new working environments
3. Continue the long-term transformation of our workforce

In the following, we provide details of sample projects and initiatives designed with these priorities in mind.

Our HR work based on the priorities
1. Tackle the challenges posed by the coronavirus pandemic SDG 3 EMPLOYEES
Throughout 2020, the coronavirus pandemic compelled us to take special action to maintain our operational capability and protect our employees. The Group-wide measures described below were taken in collaboration with the Group Situation Center to prevent the spread of the pandemic, inform the workforce, and intervene where necessary. The Group Situation Center forms part of Deutsche Telekom's system for managing security incidents. It is responsible for coordinating, managing, and monitoring the measures taken to tackle serious threats; it reviews and evaluates the available information, and implements countermeasures – either directly, for example, as part of Deutsche Telekom Security's master incident management system, or by delegating responsibility to employees or units with the corresponding expertise.

Maintaining our operational capability. In order to maintain our operational capability, employees in the local organizations who are responsible for operating critical infrastructure and maintaining business-critical processes were assigned to teams at short notice and spread across various locations. In addition, 16,000 employees from the 49 service centers transitioned to working from home within one week, and a further up to 80,000 colleagues in Germany and up to 180,000 colleagues globally are also able to work remotely. This was made possible by the rapid rollout of mobile working options and IT support (new facilities for remote working were set up for 16,000 employees at short notice). In addition, country-specific measures were adopted in line with local requirements, e.g., risk bonuses, a monthly allowance for employees with direct customer contact (in Greece, North Macedonia, Croatia, and Hungary, for instance), the introduction of short-time working, and the transfer of staff between key areas such as shops and service centers. Our 7,000 field staff – equipped with appropriate protective gear and information for customers (such as the recommendation to air the premises before the technician's visit) – continued calling on customers to configure connections, rectify faults, or optimize their WiFi so they could work from home (#MagentaHelden (magenta heroes)). As a token of its appreciation, the Board of Management of Deutsche Telekom AG decided to award all active employees (non-civil servants, trainees, civil servants, and in exceptional cases also loan and temporary staff) – with the exception of the United States operating segment – a special coronavirus bonus of EUR 500 each.

Measures to protect employees and ensure hygiene. Measures that are key to preventing the spread of the pandemic within the Group included the precautionary quarantining at home of suspected coronavirus cases, issuing protective clothing to employees (especially service personnel and those working in our shops), supplying all employees with everyday masks, and providing disinfectant. As early as in spring 2020, employees were obligated to wear masks in the office and the frequency of cleaning was ramped up significantly. The maximum occupancy at meetings was reduced to match the corresponding room size so as to enable proper physical distancing. Beyond that, business travel to high-risk COVID-19 destinations was stopped at an early stage.

Information and offers of support. We were for the most part able to stop the spread of coronavirus within the Group by providing all relevant contacts at the local organizations with daily briefings from the Group Situation Center, reporting all suspected and actual cases of illness to the latter, and putting in place a process to intervene in confirmed cases. Our constant efforts to inform and protect all our employees and establish rules of conduct were supplemented and reinforced by a personal Coronavirus Update newsletter issued by our Board of Management member for Human Resources and Legal Affairs. We also made use of our extensive network with other DAX-listed companies and the world of science to continually evolve our practices and share our own best practice with other companies. Above and beyond that, we supported our employees and managers by providing them with virtual formats on topics such as leadership, remote collaboration, and resilience (for instance, the online seminar “Starke Psyche (A strong psyche)”) and by setting up additional IT support channels and a helpline for dealing with psychological problems. Moreover, we were able to offer all our employees in Germany a regular opportunity to chat online with a virologist and hygiene expert from the University of Bonn. This live chat option not only provided the participants with a rundown of the current situation, but also covered key topics, gave recommendations on how to behave, provided answers to employees’ questions, and dealt with the consequences for the “new normal” in working life at Deutsche Telekom. We were also able to provide parents with a free one-year premium license for Sofatutor, Germany’s largest online learning platform. SDG 4 EMPLOYEES

Social cohesion. Just how important social cohesion is for us has been evident throughout the course of the pandemic, especially during the lockdown phases. Interaction, sharing ideas, and just being together and having common experiences form the basis for innovation and creativity, and engender a feeling of safety and belonging. Since fall 2020, we have made targeted investments in initiatives to promote social cohesion. These include formats such as culture gigs (live concerts), virtual sporting and knowledge challenges, and virtual lunches with colleagues from different parts of the Company. We also offered our employees the opportunity to get together virtually for a digital Christmas party. More than 11,000 of our staff took part in the event via live stream.

Health rate and health management. As a result of the comprehensive measures taken, the Company’s health rate reached historic highs in May, June, and August 2020. What is more, the figures throughout 2020 were consistently higher than in the previous year. In 2020, Deutsche Telekom AG was once again honored with the Corporate Health Award, Germany’s most prestigious prize for excellence in corporate health management. A total of 352 employers across 15 industries took part in the demanding scientific selection process. Among the reasons given for the award this time around were our comprehensive, convincing, and targeted offerings, and our innovative ideas for responding to current trends and challenges – such as My Health Journey, an annual program for mental strength.

Employee satisfaction. According to data collected by the Group-wide employee survey conducted in 2019 (excluding T-Mobile US), our commitment index score – i.e., our measure of employee satisfaction – was good at 4.0 (on a scale from 1.0 to 5.0). We also conduct regular pulse surveys to obtain feedback from our employees. The survey conducted in November 2020 resulted in record figures in almost all areas: employee participation (120,000 colleagues or a return rate of 77 %) and top survey results regarding satisfaction (80 %), leadership quality (88 %), brand identity (85 %), learning (85 %), COVID-19 – information (94 %), COVID-19 – mobile working (88 %), and COVID-19 – protection (91 %).

Employee satisfaction (commitment index)[a]

	2019	2017
Group (excluding T-Mobile US)	4.0	4.1
Of which: Germany	4.1	4.1
Of which: international	3.9	4.1

[a] Commitment index according to the employee surveys carried out in 2019 and 2017.

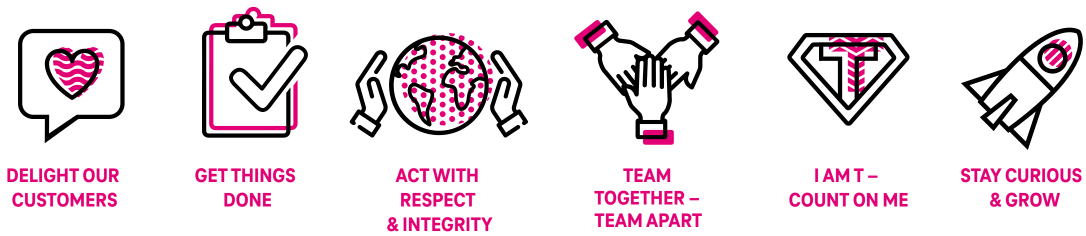
T-Mobile US conducts its own employee survey. The results of the survey conducted in 2020 (survey period: January through September, excluding former Sprint employees) showed that 92 % of respondents take pride in working for the company. 85 % said they would recommend T-Mobile US as a great place to work, and 84 % believe the Company inspires them to go above and beyond their usual work-related duties. These results are among the highest in the Group. T-Mobile US has been awarded numerous accolades in recent years for its appeal as an employer. In 2020, T-Mobile US was once again named Best Place to Work by the independent employee platform Glassdoor. In addition, T-Mobile US improved its position in the Fortune Best Companies to Work For top 100 list, moving up from 49 (2019) to 42 (2020). Ethisphere Institute named T-Mobile US one of the World's Most Ethical Companies for the twelfth year in a row. T-Mobile US also scored 100 in the Human Rights Campaign's Corporate Equality Index for the eighth time in a row, making it the best place to work in terms of equal treatment of homosexual, bisexual, and transgender people.

2. Evolve our culture and design new working environments SDG 8 EMPLOYEES

We are convinced that corporate culture is a key factor in a company's long-term success. That is why culture has always played a crucial role at Deutsche Telekom. But corporate culture must also reflect the changing needs of customers and employees. For this reason, we understand culture to be a process and not something static. In January 2020, we announced our corporate purpose: "We won't stop until everyone is connected." It has since proven itself to be a widely accepted cultural framework and, in times of physical distancing, has gained even more in importance.

Our Guiding Principles. Culture is part of the corporate DNA and, as such, influences not only our ways of working. That is what makes our Guiding Principles so important, leading us to reflect on our behavior on a daily basis and acting as a cultural indicator. When our updated Guiding Principles, revised in a dialog-driven process, were presented in February 2020, we could not have known just how quickly the coronavirus pandemic would put them to the test. Our living culture stood the test, providing our employees with support and guidance throughout the pandemic. Apart from a largely virtual, international Living Culture Day that scored over 16,000 mentions on social media, we offered numerous formats for focusing on corporate culture and implemented specific measures, for instance, digital collaboration formats and a redesigned learning platform.

Our six Guiding Principles



Designing new working environments. SDG 8 RELATIONSHIPS The coronavirus pandemic has dramatically changed where and how we work together. Even after the pandemic has passed, many of these changes will remain. After all, the new trails we have blazed have proven their worth. With that in mind, Deutsche Telekom and the Group Works Council agreed on a Manifesto on the new Way of Working, the goal of which is to maintain performance, employee satisfaction, and employer attractiveness:

1. We will take the best of both worlds: the type of work will determine the mix of mobile and in-person work, whether the latter is performed on the customers' premises, in our shops, or in the office. The share of mobile working is set to rise significantly, not just because it "works," but because it even enhances productivity in many areas. But real-life interaction, too, will remain a key component of our working life. That is because the success of creative collaboration, complex problem-solving, and team processes often hinges on physical proximity.
2. Our offices will become places of encounter: the office is set to remain the most important location for our identity. More than ever before, our office buildings will become places for teamwork, encounters, and social and creative interaction.
3. Digital tools will become even more important: digital collaboration tools have become our constant companions and key helpers in our daily work. For this reason, we will ramp up our Group-wide investment in IT tools, equipment, and enablement.
4. We will travel less: going forward, we will get by with fewer business trips, thus making a contribution to sustainability.
5. Our understanding of leadership will change: it will not be based on attendance and control, but on trust and transparency. We will face new challenges when it comes to virtual leadership and to leading hybrid teams. It will become even more important for our managers to create a safe, motivating "space," formulate clear objectives, provide feedback, and monitor results. We will offer a wide range of virtual tools to support our managers in this area.

3. Continue the long-term transformation of our workforce

It is our responsibility to ensure that we have the right employees in the right place at the right time, that they enjoy competitive conditions, and are able to grow and develop. In addition to both the transformation initiatives driven by digitalization and automation, and to staff reduction and restructuring measures, the decisive tools in achieving this goal are proactive total workforce management, the digitalization of our core processes, and massive investment in developing skills.

Major transformation initiatives. In 2020, we again succeeded in transforming individual business areas of the Group, e.g., Deutsche Telekom IT at T-Systems, and our consumer sales entity. Against the backdrop of digitalization and changing customer behavior, the difficult realignment of consumer sales was also implemented in a socially responsible manner. What is more, we successfully realigned our B2B telecommunications business and combined it within the Germany operating segment.

Collective bargaining round for 2020. In the midst of the coronavirus pandemic, we negotiated a new collective agreement in record time at the end of March 2020. The collective agreement applies nationwide to around 60,000 employees, trainees, and students on dual study programs. Despite the prevailing economic uncertainty, Deutsche Telekom's intention was to offer (planning) certainty early on both for the employees covered by the collective bargaining round and for the company itself, and send a clear and positive signal for the economy. In line with the ongoing push to digitalize our core processes, the collective bargaining round was conducted for the first time in virtual form.

Skills development. Our employees' skills and expertise are among our Company's most important resources and thus crucial to our business success. These skills must be geared to the future and kept up to date. We are responsible for providing an environment in which employee skills can be transformed. With the introduction of a Global Job Architecture (GJA) and the continued harmonization of collective agreements on remuneration, the ver.di trade union, the Group Works Council, and Deutsche Telekom were jointly responding to the challenges this future presents. The aim of the GJA is to comprehensively consolidate and simplify the function structures. Under the GJA, all jobs in the Group are grouped together according to job families and job clusters. This is important to allow all jobs in the Group to be clearly identified. With the help of these tools, 7,500 required future profiles were identified, which will now be used for recruitment and reskilling/upskilling initiatives. Simplifying and standardizing our Group-wide job profiles is also a key prerequisite for rolling out our skills management program SkillsUP! in selected corporate units. Personal development talks help pinpoint where individual skills are lacking, while development plans can be continuously adapted by means of tailored training programs. Strategic, qualitative HR planning takes changing market conditions into account to plot the right course when investing in the skills that will be needed going forward. That includes cutting-edge performance management that enables an ongoing dialog between managers and employees.

Youlearn. Two of our top priorities are to digitalize our portfolio of training courses and strengthen our culture of learning. With our Youlearn initiative – aimed at entrenching self-paced learning in our everyday working life – we have significantly enhanced our employees' options for upgrading their skills. Employees in Germany and our European national companies devoted over 2.3 million hours of their time to learning in the reporting year – that was 2.4 working days per employee on average. That figure was down from the previous year due to the pandemic and the consequent cancellation of virtually all traditional classroom seminars from March 2020 onward. But the digital training courses developed with the Youlearn initiative helped us fill the gap in offerings and further increase acceptance of digital learning. SDG 4 EMPLOYEES

Percipio & Coursera. Yet, to achieve simplicity and take the digital transformation forward, we need new organizational forms, expertise, and a cultural change – in short, we need to master a whole host of new skills if we are to tackle current and future challenges. We tackled these developments head on with measures such as the introduction of the Youlearn initiative to promote a culture of self-paced learning in our everyday working life. What is more, we rolled out Percipio (an intelligent learning platform also dubbed the "Netflix of learning") and integrated Coursera as a provider of digital further-training courses offered by top-ranking universities, thus providing our employees with a high-quality training service. The increase in our digital learning rate from 46 % to 69 % and over 170,000 registrations for Percipio since the third quarter of 2019 validate our efforts in this area. We firmly believe that a state-of-the-art learning environment is central to our obligation as an employer to act responsibly. SDG 4 EMPLOYEES

Employer brand. We maintained our presence in the recruitment market in 2020 and, despite the coronavirus pandemic, stayed in contact with the talents in order to enhance trust in our employer brand. The crisis precipitated by coronavirus has changed the needs of both society as a whole and our target group of IT/NT talents, heightening the need for meaning, participation, and security. We integrated this change in values into our employer brand strategy, channeling it directly into specific employer messages. In our #IWILLNOTSTOP campaign, mission and purpose as well as meaningful work have already become part and parcel of the promise we make as an employer. The coronavirus pandemic further strengthened our focus on digital employer branding. New digital formats were developed to get Deutsche Telekom's culture as an employer across.

Recruiting and onboarding. We want to be the magnet for global digital talent. Even amid the coronavirus pandemic, we succeeded in recruiting around 800 new employees in Germany in 2020, including in the ICT sector, and 2,150 new trainees, a high percentage of whom have technical/IT backgrounds. A quick digital recruiting process with a positive digital candidate journey is the key to success here. Particularly during the pandemic, we relied on our motto "Stronger together" to reinvent our onboarding process. One highlight of this is the virtual global welcome event entitled "New Unstoppables." Our international careers website is a platform offering job-seekers clear and transparent information, for example, on the digital/virtual recruiting process. We also make use of game-based assessments in the recruitment process. These are a new generation of psychometric tests in the form of online games and are being deployed in the context of our hiring process for the Start up! trainee program. In addition, we use digital tools that rank final university grades on the basis of algorithms, thus enabling a fair comparison. By addressing specific target groups, our recruiting strategy also aims to encourage more talented women to join our Company. 2020 marked the eighth time that female students of STEM subjects (science, technology, engineering, mathematics) from all over the world were able to compete for our Women's STEM Award. We are also involved in Femtec, a career program for female STEM students, and in the Global Digital Women network. SDG 5 EMPLOYEES We have shown that digital recruitment is a crucial success factor when it comes to responding rapidly to changing requirements and continuing to secure employees with critical profiles for the Company.

Practicing diversity. We are committed to equal opportunity and diversity at the Group. Promoting diversity – also in our management teams – is part of our identity. Our target to fill 30 % of management positions across the Group with women still applies. Across the Group, the proportion of women in middle and upper management stood at 27.1 % at the end of 2020. At 45 %, Deutsche Telekom AG had an above-average proportion of women on its Supervisory Board, and with women occupying 37.5 % of the positions on its Board of Management, the Company occupies first place among the 30 DAX-listed companies. SDG 5 EMPLOYEES

Diversity is a key success factor and goes beyond just gender. In order to develop successful products, we must understand the needs of our customers, and we can do that only if our Company is just as diverse as society. The Human Resources and Legal Affairs Board of Management department is responsible for the Group's diversity and inclusion strategy, while a large number of diversity allies in the individual subsidiaries and different countries are tasked with putting the corresponding measures into practice and implementing the relevant offerings. In early summer 2020, our Board of Management member for Human Resources launched the RethinkDiversity initiative to take a creative approach to developing and implementing further measures and projects. It includes, for example, the establishment of a diverse talent pool, with women making up at least 40 % of the members, and a program in which top male managers are assigned to mentor up-and-coming female employees destined to take over as the next generation of managers. We thus also focus on diversity aspects – such as age, cultural background, and gender – in the succession management process at senior management level. When it comes to diversity and inclusion, we continue to pursue a steady, long-term policy, also collaborating with external diversity partners such as the Competence Center Technology-Diversity-Equal Opportunities e.V. The goal is for everyone to be able to achieve their full potential and to make diverse management teams our "new normal."

levelUP! In the age of digitalization, managers must possess skills and methods that differ greatly from those needed in the analog world. That is why we support our executives with levelUP!, an innovative digital further-training service for successful leadership in the digital age. levelUP! comprises modules that can be combined as required. Knowledge is shared primarily via interactive, digital learning formats in combination with classroom training. In 2019, the levelUP! program underwent a change of content, focusing primarily on agile leadership. Some 1,200 executives participated in the first two rounds of this latest incarnation of the levelUP! program. In 2020, the program was held in a fully digital format for the first time.

Due to the huge success of levelUP!NextGeneration in 2019, we offered the program again in 2020. In view of the particular challenges posed by the coronavirus pandemic, we decided to offer this program for motivated high potentials in a purely digital form. 500 employees from all over the world took part in this four-month development program, which features digital learning and imparts innovative, inspiring, and concrete leadership topics and skills. levelUP!NextGeneration also helps us strengthen and encourage intragroup and cross-segment collaboration. SDG 4 EMPLOYEES

Major HR and CR awards in 2020 SDG 17 RELATIONSHIPS

- **Corporate Equality Index 2020**
For the eighth consecutive time, T-Mobile US earned the top score of 100 in the Human Rights Campaign Foundation's Corporate Equality Index.
- **World's Most Ethical Companies 2020**
Ethisphere Institute named T-Mobile US one of the World's Most Ethical Companies for the twelfth year in a row.
- **Comenius Award 2020**
Deutsche Telekom won two Comenius Awards for its digital education media Scroller-TV and children's magazine Scroller.
- **FTSE4Good Index**
For the twelfth consecutive year, OTE in Greece was ranked one of the leading companies for its commitment to environmental protection, a caring society, and corporate governance.
- **Corporate Health Award 2020**
Deutsche Telekom received the award for excellence in health and safety management.
- **"Favorite employer" in Kurier ranking**
For the second time in a row, Magenta Telekom (T-Mobile Austria) was named "favorite employer" by the Austrian daily newspaper Kurier.
- **Building Public Trust Award 2020**
The PwC jury honored Deutsche Telekom as the DAX 30 company with the best climate reporting.
- **Deutscher Personalwirtschaftspreis**
With its cutting-edge HR apps, Deutsche Telekom Services Europe took first place in the Digital HR category of the German HR management award.

2020

- **DAX ESG 50 Index**
Deutsche Telekom was added to the new sustainability index.
- **Excellence in Challenges by Selectio**
Hrvatski Telekom honored with Excellence in Challenges award by the leading HR consulting company in Croatia.
- **CSR Index 2020**
Telekom Romania was awarded a Gold Level prize for corporate sustainability and social responsibility in Romania.
- **Power of Attraction Award 2020**
T-Mobile Polska came out on top in the Recruiting Process category at the award ceremony organized by Puls Biznesu, a Polish magazine.
- **Smart City Poland Award**
T-Mobile Polska came first in the Environmental Protection category with a project for smart trash cans.
- **Top Employer 2020**
Magenta Telekom (T-Mobile Austria) took third place in Austria's Top Employer awards.
- **"Best employee training in Germany" in Capital magazine's ranking**
Magazine ranked Deutsche Telekom as leading provider of training in 2020, in particular for its trainee courses and dual study programs.
- **Sustainable Company 2021**
Magenta Telekom (T-Mobile Austria) was given the Kurier newspaper's seal of approval for its climate protection activities, and its social and economic responsibility.

For an overview of which sustainability indexes list the T-Share, please refer to the section "Corporate responsibility and non-financial statement."

Headcount development

The Group's headcount increased by 7.5 % compared with the end of the prior year, mainly due to the integration of Sprint employees in the United States. The developments were varied across our segments: In our Germany operating segment the number of employees decreased by 4.4 % compared with 2019 due to the take-up of socially responsible instruments in connection with staff restructuring, such as the dedicated retirement and phased retirement programs. The total number of employees in our United States operating segment increased by 50.7 % compared with December 31, 2019, primarily due to the integration of the Sprint workforce. In our Europe operating segment, the headcount was down 7.1 % compared with the end of the prior year, with staff levels decreasing in Hungary, Greece, and Romania in particular. The total headcount in our Systems Solutions operating segment was down 4.7 % against year-end 2019, primarily as a result of efficiency enhancement measures. In the Group Development operating segment, the 3.1 % increase in the number of employees can be attributed to the insourcing of activities previously carried out externally to achieve cost savings at T-Mobile Netherlands. The headcount in the Group Headquarters & Group Services segment was down 4.1 % compared with the end of 2019, mainly due to ongoing staff restructuring at Vivento.

Workforce statistics

Headcount development

		Dec. 31, 2020	Dec. 31, 2019	Change %	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2016
FTEs in the Group		**226,291**	**210,533**	**7.5**	**215,675**	**217,349**	**218,341**
Of which: Deutsche Telekom AG		15,374	17,461	(12.0)	19,259	21,428	22,571
Of which: civil servants (in Germany, with an active service relationship)		10,583	12,153	(12.9)	13,507	15,482	15,999
Germany operating segment		66,051	69,117	(4.4)	71,549	64,798	66,410
United States operating segment		71,303	47,312	50.7	46,871	45,888	44,820
Europe operating segment		41,273	44,410	(7.1)	47,964	47,421	46,808
Systems Solutions operating segment		28,395	29,800	(4.7)	28,945	37,924	37,472
Group Development operating segment		2,684	2,603	3.1	1,976	1,967	2,572
Group Headquarters & Group Services		16,585	17,292	(4.1)	18,370	19,351	20,258
Breakdown by geographic area							
Germany		89,032	94,111	(5.4)	98,092	101,901	104,662
International		137,258	116,422	17.9	117,582	115,448	113,679
Of which: other EU member states		55,816	58,743	(5.0)	61,249	59,952	59,456
Of which: rest of Europe		2,168	2,055	5.5	2,471	2,620	2,581
Of which: North America		71,617	47,652	50.3	47,245	46,332	45,364
Of which: rest of world		7,658	7,971	(3.9)	6,618	6,543	6,278
Natural attrition	%	**3.9**	**5.3**	**(26.4)**	**5.1**	**4.7**	**4.0**
Of which: Germany	%	2.0	2.3	(13.9)	1.9	1.7	1.4
Of which: international	%	6.6	9.5	(30.5)	9.8	9.2	8.1
Productivity trend[a]							
Net revenue per employee	thousands of €	452	378	19.4	350	346	331

[a] Based on average number of employees.

Personnel costs

billions of €

		2020	2019	Change %	2018	2017	2016
Personnel costs in the Group		18.9	16.7	12.7	16.4	15.5	16.4
Of which: Germany		8.8	8.7	0.7	9.2	8.5	9.8
Of which: international		10.1	8.0	25.7	7.3	7.0	6.6
Special factors[a]		1.8	1.0	77.0	1.2	0.6	1.6
Personnel costs in the Group (adjusted for special factors)		17.0	15.7	8.2	15.2	14.9	14.8
Net revenue		101.0	80.5	25.4	75.7	74.9	73.1
Adjusted personnel cost ratio	%	**16.8**	**19.5**	**(13.7)**	**20.1**	**19.9**	**20.3**
Personnel costs at Deutsche Telekom AG under German GAAP		**2.3**	**2.3**	**(1.5)**	**2.5**	**2.7**	**3.5**

[a] Expenses for staff-related measures.

Forecast[1]

Statement by the Board of Management on the expected development of the Group

In 2020, we broke new ground: the business combination of T-Mobile US and Sprint has made us a Group generating revenue of over EUR 100 billion, with almost 230,000 employees worldwide and a unique 5G spectrum position on our most important mobile communications markets. At the same time, we successfully continued our growth course on both sides of the Atlantic despite the difficult economic environment as a result of the coronavirus pandemic. Furthermore, it is already clear that the synergies arising from the business combination of T-Mobile US and Sprint are impacting on our results faster than previously expected. We want to use this strong starting position going forwards to underpin our success with solid financial growth rates, further extend our technology leadership with the best state-of-the-art networks, and thereby continue to systematically implement our Leading European Telco strategy.

As communicated at our 2018 Capital Markets Day, we are targeting the following compound annual growth rates (CAGR) for the period from 2017 through 2021 – taking into account the implications of the business combination of T-Mobile US and Sprint:

- **Revenue:** 1 to 2 %
- **Adjusted EBITDA:** 2 to 4 %
- **Free cash flow (before dividend payments and spectrum investment):** around 10 %

For 2021, we expect to post the following year-on-year trends, assuming a comparable consolidated group and constant exchange rates:

- **Revenue** is likely to increase again slightly in 2021. We expect service revenue to increase.
- **Adjusted EBITDA AL** is expected to be EUR 37.0 billion in 2021. In the reporting year, adjusted EBITDA AL came in at EUR 35.0 billion; on a like-for-like basis, i.e., adjusted for comparability with the adjusted EBITDA AL forecast for 2021, adjusted EBITDA AL stood at EUR 37.6 billion.
- **Free cash flow AL** is expected to grow to around EUR 8.0 billion in 2021. Free cash flow AL in 2020 was EUR 6.3 billion; on a like-for-like basis, i.e., adjusted for comparability with the free cash flow AL forecast for 2021, free cash flow AL stood at EUR 6.6 billion.

Economic outlook

In its economic forecast from January 2021, the International Monetary Fund (IMF) expects global economic growth to return to 5.5 % in 2021 after the historic downturn in 2020. We also expect to see a tangible economic recovery in our core markets, although it will likely be the end of 2021/the start of 2022 before economic activity returns to pre-coronavirus levels.

Forecast on the development of GDP and the unemployment/non-employment rates in our core markets for 2021 and 2022

%	GDP for 2021 compared with 2020	GDP for 2022 compared with 2021	Unemployment/ non-employment rate in 2021	Unemployment/ non-employment rate in 2022
Germany	3.7	3.6	6.1	5.7
United States	4.4	3.4	6.0	4.8
Greece	3.8	5.3	17.5	16.7
Romania	4.0	4.9	6.2	5.1
Hungary	4.4	4.6	4.4	3.9
Poland	4.1	4.6	5.3	4.1
Czech Republic	3.6	4.9	3.3	3.2
Croatia	4.7	5.0	7.5	6.9
Netherlands	2.8	2.9	6.4	6.1
Slovakia	4.7	4.4	7.8	7.1
Austria	3.4	3.6	5.1	4.9

Source: Consensus Economics, European Commission; last revised: January 2021.
The unemployment rate for Germany and the non-employment rates for the other countries are presented in conformance with ILO standards.

[1] The forecasts contain forward-looking statements that reflect management's current views with respect to future events. Words such as "assume," "anticipate," "believe," "estimate," "expect," "intend," "may," "could," "plan," "project," "should," "want," and similar expressions identify forward-looking statements. These forward-looking statements include statements on the expected development of revenue, EBIT, EBITDA after leases, adjusted EBITDA after leases, ROCE, cash capex, and free cash flow after leases. Such statements are subject to risks and uncertainties, such as an economic downturn in Europe or North America, changes in exchange and interest rates, the outcome of disputes in which Deutsche Telekom is involved, and competitive and regulatory developments. Some uncertainties or other imponderables that might influence Deutsche Telekom's ability to achieve its objectives, are described in the "Risk and opportunities management" section of the combined management report and in the "Disclaimer" at the end of the Annual Report. Should these or other uncertainties and imponderables materialize, or the assumptions underlying any of these statements prove incorrect, the actual results may be materially different from those expressed or implied by such statements. We do not guarantee that our forward-looking statements will prove correct. The forward-looking statements presented here are based on the future structure of the Group, without regard to significant acquisitions, disposals, business combinations, or joint ventures that may arise at a later date. These statements are made with respect to conditions as of the date of this document's publication. Without prejudice to existing obligations under capital market law, we do not intend, or assume any obligation, to update forward-looking statements.

Expectations for the Group

Expectations up to 2022. We expect profitable growth to continue over the next two years. This will provide a sound basis for achieving our financial ambitions – as communicated at our 2018 Capital Markets Day and taking into account the implications of the business combination of T-Mobile US and Sprint.

We expect our **financial performance indicators** to develop as follows in 2021 and 2022:

- **Revenue** should increase slightly year-on-year in 2021 and remain stable in 2022. The forecast for 2021 is based on a slight increase in revenue in the Germany, United States, and Group Development operating segments. Revenue is expected to remain stable in the Europe operating segment and to decline slightly in the Systems Solutions operating segment in 2021. Then in 2022, we expect revenue to increase slightly in the Germany operating segment and to increase in Group Development. In our other operating segments, revenue is expected to remain stable in 2022. Service revenue is projected to increase year-on-year in both 2021 and 2022.
- **Adjusted EBITDA AL** is expected to come in at around EUR 37.0 billion in 2021 and to rise in 2022. In the next two years, adjusted EBITDA AL will be negatively affected by the gradual exit from the business model of terminal equipment leases in the United States, with revenues from terminal equipment leases being offset primarily by the depreciation of the capitalized terminal devices on the expenses side. Terminal equipment leases were a major pillar, in particular, at Sprint. In its place, marketing activities are set to shift increasingly toward terminal equipment sold under installment plans.
- We are forecasting a slight decrease for EBIT in 2021. The partial reversal of impairment losses on spectrum licenses at T-Mobile US had a strong positive effect in the reporting year. We expect EBIT to rise sharply again in 2022. The expiry of the amortization of UMTS licenses in the Germany operating segment will contribute to the positive trend.
- **Return on capital employed (ROCE)** is expected to decline in 2021 and return to growth in 2022. Hence, we expect to achieve our target for ROCE to be higher than the expected weighted average cost of capital (WACC) again in 2022, following a briefly increased burden in 2021 from the integration costs arising from the business combination of T-Mobile US and Sprint.
- Our investments – measured in terms of **cash capex** (before spectrum investment) – are expected to amount to around EUR 18.4 billion in 2021 and to remain stable in 2022. We want to continue investing heavily in building out our network infrastructure in Germany, the United States, and Europe in order to safeguard our technology leadership in the long term.
- **Free cash flow AL** (before dividend payments and spectrum investment) is expected to reach around EUR 8.0 billion in 2021. We also expect a strong increase in free cash flow AL in 2022 due to good operational development.
- At the end of 2020, we had the following **ratings**: BBB with a stable outlook (Standard & Poor's – S&P); BBB+ with a stable outlook (Fitch); and Baa1 with a negative outlook (Moody's). Maintaining an investment grade rating within the A– to BBB range will enable us to retain access to the international capital markets and is thus a key component of our finance strategy.
- We are forecasting a slight decrease for our **EPS** (adjusted for special factors) in 2021. The EPS for 2020 includes a positive effect from the subsequent measurement of the stock options to buy shares in T-Mobile US received from SoftBank in June 2020. We expect to see a strong increase in adjusted EPS in 2022.

Our debt issuance program puts us in a position to place issues in the international capital markets at short notice, while our commercial paper program enables us to issue short-term papers in the money market. T-Mobile US is being refinanced primarily in the form of senior secured and unsecured notes.

Bonds and loans in the total amount of EUR 7.2 billion and EUR 7.0 billion will fall due for repayment in 2021 and 2022, respectively. A number of T-Mobile US bonds include issuer termination rights. If the premature termination and refinancing of these bonds result in economic gains, this could give rise to further refinancing requirements. We plan to issue new bonds in various currencies. The exact financing transactions will depend on developments in the international finance markets. In January 2021, T-Mobile US placed unsecured notes with a total volume of USD 3 billion on the market. We also intend to cover part of our liquidity requirements by issuing commercial paper.

We want to continue leveraging economies of scale and synergies through suitable partnerships or appropriate acquisitions in our footprint markets. There are no plans, however, to expand into emerging markets. We will continue to subject our existing partnerships and equity investments to regular strategic reassessments with a view to maximizing the value of our Company.

Our expectations for the period until 2022 for the Group and the operating segments as regards our financial and non-financial performance indicators are shown in the following tables. They assume a comparable consolidated group and constant exchange rates. If the economic situation should deteriorate or any unforeseen state or regulatory interventions arise, the expectations expressed here may change accordingly. Given the level of macroeconomic uncertainty in the context of the continuation of the coronavirus pandemic, we cannot rule out the possibility of deviations either. All trends denote year-on-year changes. To indicate the intensity and trends of our forecasts, we apply the following assessment matrix: strong decrease, decrease, slight decrease, stable trend, slight increase, increase, strong increase.

Financial performance indicators

		Results in 2020	Pro forma in 2020[a]	Expectations for 2021[b]	Expectations for 2022[b]
Net revenue					
Group	billions of €	101.0	106.7	slight increase	stable trend
Germany	billions of €	23.8	23.6	slight increase	slight increase
United States (in local currency)	billions of $	70.1	76.4	slight increase	stable trend
Europe	billions of €	11.3	11.3	stable trend	stable trend
Systems Solutions	billions of €	4.2	4.2	slight decrease	stable trend
Group Development	billions of €	2.9	3.0	slight increase	increase
Service revenues					
Group	billions of €	78.9	83.3	increase	increase
United States (in local currency)	billions of $	50.6	55.4	increase	increase
Profit (loss) from operations (EBIT)	billions of €	12.8	13.5	slight decrease	strong increase
EBITDA AL	billions of €	33.2	35.9	decrease	slight increase
EBITDA AL (adjusted for special factors)					
Group	billions of €	35.0	37.6	37.0	increase
Germany	billions of €	9.2	9.2	9.4	increase
United States (in local currency)	billions of $	24.0	26.8	25.8	increase
Europe	billions of €	3.9	3.9	3.9	slight increase
Systems Solutions	billions of €	0.2	0.3	0.3	slight increase
Group Development	billions of €	1.1	1.2	1.2	increase
ROCE	%	4.6		decrease	increase
Cash capex (before spectrum investment)					
Group	billions of €	17.0	17.8	18.4	stable trend
Germany	billions of €	4.2	4.2	stable trend	increase
United States (in local currency)	billions of $	10.7	11.7	increase	stable trend
Europe	billions of €	1.8	1.8	slight decrease	stable trend
Systems Solutions	billions of €	0.3	0.2	stable trend	stable trend
Group Development	billions of €	0.5	0.5	strong increase	increase
Free cash flow AL (before dividend payments and spectrum investment)	billions of €	6.3	6.6	around 8.0	strong increase
Rating					
Standard & Poor's, Fitch		BBB, BBB+		from A- to BBB	from A- to BBB
Moody's		Baa1		from A3 to Baa2	from A3 to Baa2
Other					
Dividend per share[c, d]	€	0.60		Dividend follows EPS (adjusted for special factors) growth, minimum of € 0.60	Dependent on finance strategy[e]
EPS (adjusted for special factors)	€	1.20		slight decrease	strong increase
Equity ratio	%	27.4		25 to 35	25 to 35
Relative debt		2.78x		> 2.75x[f]	> 2.75x[f]

[a] Significant changes in the organizational structure and in the composition of the consolidated Group included up to the date of preparation of the consolidated financial statements and the combined management report (e.g., the business combination with Sprint in the course of the year and the divestiture of Sprint's prepaid business, the acquisition of Simpel, the reassignment of the growth area Internet of Things (IoT) to the Germany operating segment, and the reassignment of the Austrian cell tower business to the Group Development operating segment).

[b] On a comparable basis.

[c] The expectation regarding the dividend per share refers to the respective financial year indicated.

[d] Subject to approval by the relevant bodies and the fulfillment of other legal requirements.

[e] We will provide information about the further development of our finance strategy for the years following 2021 at our Capital Markets Day, which is planned for 2021.

[f] Deviation from the target range of 2.25–2.75x for a short period due to the business combination of T-Mobile US and Sprint.

Non-financial performance indicators

		Results in 2020	Pro forma in 2020[a]	Expectations for 2021	Expectations for 2022
Group					
Customer satisfaction (TRI*M index)		72.2		slight increase	slight increase
Employee satisfaction (commitment index)		4.0		stable trend	stable trend
Fixed-network and mobile customers					
Germany					
Mobile customers	millions	48.5	48.5	increase	increase
Fixed-network lines	millions	17.6	17.6	stable trend	slight decrease
Retail broadband lines	millions	14.1	14.1	increase	increase
Television (IPTV, satellite)	millions	3.9	3.9	increase	increase
United States					
Postpaid customers	millions	81.4	81.4	increase	increase
Prepaid customers	millions	20.7	20.7	increase	increase
Europe					
Mobile customers	millions	45.6	45.6	slight increase	increase
Fixed-network lines	millions	9.1	9.1	stable trend	stable trend
Broadband customers	millions	7.0	7.0	increase	increase
Television (IPTV, satellite, cable)	millions	5.1	5.1	increase	increase
Systems Solutions					
Order entry	billions of €	4.6	4.6	stable trend	slight increase
ESG KPIs					
Total CO_2e emissions (Scope 1+2)	kt CO_2e	2,512		strong decrease	strong decrease
Energy Intensity ESG KPI	kWh/terabyte	119		strong decrease	strong decrease
Carbon Intensity ESG KPI	kg CO_2/terabyte	23		strong decrease	strong decrease
Order Volume Verified as Non-Critical ESG KPI	%	62		increase	increase

[a] Significant changes in the organizational structure and in the composition of the consolidated Group included up to the date of preparation of the consolidated financial statements and the combined management report.

For further information on the development of the non-financial performance indicators of our operating segments, please refer to the section "Expectations for the operating segments."

In both 2021 and 2022, we intend to achieve a moderate improvement in **customer loyalty/satisfaction** – which is measured using the **TRI*M index** performance indicator.

Having achieved a high level of 4.0 – on a scale of 1.0 to 5.0 – on the **commitment index** in the 2019 employee survey, and in view of the results of the pulse surveys conducted in 2020, we expect the positive response of our employees regarding our Company to remain stable in the next employee survey in 2021.

For further information on our ESG KPIs and our expectations, please refer to the section "Corporate responsibility and non-financial statement."

Our planning is based on the following exchange rates:

Currency		Exchange rate
Croatian kuna	HRK	7.54
Polish zloty	PLN	4.44
Czech koruna	CZK	26.46
Hungarian forint	HUF	351.20
U.S. dollar	USD	1.14

Expectations for Deutsche Telekom AG. The development of business at Deutsche Telekom AG, the Group's parent company, is reflected particularly in its service relationships with its subsidiaries, the results of the subsidiaries' domestic reporting units, and other income from subsidiaries, and from associated and related companies. In other words, our subsidiaries' results from operations and the opportunities and challenges they face are key factors shaping the future development of Deutsche Telekom AG's figures. Accordingly, in addition to our expectations for the Group, the expectations described on the following pages concerning the operating segments' revenue and earnings – such as strong competition, regulatory intervention, market and economic expectations, etc. – have an impact on our expectations concerning the development of Deutsche Telekom AG's future income after taxes.

For the 2020 financial year, we will propose a dividend of EUR 0.60 per dividend-bearing share, which will also serve as a baseline for the dividend for the 2021 financial year. Since the 2019 financial year, the dividend has reflected relative growth in adjusted earnings per share. Based on the aforementioned expectations for our operating segments and the resulting effects, and taking existing retained earnings into account, Deutsche Telekom AG expects to distribute a dividend of at least EUR 0.60 per dividend-bearing share for the 2021 financial year, subject to approval by the relevant bodies and the fulfillment of other legal requirements.

Expectations for the operating segments

Germany

The German market for telecommunications services again saw a slight further contraction of 0.4 % in 2020 largely driven by the impact of the coronavirus pandemic. Revenue losses were recorded primarily due to declines in roaming and visitor revenues. The downward trend in revenue is expected to slow to -0.2% in 2021. Ongoing revenue losses due to the pandemic, regulatory effects, and the decline in traditional fixed-network telephony will not be fully offset by still growing demand for mobile data volumes and faster connectivity in the consumer and business customer area. In the German mobile market, revenues are expected to increase by 0.4 % in 2021 (source: EITO).

For the wider ICT market, which covers IT services as well as telecommunications, EITO forecasts growth of 1.6 % for 2021. This plus will primarily result from IT market growth, which, at 2.3 %, will continue to exceed growth in telecommunications revenues in 2021. The already high demand regarding services for business customers (e.g., outsourcing, project business, consulting) and software-based services (virtualization and cloud business, e.g., in the form of software as a service, platform as a service, or infrastructure as a service) has gained further momentum following the rise in internet use prompted by the coronavirus pandemic.

Innovative integrated products and attractive supplementary services – such as TV and streaming options, and smart-home services – are becoming increasingly important for our competitive position with consumers, while cloud services, security applications, and solutions for Industry 4.0 are gaining in significance with business customers. We set ourselves apart from other providers with our broad range of products and services, rate plan innovations like our new convergent offering MagentaEINS Plus, and innovative fixed-network products like our Smart Speaker Mini. We are the first telecommunications company in Germany to have tackled the topic of sustainability head on in the form of our “we care” sustainability label, which we launched to improve the transparency of our products.

The mobile communications market in Germany is currently dominated by three providers, each with its own network infrastructure, who deploy 4G/LTE and 5G technology to ensure that the majority of the population has access to high-speed mobile Internet. At the spectrum auction that concluded on June 12, 2019, Drillisch Netz AG, a subsidiary of United Internet AG, acquired mobile spectrum and has announced its intention to set up a fourth mobile network. This is not a new market player, as United Internet AG is already active on the market as a service provider with around 10 million customers. It will presumably take years to build-up its own mobile network and United Internet has announced it intends to make use of wholesale national roaming services while it does so. United Internet is currently in negotiations with all three network operators regarding these wholesale services.

By contrast, the fixed-network broadband market hosts a large number of players with differing infrastructures – from national through to regional providers. We are assuming that competition from cable network operators will remain intense and that the number of providers who have their own DSL and fiber-optic networks will increase. Competition is also being increased by providers specializing in FTTH infrastructure.

In our Germany operating segment, we continue to work on our comprehensive transformation program and are aiming to secure our market position as the leading integrated telecommunications provider in Germany by means of innovative, competitive offers. We completed the IP migration in Germany at the end of 2020, creating a foundation from which we can effectively implement further technological innovations in the future. We will increasingly reduce the complexity of our products and processes through automation and digitalization initiatives, and ensure greater end-to-end responsibility. Our goal is to deliver the best customer experience with the best service. Hence, we continue to make systematic investments in the brand and shopping experience and are working to realign consumer sales. The aim of our realignment activities, which we started in 2020, is to improve the organizational structure and make the necessary workforce adjustments by the end of 2021. Nevertheless, we remain committed to our nationwide shop infrastructure in Germany, via which we offer personalized advice and one-on-one customer contact. Our network of shops is the largest of all our German competitors. Furthermore, as of January 1, 2021, Deutsche Telekom reassigned the business and profit responsibility for Deutsche Telekom IoT GmbH from the Systems Solutions operating segment to the Business Customers unit in the Germany operating segment. The Group subsidiary established in summer 2020 is responsible for the IoT business of Deutsche Telekom. This reassignment puts us in a position to serve the IoT market more quickly and thus to strengthen Deutsche Telekom’s position on this growth market. The combining of the Business Customers unit’s telecommunications services under one roof in mid-2020 brings us a step closer to our ambition of becoming the preferred partner for digitalization. From now on, small and large business customers as well as multinational corporations will increasingly be served worldwide with an integrated portfolio for telecommunications and IoT services. From fixed network and mobile communications through to IT, we plan to create one-stop integrated solutions professionally and fast that provide our customers with optimum, sustainable support in a digital world.

In the fixed network, we want to offer fiber-optic-based products to more and more customers, creating for them the best customer experience. Our Germany-wide IP-based network achieves high transmission bandwidths of up to one gigabit per second. In order to always offer our customers competitive high-speed lines, we increasingly invest in our fiber-optic network build-out. From 2021, we plan to build out fiber to the home (FTTH) to an average 2 million households per year. Our build-out will benefit both people in towns and cities and those in rural areas. What is more, we are working towards further partnerships to provide even more customers with high-bit-rate internet access – and setting a benchmark for sustainable broadband infrastructure.

In mobile communications, we are keeping our promise to build out the network and are therefore the leader in terms of network coverage, speeds, and customer experience. In total, two thirds of the population of Germany can already use this state-of-the-art mobile technology on the Telekom network. The 5G network is being built out with a combination of two spectrum bands. The 2.1 GHz band, which has wide reach, will provide high mobile bandwidths in rural areas in particular. The 3.6 GHz band offers high-speed 5G in densely populated areas like big cities. The service is already available in 26 German cities.

We want to set ourselves apart from our competitors by offering the best convergent connectivity. In September 2020, we extended our convergent offering with MagentaEINS Plus, thereby setting yet another benchmark – the first fully-integrated offering combining fixed network and mobile communications in one contract with more freedom, more to share, more simplicity, and more flexibility. When designing our products, we pay particular attention to consistently high quality, a simple rate plan structure, and the innovative evolution of our existing service portfolio. With the introduction of our new cloud gaming service, MagentaGaming, we offer customers the opportunity to access a wide-ranging games portfolio without downloads for a small monthly price. We are focusing on enhancing the performance of our rate plans and will orient the latter to the needs of our customers – for example, by expanding all our MagentaMobil rate plans to include StreamOn flat rates and higher data volumes, and by utilizing the 5G mobile communications standard.

In addition, our multi-brand strategy in mobile communications allows us to address the entire customer spectrum – from smart shoppers through to premium customers. We impress our business customers with our Business Mobile rate plans, which already include the new 5G standard and can be expanded with additional options catering exclusively to this target group.

We want to secure an ever larger share of the growing TV market, with a focus on our entertainment and exclusive streaming offers in the Megathek library on MagentaTV, i.e., a wide array of entertainment: from action to drama, from originals and exclusives to top international series and films, as well as the best of the German TV stations ARD and ZDF. In order to give our customers the best possible television experience, we are expanding our offering with streaming services and partners, such as TVNOW, Netflix, Prime Video, Sky, Disney+, DAZN, and Videoload. In this way, MagentaTV combines multiple entertainment worlds in one. To this end, we are investing in our IPTV platform and winning new customers with attractive content, services, and strong partnerships.

We want to remain the market leader in Germany in terms of revenue over the coming years and extend our lead through rising service revenues. We are responding to our customers' constantly growing demand for bandwidth and continuing to invest extensively in broadband networks, innovative products, and outstanding customer service. In our broadband business, revenues are constantly growing and customer satisfaction levels rising, and we want to continue this growth trend again in 2021. We will improve customer satisfaction by actively evolving our mobile services (e.g., Mein Magenta app) and ensuring seamless service across all channels (e.g., web, hotline, shop).

We expect revenue to grow slightly in our Germany operating segment in 2021 and 2022 alike, despite regulatory effects in our core business and tough competition. Our value drivers are growing mobile and TV revenues (a result of our multi-brand strategy), rising numbers of customers with high-speed lines, and revenue growth with business customers, for example, thanks to the positive trend in IT and cloud business. We want to continue expanding our fiber-optic services, both by means of business models with wholesale products (such as the contingent model) and through further partnerships.

We also anticipate that our growth initiatives in Germany will offset the volume-driven decline in revenue from traditional fixed-network business and that we will continue consolidating our position as market leader in mobile and fixed-network communications. Thanks to our outstanding network quality and the progress we are making with fiber-optic build-out, we expect to see an increase in the next two years in the number of mobile customers as well as growth in our broadband products, fueled by demand for TV and high-speed lines. Our initiatives to digitalize ICT solutions business for our business customers will continue enhancing revenues from IT and cloud services, and from M2M/IoT business. In wholesale business, we expect sales volumes to fall overall, mainly due to the fact that our wholesale customers are migrating their end customers to alternative cable and fiber-optic-based infrastructure. We nevertheless expect demand for our contingent model to be high.

In each of the next two years, we expect to post year-on-year increases in earnings in our Germany operating segment. For 2021, we expect adjusted EBITDA AL to increase to around EUR 9.4 billion, driven in particular by high-value revenue growth and a simultaneous reduction in indirect costs, mainly through digitalization and automation. Our adjusted EBITDA AL is likely to rise further in 2022. We are forecasting a slight improvement in the adjusted EBITDA AL margin through 2022.

Our course is set for innovation and growth: While we will continue to consistently promote investments in new technologies with great intensity in the future, we will wind down legacy systems, cutting costs in the process. Over the coming years, we will focus our investments on building out a forward-looking fixed-network and mobile infrastructure (e.g., FTTH and 5G). Our aim here will be to close gaps in the network in rural areas and provide urban centers with the high bandwidth they require. We want to continue this rollout efficiently and, to this end, are participating in funding programs. We expect our cash capex to remain stable year-on-year in 2021 and to increase year-on-year in 2022.

United States

The global economic slowdown of 2020 was reflected, although not severely, in the overall U.S. ICT market, declining from 2019 by 1.9 %. Growth was down or reversed across nearly all ICT sectors, including IT equipment and services, and total telecommunications infrastructure and services. Only the market value of voice and data services remained stable compared with 2019. Some reversals are forecast for 2021 – with growth expected in total market ICT growth, mobile data services, and telecommunications equipment.

The U.S. mobile market continues to be characterized by competition among the major mobile carriers – now numbering three after the successful merger of Sprint and T-Mobile US. Overall mobile revenues are expected to increase annually with subscriber growth, data consumption increases, and growth in the device market. Plan rates remain competitive. As anticipated, the MVNO offerings from cable companies Altice, Charter, and Comcast increased in competitive prominence in 2020. Cable outpaced their MNO counterparts through the second quarter of 2020, netting one million adds compared to 882,000. Cable can present an even greater competitive threat if they are able to leverage recently acquired mid-band spectrum; Charter and Comcast both won sizeable amounts of spectrum in the recent 3.5 GHz band auction, as did Cox cable who has yet to deploy a MVNO.

Leading industry associations such as GSMA expect the United States to lead global migration to 5G. The United States' 5G is expected to accelerate in 2020 and beyond, with providers expanding their capacity and coverage in spectrum bands below 6 GHz. The FCC has also taken an aggressive stance on putting millimeter Wave (mmWave) frequencies in the hands of operators, auctioning off the 24 and 28 GHz bands, and undertaking more mmWave auctions (in the 37, 39, and 47 GHz bands) in late 2019. GSMA expects almost half of all mobile connections to be running on 5G networks by 2025. T-Mobile US expanded its 5G network leadership, by reaching 280 million people, utilizing the 600 MHz spectrum holdings it acquired in April 2017 and covering over 100 million people with Ultra Capacity 5G by 2020, utilizing the 2.5 GHz spectrum holdings it acquired in the merger with Sprint.

Following the completion of the merger with Sprint, T-Mobile US hit the grounding running with its initiatives for 2020, carrying great momentum into 2021 even against the backdrop of the coronavirus pandemic. In 2021, T-Mobile US will continue to focus on creating shareholder value and providing the best value experience in the U.S. wireless industry. Key elements of the company's focus include consistently and profitably outgrowing the competition, unlocking the value of synergies faster and bigger than anticipated, and making the necessary investments in the near term to position the company for long-term success. T-Mobile US customer growth initiatives center on attracting and retaining a loyal customer base by offering devices when and how customers want them, and providing plans that are simple, affordable, and without unnecessary restrictions to deliver the best value in wireless. T-Mobile US continues to keep this winning formula through providing this best value proposition in the market, while providing winning customer service married with its leading 5G network.

T-Mobile US expects continued increases in postpaid and prepaid customers in 2021 and 2022 with expansion in underpenetrated growth vectors such as small town rural and enterprise to fuel future growth. Military, 55+, family plans, and previous greenfield retail expansion have all helped fuel industry-leading growth over the last few years while allowing T-Mobile US to deliver great financial returns along with industry-leading subscriber growth. In addition, continued growth of the upper and lower age demographics is expected in the U.S. wireless market. However, competitive pressures and unforeseen changes in the wireless communications industry in the United States may significantly affect the expected ability to attract and retain postpaid and prepaid customers.

T-Mobile US expects a slight increase in total revenues in U.S. dollars in 2021 and a stable trend for 2022 as postpaid customer growth momentum is partially offset by the continued adoption of lower ARPU customer categories (Military, 55+, and family plans) somewhat pressuring ARPU. Further adoption of 5G devices is anticipated to lead to equipment revenue growth and increases in installment device financing, but partially offset by lower lease revenues, extended device upgrade cycles, and increased rates of customers activating with a previously purchased device.

For 2021, T-Mobile US expects adjusted EBITDA AL of USD 25.8 billion and an increase in 2022. The development of adjusted EBITDA AL will be affected by the gradual exit from handset leasing in the upcoming years. Sprint had a higher focus on handset leasing, which shall be replaced by an increased focus on equipment installment plans. Revenue growth is expected to outpace increases in expense as T-Mobile US is focused on customer growth and delivering synergies of the merger with Sprint by driving operating cost efficiencies and site decommissioning as the network is integrated and customers are migrated to the destination network. However, investments to unlock growth vectors such as the growth in digitalization and supporting small town, rural, and enterprise growth, as well as the expectation of increased switching activity from network migrations, will impact adjusted EBITDA AL.

Excluding expenditures relating to spectrum, T-Mobile US expects an increase in 2021 and stable cash capex growth in 2022 in U.S. dollars as capex remains elevated for the network integration and the rapid pace of deployments to continue building out the 5G network which now covers more than 100 million people with Ultra Capacity 5G.

Europe

In 2020, the coronavirus pandemic had a substantial negative impact on economic output in the countries of our Europe operating segment. In 2021, the economy is likely to recover. Real GDP will rise in our segment's footprint countries by between 3.4 and 4.7 % per annum in 2021. However, a potential increase in unemployment in conjunction with ongoing economic uncertainty could have a negative impact on household and business expenditure for telecommunications services. The (partial) lockdown imposed at the start of 2021 could have a detrimental effect on revenues from business customers, roaming, and prepaid services in particular.

We are assuming that the forecast of these macroeconomic conditions will only have a limited impact on the development of our telecommunications markets (including IT). This assumption has been confirmed by EITO, which anticipates a modest initial recovery for the countries of our Europe operating segment for 2021, with slight growth of 0.4 %. This is based on an improved forecast for IT business, while the telecommunications market is expected to remain at the prior-year level.

Taking the telecommunications market on its own, Analysys Mason also forecasts a stable trend for total revenues for 2021 and an increase of almost 2 % for 2022. Customer demand for a fast and reliable broadband connection is also expected to lead to growth in broadband revenues of around 3 % for the next two years. According to Analysys Mason, the trend towards increased data usage will also continue, especially in households that have not previously had a sufficiently fast broadband line. Demand has also grown as a result of the coronavirus-induced shift towards working from home. On top of this, the fiber-optic build-out is being accelerated. In most Central and Eastern European countries, there is still the possibility of increasing broadband network coverage. Additional regulatory-induced measures will likely further boost investments in network infrastructure. This growth is being bolstered by the growing number of companies offering convergent products. In traditional pay-TV business, according to Analysys Mason, the number of customers using an OTT offer will increase significantly over the next two years, as will the number of IPTV lines. Accordingly, TV revenues for 2021 will also increase by 1 % and for 2022 by more than 2 %. Following the downturn in 2020, mobile business will slowly start to recover again in 2021, according to the Analysys Mason forecast – with modest growth of just under 1 % in 2021 and almost 2 % in 2022.

We aspire to remain Europe's leading telecommunications provider in the coming years. We are convinced that a country-wide integrated fixed-network and mobile network infrastructure will be a key success factor. Our FMC product portfolio is already available to customers in all of our national companies. Another milestone on the road to success is digitalization: by making intelligent use of our network infrastructure, which comprises a range of technologies, especially 5G, we want to offer innovative solutions for households, business customers, and municipalities. With our fully integrated offers and digitalization, which is fast gaining momentum, we plan to continue to ensure the best customer experience and continue to improve customer satisfaction.

The Europe operating segment is distinguished by its strong investment portfolio: All of our national companies are integrated providers of telecommunications services and, as well as having a high brand recognition value, are substantially relevant in their respective home markets. In the last year, for instance, we were already able to provide our customers in Poland with comprehensive convergent services by utilizing Orange's fiber-optic network. In the Czech Republic, we are working with a partner to run our own fiber-optic network. In Romania, we will take a different tack and transform the company from an integrated provider into a mobile-only provider: On November 6, 2020, OTE concluded an agreement with Orange Romania concerning the sale of the 54 % stake in Telekom Romania Communications, which operates the Romanian fixed-network business, to Orange Romania. The transaction is subject to approval by the authorities as well as other closing conditions.

Our goal is to deliver the best customer experience. Our successful convergent product portfolios MagentaOne and MagentaOne Business provide strong offerings with which we can help shape developments in the European markets. We made significant progress in the reporting year: we doubled the penetration rate in the last three years, and more than 50 % of our customers already have a MagentaOne contract. We want to increase this share successively over the next two years. Our FMC offering is to provide the best customer experience: With a strong set of add-on services ("more for more" principle), it is our view that MagentaOne is an excellent option for getting the best out of the mobile and fixed-network world. We believe it will lead to higher levels of customer satisfaction and a lower churn rate. Over the next two years, we plan to maximize the business benefits arising from greater customer satisfaction, further lower the churn rate, and increase FMC revenues as a percentage of total revenues.

We are convinced that only top customer service will enable us to take the next step toward achieving the best customer experience. Digitalization can make a major contribution in this regard. The service app for consumers enables us to largely digitalize our interaction with customers, meaning we can meet customer needs in a more personalized and efficient way, and position products and innovative services in the market more quickly. This service app has been established in all of our national companies; in the reporting year, we achieved a penetration rate in the Europe operating segment of 62 %. We firmly believe that our customers will reward the benefits it brings. Thus, we believe we can achieve first or second place in customer satisfaction rankings of telecommunications companies in the respective national companies in the next two years, as measured by the TRI*M index which is based on empirical research.

Our TV business remains key to the success of FMC. In addition to a seamless experience of TV and entertainment offers, we continue to attach importance to high quality and – where it makes sense – exclusive proprietary content. Going forward, we will continue negotiations, depending on local market conditions, to acquire (co-)exclusive rights to broadcast sports events, such as the UEFA Champions League and the Europa League, or the rights to TV movies/series. However, we still believe high-quality local content to be very relevant in our markets. This is why we would like to offer our customers a wide range of such content. By implementing a new TV platform, we can improve the customer experience on the one hand, and rapidly roll out new services and content on the other. We are also working together with what are known as OTT players, like Netflix or Prime Video, and gradually expanding our range of OTT services to all screens – especially to our Android-TV-based terminals. Overall, we expect to continue growing our revenues from TV business over the next two years.

The broadband build-out will remain a key focus of activities in the coming years. Our state-of-the-art network infrastructure supports the digital transformation and enables us to leverage our technology leadership. We therefore plan to take part in further spectrum auctions – particularly for 5G. The 5G launch is advancing in our national companies: after Austria, the marketing of 5G also officially began in Hungary, Poland, the Czech Republic, Slovakia, Croatia, and Greece in 2020. Further countries in our Europe operating segment will gradually follow suit over the next year, depending on their local market needs and on the results of spectrum auctions. To this end, we have completed initial pilot projects in almost all our footprint countries and made the necessary technical preparations. In parallel to the launch of 5G, we continue to expand LTE reach and implement further LTE frequency layers in order to increase network capacity. In this way, we will achieve our target of 99 % network coverage in our European footprint in the next year. One aim of our integrated network strategy is to make further advances in the fiber-optic rollout. In addition to Hungary, Greece, Slovakia, Croatia, North Macedonia, and Montenegro, we are also investing massively in building out our fiber-optic networks in Austria and the Czech Republic. We plan to achieve fiber-optic coverage of 38 % by 2022.

In the next two years, our business customers in the Europe operating segment will have even better options to shape their future in digitalized business life. First of all, we will further tailor our offers to the changed needs of our customers. For example, our MagentaOne Business offers include video conferencing solutions for all business customer groups. Whether small or large, companies can further increase their productivity thanks to our exclusive partnership with Microsoft. In the area of security, we provide solutions, for example, for smart video surveillance for cities and municipalities, but also for private companies of all sizes. For our corporate customer business, we expect this to result in rising revenues from both telecommunications and ICT/cloud services. Our product portfolio continues to center on the efficiency of our business customers: as a strong partner for digitalization, we make it possible to satisfy additional customer needs, for example by optimizing websites or increasing payment options. Connectivity is also more important than ever for business customers. We would like to serve this need with our convergent offers, comprising the best connectivity (5G and optical fiber), efficient productivity, and state-of-the-art security solutions.

In our Europe operating segment, we expect to increase our customer base over the next two years, mainly thanks to a strong focus on MagentaOne, our convergence brand. Consequently, we expect the number of TV and broadband customers to increase in 2021 and 2022. We are also planning for slight growth in the number of mobile customers in 2021, gaining further momentum in 2022. We expect the number of fixed-network lines to remain stable in 2021 and 2022.

We expect revenues for our Europe operating segment to remain stable in 2021 and 2022, measured on a comparable basis, i.e., at constant exchange rates and market conditions, and given an unchanged organizational structure.

Vigorous competition in the markets of our operating segment could potentially put pressure on our margins. To be ready for such an eventuality, we want to increase our productivity and exploit the benefits of digitalization, for instance by automating processes in order to realize cost-cutting potential. Accordingly, we anticipate adjusted EBITDA AL to develop positively. We expected adjusted EBITDA AL to amount to around EUR 3.9 billion in 2021 and to increase slightly in 2022.

In order to maintain our technology leadership, we continue to invest in our integrated networks and plan to maintain our high level of investments over the next few years. Since we invested more than planned in the reporting year, cash capex will decrease slightly year-on-year in 2021. It is expected to level out in 2022.

Systems Solutions

Overall, growth in the IT market is expected to continue apace over the next two years, while cost pressure and intense competition are likely to persist. The impact of the coronavirus pandemic has accelerated digitalization in many areas. As a consequence, we expect further growth in demand for solutions for cloud services, big data, the Internet of Things, the digitalization of business processes, and IT security (cybersecurity).

After a brief decline in 2020, the market for IT services is likely to continue growing over the next few years. At the same time, this market is undergoing a radical transformation, e.g., due to ongoing standardization and automation, demand for smart services, and the changes being wrought by cloud services in outsourcing business. Further challenges have arisen in the shape of digitalization, the growing importance of cybersecurity, big data, and increasing mobility. Traditional IT business will continue to decline, while cloud services, the Internet of Things, mobility, and cybersecurity may achieve double-digit growth rates. In view of all this, our plan is to continue investing increasingly in growth markets – especially in digitalization (e.g., EDGE, artificial intelligence (AI), and blockchain), multi- and hybrid cloud services, and cybersecurity.

Part of our Group strategy is the ambition to be a leading partner for business customer productivity. We give our customers help and guidance in implementing digital business models with our offerings for connectivity, digital business, cloud and infrastructure, and security, as well as through our strategic partnerships.

Under the program to transform our systems solutions business, we realigned our organization and workflows on a portfolio basis, thereby creating the basis for business transparency and dedicated portfolio management and strategy. We are continuing to drive forward expansion of the growth business (e.g., public cloud managed services) while at the same time stabilizing and making further cost savings in established IT business (e.g., managed infrastructure services and private cloud), with the aim of bringing about a significant shift in the revenue mix towards our growth areas.

We are among the top providers in the European IT market. Our very high levels of customer satisfaction are a core element in maintaining this position in the long term as well as in playing a leading role in digitalization.

Overall, we are forecasting a stable trend in order entry and a slight decline in revenues for the Systems Solutions operating segment in 2021. Adjusted EBITDA AL is expected to develop stably and come in at around EUR 0.3 billion. Due to ongoing investments in growth areas, we expect cash capex to remain stable. For 2022, we expect to see a slight year-on-year increase in order entry, stable revenues, a slight increase in adjusted EBITDA AL, and stable cash capex.

Group Development
Our companies T-Mobile Netherlands and GD Towers dominate the performance of our Group Development operating segment.

While the Dutch mobile communications market continues to be shaped by sustained high price pressure and intense competition, this is expected to ease moderately in the coming years. The Netherlands is ahead of much of Europe with its bundling of fixed-network and mobile products into convergent offers (FMC). Nevertheless, the strong discount segment comprising mobile providers' secondary brands will continue to make for lively competition. The main components of our strategy for T-Mobile Netherlands continue to be the repositioning of the T-Mobile core brand, expansion of our portfolio of convergent products, and efficient cost management. Following the successful integration of Tele2 Netherlands, the Dutch MVNO and SIM provider Simpel was acquired to support our long-term strategy. The acquisition of Simpel secures our mobile market shares, creates synergies, and makes us more competitive in the consumer market.

GD Towers comprises the equity investments DFMG, T-Mobile Infra B.V., and, since the start of 2021, Magenta Telekom Infra GmbH. With some 32,500 sites, DFMG is the biggest provider of passive wireless infrastructure for mobile communications and broadcasting in Germany. We expect demand for cell sites to rise steadily over the next few years, given that network operators plan both to close gaps in coverage and to increase the density of mobile networks to meet the growing demand for mobile data services. With around 3,150 sites, T-Mobile Infra B.V. is one of three providers of passive wireless infrastructure in the Netherlands. On January 21, 2021, Deutsche Telekom, Cellnex Telecom S.A., the newly established, independently managed investment company Digital Infrastructure Vehicle I SCSp (DIV), and others signed an agreement to merge Deutsche Telekom's and Cellnex's respective Dutch subsidiaries for mobile infrastructure. Under the deal, the Dutch cell tower company T-Mobile Infra B.V. will be sold to DIV and subsequently merged into Cellnex Netherlands B.V. Magenta Telekom Infra GmbH bundles the Austrian radio tower business, operating around 7,000 sites.

We expect the revenues of our Group Development operating segment to increase slightly in 2021, as well as in 2022. Adjusted EBITDA AL is set to increase in 2021 to around EUR 1.2 billion; for 2022 we expect a further increase. The positive trend in revenue and adjusted EBITDA AL is mainly driven by the continued build-out of sites at DFMG and the FMC strategy with planned customer additions at T-Mobile Netherlands.

We expect investments in our Group Development operating segment to continue growing strongly in 2021, with a further increase projected for 2022. This is mainly on account of the ongoing build-out of cell sites by DFMG in Germany together with a slight decrease in investment activity at T-Mobile Netherlands due to the advanced stage of the integration of Tele2 Netherlands.

Group Headquarters & Group Services
At Group Headquarters & Group Services, we will stay focused over the next two years on our ongoing efficiency enhancement measures, with which we are further optimizing our structures, especially within Group Services. We will also continue to focus on implementing our cost-cutting measures. This will primarily involve reallocating human resources, bundling standardized processes for the Group, and enhancing the value of our real estate portfolio by means of innovative space and workplace concepts. As these cost cuts will put us in a position to offer our services more cost-effectively, the operating segments stand to benefit from them as well. Against the backdrop of the pandemic, we are working on flexible concepts that will enable us to adjust our capacities at short notice to take account of current developments.

In the coming years, too, our Board of Management department Technology and Innovation will drive not only the development of innovative technologies, products, and services, but also IT standardization and the ongoing establishment of centralized production platforms. Major areas of capital expenditure in the years 2021 and 2022 will include technology development, the implementation of our IT strategy, and security. We expect this to reduce overheads and capital expenditure, driven by IT operating costs and by the ongoing standardization of IT infrastructure and platforms.

In the long term, these savings will help the Group finance its innovation endeavors. We are focusing innovation topics, such as development of the new 5G mobile communications standard and network slicing, evolution of a proprietary smart system for the voice control of Deutsche Telekom products and services, and introduction of a uniform operating system for the routers marketed by the Group. Technological innovations will serve to safeguard the network and technology leadership of our Germany and Europe operating segments in the long term and to evolve the campus networks, which are designed to improve the integrated automation of our international industrial customers' production processes. Ultimately, every one of our investment projects revolves around enhancing the customer experience.

Risk and opportunity management

Board of Management's assessment of the aggregate risk and opportunity position

The assessment of the aggregate risk position is the outcome of the consolidated analysis of all material risk categories or individual risks. The aggregate risk position did not change fundamentally in 2020 compared with the previous year. Our major challenges particularly include the regulatory factors, economic uncertainty in consequence of the coronavirus pandemic, the implementation of the business combination of T-Mobile US and Sprint, intense competition and the associated price pressure in the telecommunications business, as well as the pressure to change arising from new technologies and strategic transformation. As it stands today, Deutsche Telekom AG's Board of Management sees no risk to the Group's continued existence as a going concern. As of the reporting date and the time of preparing the financial statements, there were no risks that jeopardize Deutsche Telekom AG's and key Group companies' continued existence as a going concern.

We are convinced that we will also be able to master challenges and exploit opportunities in the future without having to take on any unacceptably high risks either for our business or for society and the environment. We strive to achieve a good overall balance between opportunities and risks, with the aim of increasing added value for our stakeholders by analyzing and seizing new market opportunities. SDG 16 FINANCE

For further information on sustainability, please refer to the section "Corporate responsibility and non-financial statement."

Risk and opportunity management system

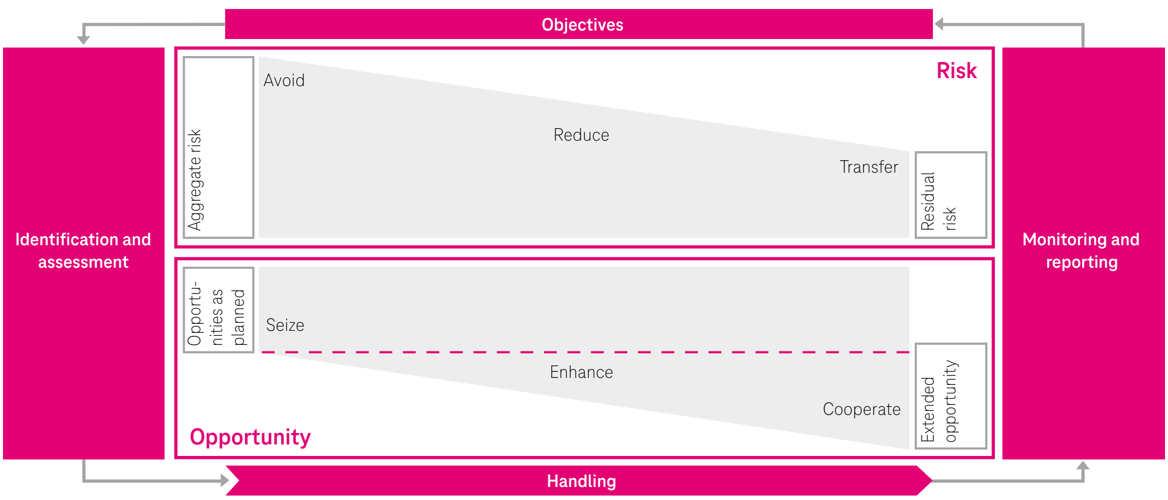
As one of the world's leading providers in the telecommunications and information technology industry, we are subject to all kinds of uncertainties and change. In order to operate successfully in this ongoing volatile environment, we need to anticipate any developments at an early stage and systematically identify, assess, and manage the resulting risks. It is equally important that we recognize and exploit opportunities. We therefore consider a functioning risk and opportunity management system to be a central element of value-oriented corporate governance.

A risk and opportunity management system of this kind is not only necessary from a business point of view; it is also required by laws and regulations, in particular § 91 (2) of the German Stock Corporation Act (Aktiengesetz – AktG). Deutsche Telekom AG's Audit Committee monitors the effectiveness of the internal control system and the risk management system as required by § 107 (3) sentence 2 AktG.

Our Group-wide risk and opportunity management system covers strategic, operational, financial, and reputational risks as well as the corresponding opportunities for our fully consolidated entities. The aim is to identify these risks and opportunities early on, monitor them, and manage them in accordance with the desired risk profile. For this purpose, we make use of internal and external information sources.

The standard process described below provides a framework. Once risks and opportunities have been identified, we move on to analyze and assess them in more detail; the effects of risks and opportunities are not offset against each other. We then decide on the specific course of action to be taken, for example, in order to reduce risks or seize opportunities. The respective risk owner implements, monitors, and evaluates the associated measures. The steps are repeatedly traversed as required and modified to reflect the latest developments and decisions.

The risk and opportunity management system



Our risk and opportunity management system is based on the globally applicable risk management standard of the International Standards Organization (ISO). ISO standard 31000 “Risk management – Principles and guidelines” is regarded as a guideline for internationally recognized risk management systems.

Our Internal Audit unit reviews the functionality and effectiveness of elements of our risk management system at regular intervals. The external auditor mandated by law to audit the Company’s annual financial statements and consolidated financial statements in accordance with § 317 (4) of the German Commercial Code (Handelsgesetzbuch – HGB) examines whether the risk early warning system is able to identify at an early stage risks and developments that could jeopardize the Company’s future. Our system complies with the statutory requirements for a risk early warning system.

In addition, our Group Controlling unit specifies a series of Group guidelines and processes for the planning, budgeting, financial management, and reporting of investments and projects. These guidelines and processes guarantee both the necessary transparency during the investment process and the consistency of investment planning and decisions in our Group and operating segments. They also provide the Board of Management with support in reaching its decisions. This process also includes the systematic identification of strategic risks and opportunities.

Organization of the risk and opportunity management system

The Group Risk Governance unit defines the methods for the risk and opportunity management system that is applied Group-wide and for the associated reporting system, in particular the Group risk report. All of our operating segments as well as the Group Headquarters & Group Services segment are connected to the central risk and opportunity management system of the Group via their own risk and opportunity management. The Group risk report, which primarily aggregates the contents provided by our segments, is approved by the Board of Management on a quarterly basis and presented to the Audit Committee of the Supervisory Board. We inform the Audit Committee about all of the latest developments and/or changes in the risk management system at a special meeting held annually. The relevant owners in each of the segments are responsible for identifying, assessing, and continuously monitoring risks. Management takes potential opportunities into account in the annual planning process and continuously develops them further during business operations.

Risk identification and reporting

Each operating segment produces a quarterly risk report in accordance with the standards laid down by the central risk management and based on specific materiality thresholds. These reports assess risks, taking into account their extent in terms of impact on results of operations or financial position, as well as their probability of occurrence, and they identify action to be taken and suggest or initiate measures. The assessment additionally includes qualitative factors that could be important for our strategic positioning and reputation, and that also determine the aggregate risk. We base our assessment of risks on a period of two years. This is also the length of our forecast period. If significant risks exist beyond the forecast period, these are monitored on an ongoing basis.

The Group risk report, which presents the main risks, is prepared for the Board of Management on the basis of this information. The Board of Management informs the Supervisory Board. The Audit Committee also examines this report at its meetings. If any unforeseen risks arise outside regular reporting of key risks, they are reported ad hoc.

Identification and assessment of opportunities in the annual planning process

The systematic management of risks is one side of the coin; securing the Company’s long-term success by means of integrated opportunities management is the other. That is why identifying opportunities and subjecting them to a strategic and financial assessment is an essential part of our annual planning process. It allows us to factor those opportunities into our forecasts for financial and non-financial performance indicators.

The short-term monitoring of results and the medium-term planning process help our operating segments and Group Headquarters identify and seize the opportunities in our business throughout the year. While short-term monitoring of results mainly targets opportunities for the current financial year, the medium-term planning process focuses on opportunities that are strategically important for our Group. In this context we distinguish between two types of opportunity:

- External opportunities, i.e., those with causes over which we have no influence, for example, the revocation of additional taxes in Europe.
- Internal opportunities, i.e., those that arise within the Company, for example by focusing our organizational structure on innovation and growth areas and products, or through business partnerships and collaborations from which we expect to reap synergies.

We are constantly enhancing the efficiency of our planning process so as to gain greater scope for action. This puts the organization in a position to identify and seize new opportunities and generate new business. The preliminary plans of our operating segments form the basis for a concentrated planning phase during which members of the Board of Management, business leaders, senior executives, and experts from all business areas intensively discuss the strategic and financial focus of the Group and its operating segments, and from all of which they ultimately produce an overall picture. The identification of opportunities from innovation and their strategic and financial assessment play a major role throughout this process. This "brainstorming" may result in opportunities being taken and transferred to the organization, or rejected and passed back to the respective working groups for revision.

Risk assessment and risk containment

Assessment method

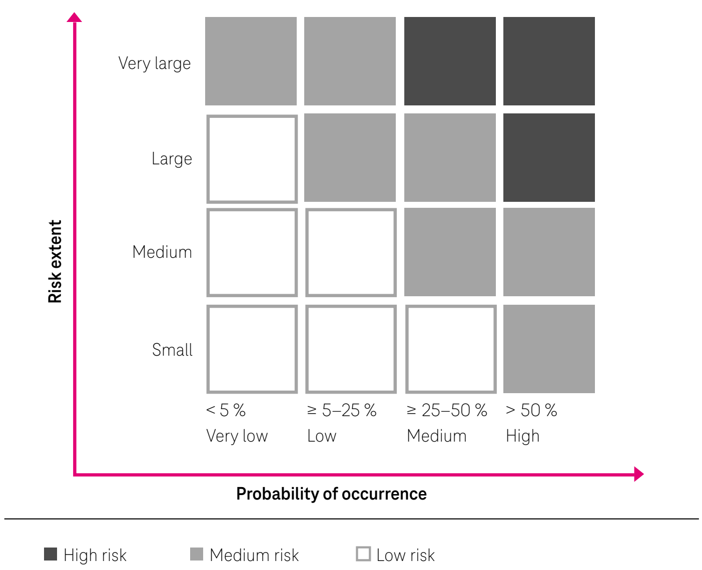
Risks are assessed on the basis of "probability of occurrence" and "risk extent." The following assessment yardsticks apply:

Probability of occurrence	Description
< 5 %	Very low
≥ 5 to 25 %	Low
≥ 25 to 50 %	Medium
> 50 %	Large

Risk extent	Description
Low	Limited negative effects on business activities, results of operations, financial position, and reputation; individual EBITDA AL risk < € 100 million
Medium	Certain negative effects on business activities, results of operations, financial position, and reputation; individual EBITDA AL risk ≥ € 100 million
Large	Significant effects on business activities, results of operations, financial position, and reputation; individual EBITDA AL risk ≥ € 250 million, and/or affects more than one Group entity
Very large	Damaging negative effects on business activities, results of operations, financial position, and reputation; individual EBITDA AL risk ≥ € 500 million, and/or affects more than one Group entity

By assessing risks according to the aspects described above, we classify them as low, medium, and high risks, as shown in the following graphic.

Risk significance



We report all risks classified as "high" and "medium." Exceptions are possible, for example, risks from prior years that we can continue to list for the sake of reporting continuity although they are classified as "low" in the current reporting period.

It should be noted that risks with an extent currently assessed as being small may in the future have a stronger impact than risks currently assessed as having a larger extent. This may be due to uncertainties that cannot be assessed at present and over which we have no influence. Uncertainties of this kind also give rise to risks that are currently unknown to us or that we presently consider to be insignificant and that may affect our business activities in the future.

Risk containment measures

Group insurance management. To the extent possible and economically viable, we take out adequate Group-wide insurance cover for insurable risks. DeTeAssekuranz – a subsidiary of Deutsche Telekom AG – acts as an insurance broker for Group insurance management. It develops and implements solutions for the Group's operational risks using insurance and insurance-related tools and places them on the national and international insurance markets.

Taking out insurance cover is an essential option for our external risk transfer. The coverage of risks in our Group insurance programs requires the transfer of risk for the purpose of protecting the Group's financial position. That means that the possible extent of the risk must have reached a volume "relevant for the Group" or the risks have to be bundled and managed at Group level to protect the Group's interests (opportune reasons/cost optimization/risk reduction).

Business continuity management (BCM). BCM is a process within operational security and risk management that helps protect business processes from the consequences of damaging incidents and disruptions. It ensures the continuation of business processes through ongoing analysis, assessment, and management of relevant risks for people, technology, infrastructure, supply and service relationships, and information. The aim is to identify potential threats at an early stage and to keep the impact and duration of a disruption of critical business processes to an acceptable minimum by ensuring appropriate resilience in the organization plus the ability to effectively cope with threats. SDG 8 FINANCE

To this end, BCM identifies critical business processes and business processes requiring protection, including any supporting processes, process steps, and assets (people, technology, infrastructure, information, and supply and service relationships). Appropriate precautionary measures are also defined. In particular, security management works in coordination with the relevant units and process owners to analyze the possible consequences of external and internal threats with relevance for security, such as natural disasters, vandalism, or sabotage. Once the extent of potential losses and probability of occurrence have been assessed, preventive measures can be put in place and contingency plans developed.

The individuals responsible initiate and execute further measures to mitigate the risks. A wide range of measures are available, depending on the risk type. A few examples of these measures are:

- We tackle market risks with comprehensive sales controlling and intensive customer management.
- We manage interest and currency risks by means of systematic risk management and hedge them using derivative and non-derivative financial instruments.
- We also take a whole array of measures to deal with operational risks: for example, we constantly implement operational and infrastructural measures in order to improve our networks; continually enhance our quality management system, the associated controls, and quality assurance; and offer our employees systematic training and development programs.
- We deal with risks from the political and regulatory environment through an intensive, constructive dialog with policymakers and the authorities.
- We deal with risks arising from brand, communication, and reputation by continuously analyzing the market and communications.
- We minimize risks in connection with legal proceedings by ensuring suitable support for those proceedings and by designing contracts appropriately in the first place.
- The Group Tax unit identifies potential tax-related risks at an early stage and systematically records, assesses, and monitors them. It takes any measures necessary to minimize tax-related risks and coordinates them with the Group companies affected. The unit also draws up and communicates policies for avoiding tax risks.

Risks and opportunities

In the following section, we present all risks and opportunities of significance to the Group that, as things currently stand, could affect the results of operations, financial position, and/or reputation of Deutsche Telekom and, via the subsidiaries' results, the results of operations, financial position, and/or reputation of Deutsche Telekom AG. We describe the majority of the risks before the measures for risk containment are taken. If any remaining risks have been identified despite such measures for risk containment, they are labeled as such. If risks and opportunities can be clearly allocated to an operating segment, this is presented accordingly in the following.

In order to make it easier to understand and see their effects, we have allocated the individually assessed risks to the following categories:

Corporate risks

	Probability of occurrence	Risk extent	Risk significance	Change against prior year
Industry, competition, and strategy				
Economic risks, Germany	Medium	Medium	Medium	Deteriorated
Economic risks, United States	Medium	Medium	Medium	Deteriorated
Economic risks, Europe	Medium	Medium	Medium	Deteriorated
Risks relating to the market and environment, Germany	Medium	Medium	Medium	Unchanged
Risks relating to the market and environment, United States	Medium	Very large	High	Deteriorated
Risks relating to the market and environment, Europe	Medium	Medium	Medium	Unchanged
Risks relating to innovations (substitution)	Medium	Medium	Medium	Unchanged
Risks relating to strategic transformation and integration	Medium	Very large	High	Unchanged
Regulation	see Risks and opportunities relating to regulation			
Operational risks				
Employees	Medium	Small	Low	Unchanged
Risks relating to IT/NT network operations, Germany	Low	Large	Medium	Unchanged
Risks relating to IT/NT network operations, United States	Very low	Large	Low	Unchanged
Risks relating to IT/NT network operations, Europe	Very low	Large	Low	Unchanged
Risks relating to existing IT architecture, United States	Medium	Medium	Medium	Unchanged
Future viability of the IT architecture, United States	Medium	Medium	Medium	Unchanged
Procurement	Low	Small	Low	Unchanged
Data privacy and data security	High	Medium	Medium	Unchanged
Brand, communication, and reputation				
Brand and reputation (reporting in the media)	Low	Small	Low	Unchanged
Sustainability risks	Low	Medium	Low	Unchanged
Health and environment	Low	Medium	Low	Unchanged
Litigation and anti-trust proceedings	see Litigation			
Financial risks				
Liquidity, credit, currency, interest rate risks	Medium	Medium	Medium	Unchanged
Tax risks	see Tax risks			
Other financial risks	see Other financial risks			

Risks and opportunities from industry, competition, and strategy

Risks and opportunities relating to the macroeconomic environment. As an international corporation, we operate in a large number of countries, using a range of currencies. A substantial economic downturn could generally reduce the purchasing power of our customers and adversely affect our access to the capital markets. Exchange rate fluctuations could impact on our earnings.

The coronavirus pandemic threw the global economy into deep recession in 2020 and will also continue to shape its course in 2021. Leading institutes and organizations do not expect economic activity to return to pre-pandemic levels until the end of 2021/start of 2022. Apart from the coronavirus pandemic, the main risks to future economic development are potential geopolitical shocks and uncertainties from international trade conflicts.

Higher demand for certain telecommunications services means the impact of the coronavirus pandemic is being felt less severely by the telecommunications industry than by other industries. Nevertheless, there is still uncertainty regarding the extent to which business activities and thus the results of operations and financial position of Deutsche Telekom could be affected overall depending on how the pandemic develops. Possible factors could include renewed travel restrictions, the closure of Telekom Shops, disrupted supply chains, further declines in roaming and visitor volumes, falling terminal equipment sales, or a drop in the number of new contracts being taken out. In addition, corporate customer business may decline further, for example, due to delayed or changed customer decisions. The possibility of an increase in the number of consumers and business customers defaulting on their payments cannot be ruled out either. Deutsche Telekom has put in place cost-saving measures to mitigate potential effects on earnings. The coronavirus pandemic has a negative impact on the Group's economic business risks. In the United States, Germany, and Europe operating segments, the risk significance was regraded from "low" to "medium."

These risks are counterbalanced by opportunities, especially if the coronavirus pandemic can be contained on a lasting basis. After a harsh coronavirus winter, we expect the European economy to see recovery from spring 2021. The pace of economic recovery is also likely pick up in the United States. Many countries in Eastern Europe saw relatively robust economic growth in the coronavirus pandemic, and are expected to perform above the EU average again in 2021.

Risks relating to the market and environment. The main market risks we face include the steadily falling price level for voice and data services in the fixed network and in mobile communications. In addition to price reductions imposed by regulatory authorities, this is primarily attributable to ongoing intense competition in the telecommunications industry.

Competitive pressure is expected to continue, especially in the fixed network in Germany and the countries of our Europe operating segment. In the broadband market, the trend of disproportionate growth in the market shares of regional network operators and supra-regional specialist FTTH providers, particularly in Germany, continues to establish itself. They build out their own infrastructure and thus increase their market coverage. Increasingly this is done with fiber-optic infrastructure, thereby increasing their customer numbers and expanding their own value added. There is still strong competition to gain new customers by cutting prices and offering introductory discounts.

We expect ongoing price pressure for mobile voice telephony and mobile data services, which could adversely affect our mobile service revenue. Among the main reasons for this price pressure are data-centric, aggressively priced offers. Providers that do not have their own infrastructure (MVNOs) market such offers over the internet, for instance, while there is also the risk that smaller competitors will take unforeseen, aggressive pricing measures. Technological innovations such as the use of pure eSIMs in smartphones could put further pressure on prices by increasing the willingness of customers to switch providers.

Drillisch Netz AG acquired mobile spectrum in the spectrum auction held in Germany in 2019 and subsequently made a public statement declaring its intention to begin setting up a fourth mobile network over the next few years. Furthermore, Drillisch has defined access to an existing network via national roaming to be a prerequisite to building out its own network and has begun negotiations with all three German network providers. In fall of 2020, Drillisch called upon the Bundesnetzagentur in its role as arbitrator to move forward the negotiations on national roaming with Deutsche Telekom and Vodafone. Changes in the market for wholesale mobile services may affect the retail and wholesale area.

Another competitive risk lies in the fact that, both in the fixed network and in mobile communications, we are increasingly faced with competitors who are not part of the telecommunications sector as such, but are increasingly moving into the traditional telecommunications markets. This mainly relates to major players in the internet and consumer electronics industries. As a result, we are exposed to the risk of a further loss of share of value added and falling margins due to increasingly losing direct customer contact to competitors.

T-Mobile US has multiple wireless competitors, some of which have greater resources and compete for customers based principally on service/device offerings; price; network coverage, speed, and quality; and customer service. Market saturation in the United States will continue to cause the wireless industry's customer growth rate to be moderate in comparison with historical growth rates, or possibly negative, leading to ongoing competition for customers. T-Mobile US expects that its customers' appetite for data services will place increasing demands on its network capacity. The scarcity and cost of additional wireless spectrum, and regulations relating to spectrum use, may adversely affect T-Mobile US' business, financial condition, and operating results. T-Mobile US faces intense and increasing competition from other service providers as industry sectors converge, such as cable, telecommunications services and content, and satellite television. Joint ventures, mergers, acquisitions, and strategic alliances in the wireless sector have resulted in and are expected to result in larger competitors competing for a limited number of customers.

The business combination of T-Mobile US and Sprint was consummated on April 1, 2020. Implementing the business combination poses complex challenges for T-Mobile US, which must be successfully overcome in order to realize the predicted synergies and to meet the conditions imposed by the authorities. The combination of the two companies to form the new T-Mobile US affects all operational areas; for instance, the integration of the mobile networks and the IT and technology environments, customer management, sales, HR management, logistics, and the control environment. At the same time, it will be necessary to fulfill multiple conditions, including those agreed with the antitrust and regulatory authorities such as the Federal Communications Commission (FCC), the U.S. Department of Justice (DoJ), the supervisory authorities in various U.S. states, and the Committee on Foreign Investment in the United States (CFIUS). With the divestiture of Sprint's prepaid business and the confirmation of an agreement to sell spectrum to DISH, on July 1, 2020, we fulfilled a major prerequisite of the U.S. authorities for approving the merger. Following the first half of 2020, we increased the risk significance in the risk category "Risks relating to the market and environment, United States" to "high" to reflect the challenges posed by the integration.

Our Systems Solutions operating segment also faces challenges. Continued strong competition and persistent cost pressure are adversely affecting traditional IT business. In addition, the technological shift toward cloud solutions and digitalization in the IT sector is prompting new, strongly capitalized, competitors to enter the market. This may lead to revenue losses and declining margins at T-Systems. On the other hand, innovation areas such as artificial intelligence (AI) and industrial IoT create opportunities for new project business.

Opportunities relating to the market and environment. The telecommunications and IT market is extremely dynamic and highly competitive. The economic and competition conditions as well as customers' changing wants and needs affect our actions and impact on our Company indicators. We generally expect the situation to develop as described in the section "Forecast."

Risks relating to innovations (substitution). Innovation cycles are getting shorter and shorter. This confronts the telecommunications sector with the challenge of bringing out new products and services at shorter and shorter intervals. New technologies are superseding existing technologies, products, or services in part, in some cases even completely. This could lead to lower prices and revenues in both voice and data traffic. These substitution risks could impact our revenue and earnings. We deal with the impact of substitution risks by offering package rates, for example: we offer new and existing customers integrated solutions from our product portfolio. The introduction of the new 5G mobile standard as a technological innovation entails uncertainties in the form of upcoming spectrum auctions and their conditions of award, regulatory requirements, public discussions on security and electromagnetic compatibility, and the limited number of telecommunications hardware providers represented in planning scenarios.

Opportunities relating to innovations. In addition to the risks described, ever-shorter innovation cycles enable us to drive the digital transformation of our society and to provide our consumers and business customers with innovative products and solutions. That is why our innovation and product development activities are decisive when it comes to identifying opportunities and making the most of them in an increasingly competitive environment. In order to guarantee this, and do justice to the growing convergence of networks, products, and IT, we have combined all relevant functions under joint management in our Board of Management department Technology and Innovation, in order to enable closer integration of the areas of innovation, networks, IT, and security. SDG 9 FINANCE By doing so, we are putting the development of outstanding, seamless customer experiences front and center, and this year we won awards, for example, for our smart-home products and our digital assistant "Frag Magenta."

For further information on our innovation activities, please refer to the section "Innovation and product development."

5G is the new generation of mobile telecommunications networks. Not only are we involved in a large number of different organizations and forums, we are also working intensively in collaboration with research institutions and industry to continue developing this standard, which will address an array of challenges facing telecommunication networks. These include purely technical requirements, such as achieving a substantial increase in capacity, bandwidth, and availability, and lower latency. In addition, there are fundamental issues, such as IoT communication on a large scale in the Internet of Things (IoT) and the growing need for reliability, security, and guaranteed service quality in industrial applications. 5G thus offers not only the immediate opportunity of cost-effectively managing rapidly increasing demands in existing business models going forward, but also opportunities for further business models by marketing network capabilities (e.g., network access, localization, security, identity, storage location, temporary storage, real-time processing) to relevant partners. We are already working on implementing the first use cases such as campus networks, mobile gaming, and mobile edge computing, in which data is processed in a decentralized manner (at the edges of the network). Together with other technologies like the NarrowBand Internet of Things (NB-IoT) and artificial intelligence (AI), 5G and edge computing provide the underpinnings for the further digital transformation of society. SDG 13 STRUCTURE

Risks relating to strategic transformation and integration. We are in a continuous process of strategic adjustments and cost-cutting initiatives. If we are unable to implement these projects as planned, we will be exposed to certain risks. In other words, the benefit of the measures could be less than originally estimated, take effect later than expected, or not at all. Each of these factors, individually or in combination, could have a negative impact on our business situation, financial position, and results of operations.

Collaboration with Chinese suppliers was impeded in 2020 by the enduring trade conflict between the United States and China. Since 2020, on account of security concerns, the United States has restricted the use of U.S. technology for and by Chinese suppliers. A large number of countries in which Deutsche Telekom also operates (including Greece and Poland) supported this Clean Network initiative, which prohibits the use of products from critical vendors in telecommunications networks in the medium term. The long-running debate on 5G security in Germany may result in Chinese manufacturers being partially excluded from networks. In that case, we, too, would face a cost-intensive process of replacing all installed products.

Opportunities relating to strategic transformation and integration. SDG 9 FINANCE The IP transformation (all IP) concluded in Germany in the reporting year offers many opportunities: the resulting logical network speaks one language and, in technical terms, functions largely independently of the services transmitted. This will enable efficiency gains, e.g., by reducing the complexity of maintenance and operation, switching off service-specific legacy platforms, and saving energy. In addition, all IP will generate growth potential in the short to medium term by improving the customer experience of existing services (e.g., better voice quality, more customer self-service, greater configuration flexibility) and, in the medium to long term, by providing an indispensable basis for convergence products and the Internet of Things (IoT), and by shortening the time to market for new products.

One of the key benefits of the all-IP network is that it also acts as a foundation for the future cloud- and software-based production of networks and services. It creates opportunities to increase efficiency, accelerate the provision of new services and features, improve quality, and tap into new revenue potential, while at the same time increasing automation.

We are driving forward the transformation of our IT using agile development. This approach allows us to exploit new opportunities for efficient IT production, through the modular provision of components as well as through accelerated development. Furthermore, agile development makes it possible to reduce big bang risks in the delivery of major software releases.

Risks and opportunities relating to regulation SDG 16 RELATIONSHIPS

In the following section, we describe the main regulatory risks and opportunities that, as things currently stand, could affect our results of operations and financial position, and our reputation.

Regulatory risks arise from telecommunications-specific statutory regulations at the national, European, and U.S. level, and from the consequent powers of national authorities to regulate or intervene in the market and limit our freedom as regards product design and pricing. Deregulation can give rise to regulatory opportunities. Regulatory intervention, which we can only anticipate to a limited extent, may exacerbate existing price and competitive pressure. There are concerns that regulation in Germany and other European countries may also impact revenue and earnings trends in the medium to long term.

Changes in regulatory policy and legislation

EU legal framework for telecommunications. The European Electronic Communications Code, which reforms central EU regulation of the telecommunications sector, primarily price and access regulation, spectrum policy, sector-specific rules on consumer protection, and the universal service regime, entered into force on December 20, 2018. The member states had 24 months as of that date to transpose the requirements into national law. However, implementation has been delayed in a number of countries, including Germany. The corresponding Telecommunications Modernization Act (Telekommunikationsmodernisierungsgesetz) is not expected to pass into law before the second quarter of 2021.

The revision of the EU legal framework for telecommunications remains part of a package of new EU legislation on the single market for electronic communications that provides for amendments to the regulations governing media services – mainly due to the growing importance of internet offerings – which are competing with the TV services previously focused on (e.g., regarding copyright law, laws for the protection of minors from harmful media, consumer protection, and the liability of internet service providers (in particular hosting) for third-party content). At the national level, too, specific amendments (for instance, to the German State Media Treaty and the German Telemedia Act, as well as to competition law) are being discussed in response to the phenomena of digitalization and convergence.

For further information on key regulatory decisions, please refer to the section "The economic environment."

Awarding of spectrum

Risks could arise from the fact that inappropriate auction rules and frequency usage requirements, excessive reserve prices, or disproportionately high annual spectrum fees could jeopardize our planned acquisition of spectrum. Inappropriate conditions for the awarding of spectrum can include, for example, extensive build-out requirements and, in some cases, requirements to grant network access (national roaming, service provider access). By contrast, we see an opportunity in particular in the fact that such spectrum award procedures enable mobile network operators to obtain the optimum amount of spectrum for their future business. We would thus be equipped for further growth and innovation. The upcoming award procedures mainly relate to the auctioning of additional spectrum in the 700 MHz, 2,500 MHz, 3,400 MHz to 3,800 MHz, and the 26,000 MHz ranges. In addition, spectrum licenses, especially in the 900 MHz, 1,800 MHz, and 2,100 MHz ranges, will expire between 2021 and 2022 in some countries and need to be renewed. Award procedures are currently being prepared in Croatia, Poland, Romania, Slovakia, Hungary, and the United States.

For further information on spectrum auctions that were completed in 2020 or are still ongoing, please refer to the section "The economic environment."

Areas in which national regulators may intervene

European and national laws and regulations grant national regulators extensive powers of intervention. In addition to the aforementioned Code, a case in point at the European level is the **EU Regulation concerning the single market for electronic communications**, which was enacted in 2015. It contains provisions on **international roaming, net neutrality, and obligations to provide information**, which restrict our product design options, mainly as regards retail products. The Body of European Regulators for Electronic Communications (BEREC) has published guidelines for implementing this regulation. Risks arise from how the national regulators interpret both the regulation and these guidelines. When the Telecommunications Modernization Act enters into force in 2021, the previously non-binding communication by the Bundesnetzagentur on the interpretation of certain parts of the regulation will be replaced by a legally binding administrative order issued by the Bundesnetzagentur. In addition, national regulatory authorities have wide-ranging powers under law to require products to be adjusted in order to enforce the regulation and to impose fines in cases of non-compliance.

Our Group companies in Germany and Europe continue to be subject to extensive **regulation of wholesale products**, obligating us to make our network and services available to our competitors wherever we are deemed to have significant market power as an operator. The national regulators regularly check and determine the corresponding terms, conditions, and prices of these wholesale offerings. The key wholesale products subject to regulation are **unbundled local loop lines, bitstream products, leased lines**, and the associated services. As of 2021, termination rates will be determined directly by the European Commission by way of a **“Delegated Act.”** In addition, European and national consumer protection regulations apply. In Germany, for instance, the **Transparency Regulation** came into force on June 1, 2017, the main objective of which is to enhance transparency and cost control with telecommunications services for consumers. In this context, the Bundesnetzagentur introduced a system that enables consumers to measure the bandwidths available on their fixed-network and mobile lines.

In addition to the requirements of telecommunications law, our media products are also subject to special **European and national regulations under media law**, as well as non-sector-specific regulations such as data and consumer protection. These include, in the broader sense, copyright law, regulations concerning the responsibility for published content, requirements in relation to ensuring the protection of minors in the media, and requirements in relation to the content and user interfaces of media distribution platforms. Barring any changes to its shareholder structure on the one hand (the Federal Republic and KfW being its major shareholders), or to the legal situation, or the prevailing opinions of media regulators on the other, it is unlikely that Telekom Deutschland will be granted a license to broadcast radio and television programs.

Operational risks and opportunities

Employees. Our employees play a crucial role in the transformation of Deutsche Telekom. Their skills are a key factor to our business success. The general high demand on the labor market, in particular for specialists in highly relevant areas such as IT, makes it difficult to recruit new employees. An inability to attract and/or retain the necessary experts would have a negative impact on our business in the future.

In 2020, we once again used socially responsible measures to restructure the workforce in the Group, mainly by means of severance payments, phased and dedicated retirement, internal retraining measures, and employment opportunities in public service for civil servants offered by Vivento. We will continue this restructuring in the coming year. If it is not possible to implement the corresponding measures as planned or at all (for example, due to limited interest in severance payments), this may have negative effects on our financial targets. To avoid the risk of high potentials leaving the Group as a result of the staff reduction instruments, we make sure that the arrangement is voluntary on both sides in each individual case.

The right of civil servants to return to Deutsche Telekom also carries risks: When Group entities that employ civil servants are disposed of, it is generally possible to continue to employ them at the Group entity to be sold, provided the civil servant agrees or submits an application to be employed at the respective unit in future. However, there is a risk that they may return to us from a sold entity, for instance after the end of their temporary leave from civil servant status, without the Company being able to offer them jobs. Currently 1,343 civil servants are entitled to return from outside the Group to Deutsche Telekom in this way (as of December 31, 2020).

Risks relating to IT/NT network operations. We have an increasingly complex information/network technology infrastructure, which we constantly expand and upgrade to ensure the best customer experience and consolidate our technology leadership. Outages in the current and also future technical infrastructure cannot be completely ruled out and could in individual cases result in revenue losses or increased costs. After all, our IT/NT resources and structures are the key organizational and technical platform for our operations. The ongoing convergence of IT and NT harbors risks. In order to counter these holistically, our network, innovation, and IT activities are combined under the Board of Management department for Technology and Innovation.

Risks could arise in this area relating to all IT/NT systems and products that require internet access. For instance, faults between newly developed and existing IT/NT systems could cause interruptions to business processes, products, and services, such as smartphones and MagentaTV. In order to avoid the risk of failures, e.g., due to natural disasters or fires, we use technical early warning systems and redundant IT/NT systems. The Computer Emergency Response Team (CERT) at Deutsche Telekom Security is in charge of protecting our business customers' servers. In cloud computing, all data and applications are stored at a data center. Our data centers have security certification and meet strict data protection provisions and the EU regulations. All data relating to companies and private persons is protected from external access. Constant maintenance and automatic updates keep the security precautions up to date at all times. On the basis of a standardized Group-wide business continuity management (BCM) process, we also take organizational and technical measures to prevent damage from occurring or, if we cannot, to mitigate the subsequent effects. We also have insurance cover for insurable risks. SDG 9 FINANCE

Opportunities relating to IT/NT network operations. The utilization of large data volumes (big data) from our networks can improve and speed up decision-making processes by enhancing transparency. It does so by shifting the basis for decisions from hypotheses to facts and, for example, enabling correlations to be recognized.

Our Systems Solutions operating segment covers innovative business areas in the digital transformation of business processes, such as the Internet of Things and cybersecurity. These business areas could develop faster than expected. As a pioneer of the digital transformation, we have an opportunity not only to participate in, but also actively shape, the market trend through a variety projects in the fields of healthcare and mobility solutions. In the ramp-up phase of these new business models based on M2M communication and big data, our partner-oriented approach is a highly promising way of contributing our core competencies – in cloud computing and cybersecurity – to various projects. What is more, we already have initial references in areas of the Internet of Things market, e.g., predictive maintenance. SDG 12 FINANCE

As a technology and development partner for toll collection business in Europe, we already have a strong competitive position. We have earned valuable references in European toll collection projects in Belgium and Austria and through the planned launch of a Europe-wide toll collection system (Toll4Europe). This will help to give us an edge over our competitors.

Risks relating to the existing IT architecture in the United States. T-Mobile US relies upon its systems and networks and the systems and networks of other providers and suppliers, to provide and support services. T-Mobile US' business, like that of most retailers and wireless companies, involves the receipt, storage, and transmission of customers' confidential information, including sensitive personal information, payment card information, and confidential information about their employees and suppliers, as well as other sensitive information about T-Mobile US, such as business plans, transactions, and intellectual property. Cyberattacks, such as denial of service and other malicious attacks, could disrupt T-Mobile US' internal systems, networks, and applications, impair its ability to provide services to customers, and have other adverse effects on its business.

Future viability of the IT architecture in the United States. In order to grow and remain competitive with new and evolving technologies in the industry, T-Mobile US will need to adapt to future changes in technology, continually invest in its network, increase network capacity, enhance existing offerings, and introduce new offerings to address its current and potential customers' changing demands. If T-Mobile US is unable to take advantage of technological developments on a timely basis, then it may experience a decline in demand for its services or face challenges in implementing or evolving its business strategy. Following the business combination with Sprint, T-Mobile US operates and maintains several customer billing systems and will continue to run them until all of Sprint's legacy customers have been successfully migrated to T-Mobile US' existing billing systems. Unexpected difficulties or delays could cause major system or business disruptions.

Procurement. Deutsche Telekom cooperates with a variety of suppliers of technical (information and communication technology) and non-technical products and services. Products and services that might involve a higher risk include software and hardware, network technology components, and all products and services provided directly to end customers.

Supply risks cannot be entirely ruled out. Pandemics, other delivery bottlenecks, price increases, changes in the prevailing economic or political conditions, or suppliers' product strategies may have a negative impact on our business processes and our results. Additional risks may also result from the dependence on individual suppliers or from individual suppliers defaulting. This is especially true for Chinese telecommunications suppliers. We employ organizational, contractual, and procurement strategy measures to counteract such risks. SDG 17 RELATIONSHIPS

Data privacy and data security. Following the successful implementation of the General Data Protection Regulation (GDPR) in 2018 and the harmonization of the increased data protection requirements under the GDPR in the EU and in Germany in 2019, these regulations were adjusted to new developments and further consolidated in 2020. For instance, the GDPR has introduced new procedures such as the Privacy Impact Assessment for assessing and documenting risks in data processing. We have already had such a procedure in place for ten years in the form of the Privacy and Security Assessment (PSA), which is fully digital. But such procedures also need to adapt to modern agile working methods and move with the Group's changing organizational structures and ways of working. That is why, with the PSA@AGIL project, we have updated the procedure and also introduced new roles with explicit data privacy and security responsibility in agile product development. In addition to new ways of working, we have carefully examined technical developments and, for example, provided support within the Group for the service app solution introduced in many European countries, which our customers can use to manage their Deutsche Telekom products and contracts. Furthermore, we have supported the further development of our MagentaTV product, where, for example, we have introduced a privacy dashboard, which enables users to manage and change their data privacy settings. In addition, in collaboration with the Robert Koch Institute, SAP, and other partners, we developed the German coronavirus tracing app (Corona-Warn-App) and the subsequent European solution. Deutsche Telekom played a decisive role in the data privacy concept throughout the development of the app, coordinating between the partners, the Federal Government, and other parties involved. We were thus able to make a substantial contribution to fighting the coronavirus pandemic in Germany and Europe. In accordance with the requirements of the Federal Government, user IDs are stored in a decentralized manner, i.e., on the smartphones of the people you meet. SDG 3 RELATIONSHIPS The GDPR has created a good basis for data processing in the EU, based on a set of uniform rules. It assures Europe of a high level of data protection and, at the same time, will pave the way for new digital business models. However, experience gained so far shows that the intended harmonization is at risk. The regulatory authorities of the member states are called upon to strengthen coherence as part of the consistency mechanism. This relates in particular to positioning on individual data protection issues, but also to divergences in the application of the framework for fines. SDG 16 STRUCTURE

On July 16, 2020, the European Court of Justice issued a landmark judgment (Schrems II). Europe's highest court has addressed the concerns on the level of data protection in the United States and declared the adequacy decision of the EU Commission for the United States (Privacy Shield) void. Since that date, the Privacy Shield has been invalid. The standard contractual clauses on data privacy were confirmed in the ruling because they contain suitable protection mechanisms for data transfer in general. This ensures an adequate level of data protection can be observed by both contracting parties. However, extensive inspection obligations apply for the contracting parties and the data protection authorities to verify that the data protection level is in fact adequate. Extensive technical and legal checks must be carried out for all third-country transfers. Group Privacy is working with all affected Group units to work through the implementation requirements arising from the ruling and the publications of the European Data Protection Board to ensure that the necessary changes in business and contractual relationships can be made. In addition, as a result of the ruling by the EU Commission, new standard contractual clauses have been proposed. The draft stipulates that all agreements with companies in third countries must be amended to take account of these new clauses by the end of 2021. All companies in the EU, but also their contractual partners around the globe, must rise to the significant challenges of this ruling. However, since the ePrivacy Regulation has still not yet been adopted, there is yet another sector-specific regulatory challenge for the telecommunications sector in the EU. As telecommunications providers' data processing options are substantially restricted compared with what is possible under the GDPR, innovative big data and artificial intelligence applications in the field of telecommunications cannot realize the same kind of potential as those of companies that are only subject to the GDPR. It would be a huge stride forward for telecommunication providers if the ePrivacy Regulation, which has been under negotiation at a European level since 2017, were to be adopted and the possibility of processing communication metadata for compatible purposes were to be permitted. This would be an important step towards innovation-friendly regulation while at the same time maintaining a high level of data protection.

IT security continues to pose major challenges. In addition to preventive measures such as integrated security in business processes and measures to raise security awareness among employees, we counter these challenges with increased focus on the analysis of threats and cyber risks. This is where our early warning system comes in: It detects new sources and types of cyberattack, analyzes the behavior of the attackers while maintaining strict data privacy, and identifies new trends in the field of security. Along with the honeypot systems, which simulate vulnerabilities in IT systems, our early warning system includes alerts and analytical tools for spam mails, viruses, and Trojans. We exchange the information we obtain from all these systems with public and private bodies to detect new attack patterns and develop new protection systems.

Cybercrime and industrial espionage are on the rise. We are addressing these risks with comprehensive security concepts. In order to create greater transparency and thus be in a stronger position to tackle these threats, we are relying more and more on partnerships, e.g., with public and private organizations. By means of the Security by Design principle we have made security an integral part of our development process for new products and information systems. In addition, we carry out intensive and obligatory digital security tests.

We are continually striving to accelerate our growth through IT security solutions. To this end, we have combined our security units within Deutsche Telekom Security. We want to leverage this end-to-end security portfolio to secure market shares and score points with security concepts on the back of megatrends like the Internet of Things and Industry 4.0. We are also continuing to gradually expand our partner ecosystem in the area of cybersecurity. SDG 17 RELATIONSHIPS

We provide regular updates on the latest developments in data protection and data security on our website at www.telekom.com/en/corporate-responsibility/data-protection-data-security.

Risks and opportunities arising from brand, communication, and reputation

Negative media reports. An unforeseeable negative media report on our products and services or our corporate activities and responsibilities can have a huge impact on the reputation of our Company and our brand image. Social networks have made it possible that such information and opinions can spread much faster and more widely. Ultimately, negative reports can impact on our revenue and our brand value. In order to avoid this, we engage in a constant, intensive, and constructive dialog, in particular with our customers, the media, and the financial world. For us, the top priority is to take as balanced a view as possible of the interests of all stakeholders and thereby uphold our reputation as a reliable partner.

Sustainability risks and opportunities. For us, comprehensive risk and opportunity management also means considering the opportunities and risks arising from ecological or social aspects or from the management of our Company. To this end, we actively and systematically involve all relevant stakeholders in the process so as to identify current and potential risks and opportunities. In parallel with our ongoing monitoring of ecological, social, and governance issues, we systematically determine our stakeholders' positions on these issues. The key tools we use here are: our stakeholder survey; a document analysis, covering legal texts, studies, and media publications, amongst other things; our involvement in working groups and committees of national and international business associations and social organizations, e.g., GeSI, ETNO, BDI, Bitkom, Econsense, and BAGSO; stakeholder dialog formats organized by us; and our various publications, such as the press review and newsletter. We also integrate the biggest sustainability risks in our internal compliance assessment, thereby recording the associated positioning and development of measures in the various business areas. SDG 17 RELATIONSHIPS

For further information on sustainability, please refer to the section "Corporate responsibility and non-financial statement."

We have identified the following as our main sustainability management issues:

- **Reputation.** How we deal with sustainability issues also entails both opportunities and risks for our reputation. A high level of service quality is one of the most important factors for improving customer perception. Customer satisfaction has been embedded in our Group management as a non-financial performance indicator to underline the importance of this issue. Transparency and reporting help to promote the trust of other external stakeholders in our Group. Our annual and CR reports also serve this purpose. However, issues such as business practices, data privacy, and work standards in the supply chain, conduct in relation to human rights, and ethical conduct in relation to and use of artificial intelligence also entail reputational risks: if our brands, products, or services are connected with such issues in negative media reports, this can cause substantial damage to our reputation. As part of our sustainability management activities, we continuously review such potential risks and take measures to minimize them. This includes systematically incorporating them in the Group's internal compliance management system, so as to determine the relevance of the risks in relation to sustainability issues and their effect on reputation across units. We also ascertain how our products and services make a positive contribution to sustainability in order to enhance our reputation. SDG 16 FINANCE
- **Climate protection.** SDG 13 ENVIRONMENT We pursue an integrated climate strategy, which means focusing not only on the risks that climate change poses for us and our stakeholders, but also on the opportunities it presents. By 2030, ICT products and services will have the potential to save up to seven times as much in CO_2 emissions in other industries as the ICT sector itself generates, even taking into account the expected rebound effects (according to the GeSI Digital for Purpose study). Taking an optimistic view, this could mean a 9 % reduction in global CO_2 emissions by 2030. In addition, investments of around USD 3 trillion in innovative solutions are expected by 2030, which will not only expand the business, but will also support the SDGs. We are supporting this trend by evaluating our product portfolio to identify sustainability benefits. In addition, we want to continuously improve the ratio of the emissions that our products and services save to those generated by our own value chain. According to this figure, the positive CO_2 effects facilitated for our customers in Germany were 610 % higher in 2020 than our own CO_2 emissions (enablement factor of 7.1 to 1).

Climate change risks are already visible in the form of increasingly extreme weather conditions. This is having a direct effect on our stakeholders, e.g., our customers, suppliers, and employees. The risk is assessed in relation to the continuation of operations as part of risk management and is managed at an operational level in the business units. Deutsche Telekom welcomes the targets behind the Task Force on Climate-related Financial Disclosures (TCFD) and is actively working to implement them. In a first step, we conducted a gap analysis on the coverage of TCFD recommendations. In a number of workshops with relevant players from technology, procurement, strategy, and risk management, we defined Deutsche Telekom AG's key climate-related opportunities and risks and gave them an initial weighting. The next step will be to conduct a location analysis, with the example of Germany, of the physical climate risks in various scenarios (business as usual / 4-degree scenario).

Detailed information on this will be published in our 2020 CR report.

We can take further preventive action in this area by also reducing our own CO_2 emissions. For this reason, in 2019 we set ourselves the ambitious target of cutting 90 % of emissions across the Group by 2030 as compared with 2017. Climate protection also carries financial risks, whether from the introduction of levies on CO_2 emissions or increased energy costs, as well as stricter requirements for products, for example in relation to energy efficiency. The measures we are taking to counter these risks include measuring our own energy efficiency and finding ways to improve it. We have a Group-wide program to specifically address our supply chain and we are working to optimize our products and their packaging. In 2020, several of our national companies sourced 100 % of their electricity from renewables (Deutsche Telekom Group in Germany, Magyar Telekom in Hungary, OTE in Greece, as well as T-Mobile Netherlands, T-Systems Iberia, T-Systems India, and all T-Systems and GBS entities in Russia). A further six entities procured almost all of their electricity needs from renewable energies (T-Mobile and T-Systems Austria, T-Systems Nordic, T-Systems Netherlands, T-Systems Brazil, and Hrvatski Telekom). All of these entities are thus actively working to manage the risks from climate change.

- **Suppliers.** SDG 8 RELATIONSHIPS We see more sustainability in our supply chain as an opportunity – for our reputation and our business success. Apart from the general risks associated with our global procurement activities, we can be exposed to country- and supplier-specific risks. These include, for example, the use of child labor, the conscious acceptance of environmental damage, or inadequate local working and safety conditions. We reduce these risks by systematically reviewing our suppliers. We conduct these audits within the scope of the Joint Audit Corporation (JAC). The aim of the JAC is to reduce sustainability risks in our supply chain and to improve ecological and social aspects, including the issue of human rights. As such, the audit is compliant with internationally recognized guidelines and standards, such as the ILO Core Labor Standards, the UN Guiding Principles on Business and Human Rights, and the OECD Guidelines for Multinational Enterprises. Our partnerships with suppliers that comply with international sustainability standards ensure a high level of product quality and reliable procurement. We have a special development program in place to help strategic suppliers introduce business practices that are both socially and ecologically acceptable while remaining economically efficient. This program showed measurable successes again in the reporting period and has three major advantages: It has a positive impact on our suppliers' working conditions, enhances their profitability, and makes the economic relevance of sustainability clear for both sides, i.e., for our suppliers and for the Group alike. For instance, better working conditions at our suppliers reduces the number of work-related accidents as well as the attrition rate. That, in turn, ensures high product quality and increases productivity, while at the same time lowering costs for recruitment and training. Thus, not only are we strengthening our suppliers' profitability and CR performance, we are also significantly reducing identified risks.

Health and environment. Mobile communications, or the electromagnetic fields used in mobile communications, regularly give rise to concerns among the general population about potential health risks. This issue continues to be the subject of public, political, and scientific debate. Acceptance problems among the general public mostly concern mobile communications networks and occasionally the use of mobile terminals such as smartphones, tablets, and laptops. The discussion has intensified repercussions for the build-out of the mobile infrastructure. In the fixed network, this can affect the use of traditional IP and DECT (digital cordless) phones, and devices that use Wi-Fi technology. There is a risk of regulatory interventions, such as tightened thresholds for electromagnetic fields or the implementation of precautionary measures in mobile communications, e.g., amendments to building law, or also the risk of a labeling requirement for handsets.

Over the past few years, recognized expert organizations such as the World Health Organization (WHO) and the International Commission on Non-Ionizing Radiation Protection (ICNIRP) have repeatedly reviewed the current thresholds for mobile communications and confirmed that – if these values are complied with – the use of mobile technology is safe based on current scientific knowledge. Various expert organizations, currently the ICNIRP, regularly review the recommended thresholds on the basis of the latest scientific findings.

We are convinced that mobile communications technology is safe if specific threshold values are complied with. We are supported in this conviction by the assessment of the recognized bodies. Our responsible approach to this issue finds expression in our Group-wide EMF Policy, with which we commit ourselves to more transparency, information, participation, and support of independent mobile communications research, far beyond that which is stipulated by legal requirements. We aim to overcome concerns among the general public by pursuing an objective, scientifically well-founded, and transparent information policy. We thus continue to see it as our duty to continue our trust-based dialog with local authorities and to ensure its successful progress. This particularly applies since our long-standing collaboration with municipalities to expand the mobile network was enshrined in law in 2013. Previously, this collaboration was based on voluntary self-commitments by the network operators. SDG 3 RELATIONSHIPS

Litigation

Major ongoing legal proceedings

Deutsche Telekom is party to proceedings both in and out of court with government agencies, competitors, and other parties. The proceedings listed below are of particular importance from our perspective. If, in extremely rare cases, required disclosures on the significance of individual litigation and anti-trust proceedings are not made, we concluded that these disclosures may seriously undermine the outcome of the relevant proceedings.

Prospectus liability proceedings (third public offering, or DT3). This relates to initially around 2,600 ongoing lawsuits from some 16,000 alleged buyers of T-Shares sold on the basis of the prospectus published on May 26, 2000. The plaintiffs assert that individual figures given in this prospectus were inaccurate or incomplete. The amount in dispute currently totals approximately EUR 78 million plus interest. Some of the actions are also directed at KfW and/or the Federal Republic of Germany as well as the banks that handled the issuances. The Frankfurt/Main Regional Court had issued orders for reference to the Frankfurt/Main Higher Regional Court in accordance with the German Capital Investor Model Proceedings Act (Kapitalanleger-Musterverfahrensgesetz – KapMuG) and has temporarily suspended the initial proceedings. On May 16, 2012, the Frankfurt/Main Higher Regional Court had ruled that there were no material errors in Deutsche Telekom AG's prospectus. In its decision on October 21, 2014, the Federal Court of Justice partly revoked this ruling, determined that there was a mistake in the prospectus, and referred the case back to the Frankfurt/Main Higher Regional Court. On November 30, 2016, the Frankfurt/Main Higher Regional Court ruled that the mistake in the prospectus identified by the Federal Court of Justice could result in liability on the part of Deutsche Telekom AG, although the details of that liability would have to be established in the initial proceedings. Both Deutsche Telekom AG and some of the individual plaintiffs in the model proceedings have brought an appeal before the Federal Court of Justice against this decision. We continue to hold the opinion that there are compelling reasons why Deutsche Telekom AG should not be liable for damages. An adequate contingent liability has been recognized and is shown in the notes to the consolidated financial statements. In the annual financial statements of Deutsche Telekom AG prepared in accordance with German GAAP, adequate provisions for this risk have been recognized.

Claims relating to charges for the shared use of cable ducts. In 2012, Kabel Deutschland Vertrieb und Service GmbH (today Vodafone Kabel Deutschland GmbH (VKDG)) filed a claim against Telekom Deutschland GmbH to reduce the annual charge for the rights to use cable duct capacities in the future and gain a partial refund of the payments made in this connection since 2004. According to VKDG's latest estimates, its claims amounted to around EUR 624 million along with around EUR 9 million for the alleged benefit from additional interest, plus interest in each case. Claims prior to 2009 are now no longer being asserted by VKDG. After the Frankfurt/Main Regional Court had dismissed the complaint in 2013, the Frankfurt/Main Higher Regional Court also rejected the appeal in December 2014. In the ruling dated January 24, 2017, the Federal Court of Justice reversed the appeal ruling and referred the case back to the Frankfurt/Main Higher Regional Court for further consideration. In its ruling dated December 20, 2018, the Frankfurt/Main Higher Regional Court again rejected the appeal and disallowed a further appeal. In similar proceedings, Unitymedia Hessen GmbH & Co. KG, Unitymedia NRW GmbH, and Kabel BW GmbH filed claims against Telekom Deutschland GmbH in January 2013, demanding that it cease charging the plaintiffs more than a specific and precisely stated amount for the shared use of cable ducts. In addition, the plaintiffs are demanding a refund of currently around EUR 570 million plus interest. The claim was dismissed in the first instance by the Cologne Regional Court on October 11, 2016. In its ruling dated March 14, 2018, the Düsseldorf Higher Regional Court rejected the appeal against this decision. In both proceedings, the plaintiffs have lodged a complaint against the non-allowance of appeal with the Federal Court of Justice. At present the financial impact of both these proceedings cannot be assessed with sufficient certainty.

Claim for damages in Malaysia despite an earlier, contrary, legally binding arbitration ruling. Celcom Malaysia Berhad (Celcom) and Technology Resources Industries Berhad are pursuing actions with the state courts in Kuala Lumpur, Malaysia, against eleven defendants in total, including DeTeAsia Holding GmbH, a subsidiary of Deutsche Telekom AG. The plaintiffs are demanding damages and compensation of USD 232 million plus interest. DeTeAsia Holding GmbH had enforced this amount against Celcom in 2005 on the basis of a final arbitral award in its favor. The main proceedings in the court of first instance began in January 2018. Adequate provisions for this risk were recognized.

Patents and licenses. Like many other large telecommunications and internet providers, Deutsche Telekom is exposed to a growing number of intellectual property rights disputes. There is a risk that we may have to pay license fees and/or compensation; we are also exposed to a risk of cease-and-desist orders, for example relating to the sale of a product or the use of a technology.

Further, Deutsche Telekom intends to defend itself and/or pursue its claims vigorously in each of these proceedings.

Proceedings concluded

Arbitration proceedings against T-Mobile Polska S.A. In August 2019, Polish telecommunications provider P4 Sp. z o.o. had initiated arbitration proceedings against T-Mobile Polska S.A. The plaintiff claimed around PLN 400 million (around EUR 93 million) plus interest as payment for its alleged entitlement to retroactive mobile termination rates. The arbitration proceedings filed by P4 Sp. z o.o. were dismissed in a final arbitral award dated December 30, 2020.

Anti-trust proceedings

Like all companies, our Group is subject to anti-trust law. In recent years, we have notably stepped up our compliance efforts in this area too. Nevertheless, Deutsche Telekom and its subsidiaries are from time to time subject to proceedings under competition law or follow-on damage actions under civil law. In the following, we describe material anti-trust proceedings and resulting claims for damages.

Claims for damages against Slovak Telekom following a European Commission decision to impose fines. The European Commission decided on October 15, 2014 that Slovak Telekom had abused its market power on the Slovak broadband market and as a result imposed fines on Slovak Telekom and Deutsche Telekom, which were paid in full in January 2015. Slovak Telekom and Deutsche Telekom challenged the European Commission's decision on December 29, 2014 before the General Court of the European Union. On December 13, 2018, the court partially overturned the European Commission's decision and reduced the fines by a total of EUR 13 million. Despite this positive judgment, on February 21, 2019, Slovak Telekom and Deutsche Telekom filed an appeal with the European Court of Justice against the ruling by the General Court. With this appeal, Slovak Telekom and Deutsche Telekom are seeking, inter alia, to overturn the findings of the European Commission determining Slovak Telekom's behavior as abusive. Following the decision of the European Commission, competitors filed damage actions against Slovak Telekom with the civil court in Bratislava. These claims seek compensation for alleged damages due to Slovak Telekom's abuse of a dominant market position, as determined by the European Commission. At present, two claims totaling EUR 112 million plus interest are still pending. It is currently not possible to estimate the financial impact with sufficient certainty.

Financial risks

Liquidity, credit, currency, interest rate risks

With regard to its assets, liabilities, and planned transactions, our Group is particularly exposed to liquidity risks, credit risks, and the risk of changes in exchange rates and interest rates. We want to contain these risks. Risks with an impact on cash flows are monitored in a standard process and hedged accordingly using derivative and non-derivative hedges. Derivative financial instruments are used solely for hedging and never for speculative purposes. The following risk areas – liquidity, credit, currency, and interest rate risks – are evaluated taking into account all hedges.

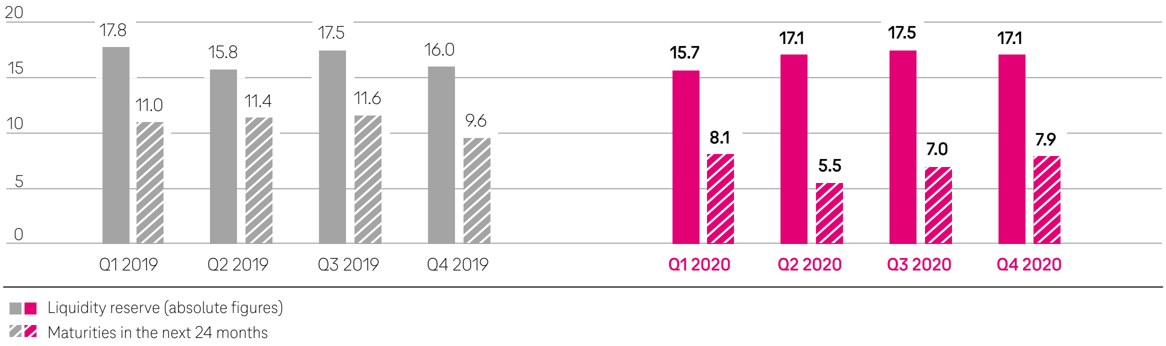
For further information on the risk assessment, please refer to the “Corporate risks” table above.

Liquidity risk. To ensure the Group's and Deutsche Telekom AG's solvency and financial flexibility at all times, we maintain a liquidity reserve in the form of credit lines and cash as part of our liquidity management. Since the successful business combination of T-Mobile US and Sprint, T-Mobile US has pursued its own separate financing and liquidity strategy.

At December 31, 2020, Deutsche Telekom (excluding T-Mobile US) had standardized bilateral credit agreements with 21 banks for a total of EUR 12.6 billion. At all times, our liquidity reserve covered the bonds falling due and long-term loans of Deutsche Telekom (excluding T-Mobile US) for the next 24 months at least (see graphic below). From today's perspective, Deutsche Telekom's (excluding T-Mobile US) access to the international debt capital markets is not jeopardized.

Development of the liquidity reserve (excluding T-Mobile US), maturities in 2019[a]/2020

billions of €



[a] 2019 pro forma figures for Deutsche Telekom (excluding T-Mobile US).

Furthermore, bilateral credit lines with an aggregate total volume of USD 5.5 billion (EUR 4.5 billion) plus a cash balance of USD 10.4 billion (EUR 8.5 billion) were available to T-Mobile US as of December 31, 2020. This liquidity reserve covers T-Mobile US' maturing bonds at all times for at least the next 24 months. From today's perspective, access to the international debt capital markets for T-Mobile US is not jeopardized.

Credit risks. In our operating business and certain banking activities, we are exposed to a credit risk, i.e., the risk that a counterparty will not fulfill its contractual obligations. To keep this credit risk to a minimum, we conclude transactions with regard to financing activities only with counterparties that have at least a credit rating of BBB+/Baa1; we also actively manage limits. In addition, we have concluded collateral agreements for our derivative transactions.

Currency risks. The currency risks result from investments, financing measures, and operations. Risks from foreign-currency fluctuations are hedged if they affect the Group's cash flows. However, foreign-currency risks that do not influence the Group's cash flows (e.g., risks resulting from the translation of assets and liabilities of foreign operations into euros) are not hedged. Deutsche Telekom may nevertheless also hedge these foreign-currency risks under certain circumstances.

Interest rate risks. Our interest rate risks mainly result from financing activities. In addition to the interest rate risk pertaining to variable-interest debt, this also includes the issue of new liabilities. With interest rates still at an all-time low, our risk assessment for a rise in interest rates is unchanged against the prior year. As such, the risk significance in the risk category "Liquidity, credit, currency, interest rate risks" remains at "medium" overall. Interest risks are managed as part of our interest rate management activities. A maximum, variable component is set each year for the debt position in euros; the debt position of T-Mobile US in U.S. dollars primarily comprises fixed-income securities, some of which include issuer cancellation rights. The Board of Management and the Supervisory Board are regularly informed about the situation.

For further information, please refer to Note 41 "Financial instruments and risk management," in the notes to the consolidated financial statements.

Tax risks

We are subject to the applicable tax laws in many different countries. Risks can arise from changes in local taxation laws or case law and different interpretations of existing provisions. These risks can impact both our tax expense and benefit as well as tax receivables and liabilities.

Other financial risks

This section contains information on other financial risks that we consider to be immaterial at present or cannot evaluate based on current knowledge.

Rating risk. As of December 31, 2020, Deutsche Telekom AG's credit rating with Moody's was Baa1 with a negative outlook, while Standard & Poor's rated us BBB with a stable outlook, and Fitch confirmed its current rating of BBB+ with a stable outlook. Standard & Poor's reduced its rating from BBB+ to BBB, as previously announced, upon the closing of the business combination of T-Mobile US and Sprint. Over time, a lower rating is likely to lead to an increase in the cost of debt financing.

Sales of shares by the Federal Republic or KfW Bankengruppe. As of December 31, 2020, the Federal Republic and KfW Bankengruppe jointly held 31.9 % in Deutsche Telekom AG. It is possible that the Federal Republic will continue its policy of privatization and sell further equity interests in a manner designed not to disrupt the capital markets and with the involvement of KfW Bankengruppe. There is a risk that the sale of a significant volume of shares by the Federal Republic or KfW Bankengruppe, or any speculation to this effect, could have a negative impact on the price of the T-Share.

Our CR strategy enhances the value of our Company in the long term, which also has a positive effect of reducing business risks. Investors with a long-term horizon acknowledge this approach. In the capital markets, this is evident, for example, in the proportion of T-Shares held by investors that base their investment decisions, at least in part, on sustainability criteria. As of September 30, 2020, around 13 % of all T-Shares were held by SRI (socially responsible investment) investors, and 9 % were held by investors who manage their funds primarily in accordance with SRI aspects. SDG 8 FINANCE

Impairment of Deutsche Telekom AG's assets. The value of the assets of Deutsche Telekom AG and its subsidiaries is reviewed periodically. In addition to the regular annual measurements, specific impairment tests may be carried out, for example, where changes in the economic, regulatory, business, or political environment suggest that the value of goodwill, intangible assets, property, plant and equipment, investments accounted for using the equity method, or other financial assets might have decreased. These tests may lead to the recognition of impairment losses that do not, however, result in cash outflows. This could impact to a considerable extent on our results, which in turn may negatively affect the T-Share price.

For further information, please refer to the section "Summary of accounting policies – Judgments and estimates" in the notes to the consolidated financial statements.

Other disclosures

Significant events after the reporting period

For information on events after the reporting period, please refer to Note 46 "Events after the reporting period" in the notes to the consolidated financial statements and to the notes to the annual financial statements of Deutsche Telekom AG as of December 31, 2020.

Accounting-related internal control system

Deutsche Telekom AG's internal control system (ICS) is based on the internationally recognized COSO (Committee of Sponsoring Organizations of the Treadway Commission) Internal Control – Integrated Framework, COSO I, as amended on May 14, 2013.

The Audit Committee of the Supervisory Board of Deutsche Telekom AG monitors the effectiveness of the ICS as required by § 107 (3) sentence 2 AktG. The Board of Management is responsible for defining the scope and structure of the ICS at its discretion. Internal Audit is responsible for independently reviewing the functionality and effectiveness of the ICS in the Group and at Deutsche Telekom AG, and, to comply with this task, has comprehensive information, audit, and inspection rights.

The accounting-related ICS comprises the principles, methods, and measures used to ensure appropriate accounting. It is continuously being refined and aims to ensure the consolidated financial statements of Deutsche Telekom are prepared in accordance with the International Financial Reporting Standards (IFRS) as adopted by the European Union, as well as with the regulations under commercial law as set forth in § 315e (1) HGB. Another objective of the accounting-related ICS is the preparation of the annual financial statements of Deutsche Telekom AG and the combined management report in accordance with German GAAP.

It is generally true of any ICS that regardless of how it is specifically structured there can be no absolute guarantee that it will achieve its objectives. Therefore, as regards the accounting-related ICS, there can only ever be relative, but no absolute, certainty that material accounting misstatements can be prevented or detected.

Group Accounting manages the processes of Group accounting and management reporting. Laws, accounting standards, and other pronouncements are continuously analyzed as to whether and to what extent they are relevant and how they impact on financial reporting. The relevant requirements are defined in the Group Accounting Manual, for example, communicated to the relevant units and, together with the financial reporting calendar that is binding throughout the Group, form the basis of the financial reporting process. In addition, supplementary process directives such as the Intercompany Policy, standardized reporting formats, IT systems, as well as IT-based reporting and consolidation processes support the process of uniform and compliant Group accounting. Where necessary, we also draw on the services of external service providers, for example, to measure pension obligations. Group Accounting ensures that these requirements are complied with consistently throughout the Group. The staff involved in the accounting process receive regular training. Deutsche Telekom AG and the Group companies are responsible for ensuring that Group-wide policies and procedures are complied with. The Group companies ensure the compliance and timeliness of their accounting-related processes and systems and, in doing so, are supported and monitored by Group Accounting.

Operational accounting processes at the national and international level are increasingly managed by our shared service centers. Harmonizing the processes enhances their efficiency and quality and, in turn, improves the reliability of the internal ICS. The ICS thus safeguards both the quality of internal processes at the shared service centers and the interfaces to the Group companies by means of adequate controls and an internal certification process.

Internal controls are embedded in the accounting process depending on risk levels. The accounting-related ICS comprises both preventive and detective controls, which include:

- IT-based and manual matching
- The segregation of functions
- The dual-checking principle
- Monitoring controls
- General IT checks such as access management in IT systems, and change management

We have implemented a standardized process throughout the Group for monitoring the effectiveness of the accounting-related ICS. This process systematically focuses on risks of possible misstatements in the consolidated financial statements. At the beginning of the year, specific accounts and accounting-related process steps are selected based on risk factors. They are then reviewed for effectiveness in the course of the year. If control weaknesses are found, they are analyzed and assessed, particularly in terms of their impact on the consolidated financial statements and the combined management report. Material control weaknesses, the action plans for eradicating them, and ongoing progress are reported to the Board of Management and additionally to the Audit Committee of the Supervisory Board of Deutsche Telekom AG. In order to ensure a high-quality accounting-related ICS, Internal Audit is closely involved in all stages of the process.

Corporate Governance Statement in accordance with §§ 289f, 315d HGB

The Corporate Governance Statement in accordance with § 289f and § 315d HGB forms part of the combined management report.

> The Declaration of Conformity can be found on Deutsche Telekom AG's website: www.telekom.com/en/investor-relations/management-and-corporate-governance

Legal structure of the Group

Deutsche Telekom AG, Bonn, is the parent of the Deutsche Telekom Group. Its shares are traded on the Frankfurt/Main Stock Exchange as well as on other stock exchanges.

> For information on the composition of capital stock in accordance with § 289a (1) HGB and § 315a HGB of direct and indirect equity investments, please refer to Note 19 "Shareholders' equity" in the notes to the consolidated financial statements and to the notes to the annual financial statements of Deutsche Telekom AG as of December 31, 2020.

Shareholders' equity

Each share entitles the holder to one vote. These voting rights are restricted, however, in relation to treasury shares (at December 31, 2020: around 18 million in total).

Treasury shares. The amount of issued capital assigned to treasury shares was approximately EUR 46 million at December 31, 2020. This equates to 0.4 % of the capital stock. 18,002,303 treasury shares were held at December 31, 2020.

> For information on the treasury shares in accordance with § 160 (1) No. 2 AktG, please refer to Note 8 in the annual financial statements of Deutsche Telekom AG as of December 31, 2020 and to Note 19 "Shareholders' equity" in the notes to the consolidated financial statements.

The shareholders' meeting resolved on May 25, 2016 to authorize the Board of Management to purchase shares in the Company by May 24, 2021, with the amount of share capital accounted for by these shares totaling up to EUR 1,179,302,878.72, provided the shares to be purchased on the basis of this authorization in conjunction with the other shares of the Company that the Company has already purchased and still possesses or are to be assigned to it under § 71d and § 71e AktG do not at any time account for more than 10 % of the Company's share capital. Moreover, the requirements under § 71 (2) sentences 2 and 3 AktG must be complied with. Shares shall not be purchased for the purpose of trading in treasury shares. This authorization may be exercised in full or in part. The purchase can be carried out in partial tranches spread over various purchase dates within the authorization period until the maximum purchase volume is reached. Dependent Group companies of Deutsche Telekom AG within the meaning of § 17 AktG or third parties acting for the account of Deutsche Telekom AG or for the account of dependent Group companies of Deutsche Telekom AG within the meaning of § 17 AktG are also entitled to purchase the shares. The shares are purchased through the stock exchange in adherence to the principle of equal treatment (§ 53a AktG). Shares can instead also be purchased by means of a public purchase or share exchange offer addressed to all shareholders, which, subject to a subsequently approved exclusion of the right to offer shares, must also comply with the principle of equal treatment.

The shares may be used for one or several of the purposes permitted by the authorization granted by the shareholders' meeting on May 25, 2016 under item 6 on the agenda. The shares may also be used for purposes involving an exclusion of subscription rights. They may also be sold on the stock market or by way of an offer to all shareholders, or withdrawn. The shares may also be used to fulfill the rights of Board of Management members to receive shares in Deutsche Telekom AG, which the Supervisory Board has granted to these members as part of the arrangements governing the compensation of the Board of Management, on the basis of a decision by the Supervisory Board to this effect.

Under the resolution of the shareholders' meeting on May 25, 2016, the Board of Management is also authorized to acquire the shares through the use of equity derivatives.

On the basis of the authorization by the shareholders' meeting on May 25, 2016 described above and corresponding authorizations by the shareholders' meeting on May 12, 2011 and May 24, 2012, 110 thousand shares were acquired in June 2011, 206 thousand shares in September 2011, and 268 thousand shares in January 2013. The total volumes amounted to EUR 2,762 thousand in the 2011 financial year, and EUR 2,394 thousand in the 2013 financial year (excluding transaction costs). This increased the number of treasury shares by 316 thousand and 268 thousand, respectively. Further, 90 thousand shares and 860 thousand shares were acquired in September and October 2015, respectively, for an aggregate amount of EUR 14,787 thousand (excluding transaction costs); these acquisitions increased the number of treasury shares by 950 thousand.

No treasury shares were acquired in the reporting period.

As part of the Share Matching Plan, 2 thousand treasury shares were transferred free of charge to the custody accounts of eligible participants in 2012 and a further 2 thousand in 2013. A further 90 thousand treasury shares were transferred free of charge in the 2014 financial year. An additional 140 thousand treasury shares were transferred in 2015. In the 2016 financial year, 232 thousand treasury shares were transferred, 300 thousand treasury shares were transferred in the 2017 financial year, and 312 thousand in the 2018 financial year. In the 2019 financial year, 448 thousand treasury shares were transferred to the custody accounts of eligible participants. Transfers of treasury shares to the custody accounts of employees of Deutsche Telekom AG are free of charge. In cases where treasury shares are transferred to the custody accounts of employees of other Group companies, the costs have been transferred at fair value to the respective Group company since the 2016 financial year.

In all months of the reporting year with the exception of March and August, treasury shares (523 thousand in total) were reallocated and transferred to the custody accounts of eligible participants of the Share Matching Plan. As of December 31, 2020, disposals of treasury shares resulting from the transfers in the reporting period accounted for 0.01 %, or EUR 1,338 thousand, of share capital. Gains on disposal arising from transfers of treasury shares amounted to EUR 7,426 thousand. Transfers of treasury shares increased retained earnings by EUR 36 thousand and capital reserves by EUR 6,052 thousand. In the reporting year, 266 thousand treasury shares with a fair value of EUR 3,885 thousand were billed to other Group companies.

As part of the acquisition of VoiceStream Wireless Corp., Bellevue, and Powertel, Inc., Bellevue, in 2001, Deutsche Telekom AG issued new shares from authorized capital to a trustee, for the benefit of holders of warrants, options, and conversion rights, among others. These options or conversion rights expired in full in the 2013 financial year. As a result, the trustee no longer had any obligation to fulfill any claims in accordance with the purpose of the deposit. The trust relationship was terminated at the start of 2016 and the deposited shares were transferred free of charge to a custody account of Deutsche Telekom AG. The previously deposited shares are accounted for in the same way as treasury shares in accordance with § 272 (1a) HGB. On the basis of authorization by the shareholders' meeting on May 25, 2016, the treasury shares acquired free of charge may be used for the same purposes as the treasury shares acquired for a consideration. In the reporting year, 558 thousand previously deposited shares were reallocated for issue to eligible participants of the Share Matching Plan (prior year: 61 thousand shares).

Authorized capital and contingent capital. The shareholders' meeting on May 31, 2017 authorized the Board of Management to increase the share capital with the approval of the Supervisory Board by up to EUR 3,600,000,000 by issuing up to 1,406,250,000 no par value registered shares against cash and/or non-cash contributions in the period ending May 30, 2022. This authorization may be exercised in full or on one or more occasions in partial amounts. The Board of Management is authorized, subject to the approval of the Supervisory Board, to exclude residual amounts from shareholders' subscription rights. Furthermore, the Board of Management is authorized, subject to the approval of the Supervisory Board, to disapply shareholders' subscription rights in the event of capital increases against non-cash contributions when issuing new shares for business combinations or acquisitions of companies, parts thereof, or interests in companies, including increasing existing investment holdings, or other assets eligible for contribution for such acquisitions, including receivables from the Company. However, the value of the new shares for which shareholders' subscription rights have been disapplied on the basis of this authorization – together with the value of the shares or conversion and/or option rights or obligations under bonds issued or sold since May 31, 2017 subject to the disapplication of subscription rights – must not exceed 20 % of the total share capital; the latter is defined as the amount existing as of May 31, 2017, upon entry of the authorization, or upon the issue of the new shares, whichever amount is lowest. If the issue or sale is carried out in analogous or mutatis mutandis application of § 186 (3) sentence 4 AktG, this shall also constitute the disapplication of subscription rights. Further, the Board of Management is authorized, subject to the approval of the Supervisory Board, to determine the further content of share rights and the conditions under which shares are issued **(2017 authorized capital)**. The 2017 authorized capital was entered into the commercial register on July 11, 2017.

As of December 31, 2020, the share capital was contingently increased by up to EUR 1,200,000,000, comprising up to 468,750,000 no par value shares **(2018 contingent capital)**. The contingent capital increase will be implemented only to the extent that

a. the holders or creditors of bonds with warrants, convertible bonds, profit participation rights, and/or participating bonds (or combinations of these instruments) with options or conversion rights, which are issued or guaranteed by Deutsche Telekom AG or its direct or indirect majority holdings by May 16, 2023, on the basis of the authorization resolution granted by the shareholders' meeting on May 17, 2018, make use of their option and/or conversion rights or
b. those obligated as a result of bonds with warrants, convertible bonds, profit participation rights, and/or participating bonds (or combinations of these instruments), which are issued or guaranteed by Deutsche Telekom AG or its direct or indirect majority holdings by May 16, 2023, on the basis of the authorization resolution granted by the shareholders' meeting on May 17, 2018, fulfill their option or conversion obligations (including in the event that, in exercising a repayment option when the final due date of the bond is reached, Deutsche Telekom AG grants shares in Deutsche Telekom AG completely or partially in lieu of payment of the amount due)

and other forms of fulfillment are not used. The new shares shall participate in profits starting at the beginning of the financial year in which they are issued as the result of the exercise of any option or conversion rights or the fulfillment of any option or conversion obligations. The Supervisory Board is authorized to amend § 5 (3) of the Articles of Incorporation of Deutsche Telekom in accordance with the particular usage of the contingent capital and after the expiry of all the option or conversion periods.

Main agreements including a change of control clause

The main agreements entered into by Deutsche Telekom AG that include a clause in the event of a change of control principally relate to bilateral credit lines and several loan agreements. In the event of a change of control, the individual lenders have the right to terminate the credit line and, if necessary, serve notice or demand repayment of the loans. A change of control is assumed when a third party, which can also be a group acting jointly, acquires control over Deutsche Telekom AG.

On November 2, 2016, Deutsche Telekom AG signed a change agreement to the shareholder agreement with the Greek government from May 14, 2008 on Hellenic Telecommunications Organization S.A., Athens, Greece (OTE). Under this agreement, the Greek government is, under certain circumstances, entitled to acquire all shares in OTE from Deutsche Telekom AG as soon as one (or more) person(s), with the exception of the Federal Republic of Germany, either directly or indirectly acquire(s) 35 % of the voting rights of Deutsche Telekom AG.

In the master agreement establishing the procurement joint venture BuyIn in Belgium, Deutsche Telekom AG and Orange S.A. (formerly France Télécom S.A.)/Atlas Services Belgium S.A. (a subsidiary of Orange S.A.) agreed that if Deutsche Telekom or Orange comes under the controlling influence of a third party or if a third party that is not wholly owned by the Orange group of companies acquires shares in Atlas Services Belgium S.A., the respective other party (Orange and Atlas Services Belgium S.A. only jointly) may terminate the master agreement with immediate effect.

Changes in the consolidated group

61 German and 364 foreign subsidiaries are fully consolidated in Deutsche Telekom's consolidated financial statements (December 31, 2019: 61 and 206). 15 associates (December 31, 2019: 10) and 9 joint ventures (December 31, 2019: 7) are also included using the equity method.

The principal subsidiaries of Deutsche Telekom AG are listed in the section "Summary of accounting policies – Principal subsidiaries" in the notes to the consolidated financial statements.

Business combinations

T-Mobile US and Sprint combined their two businesses effective April 1, 2020 to form the "all-new," larger T-Mobile US. The business combination gave T-Mobile US a more comprehensive spectrum portfolio. On December 1, 2020, T-Mobile Netherlands acquired the Dutch MVNO and SIM provider Simpel. This acquisition secures mobile market shares, creates synergies, and makes us more competitive in the consumer market.

For further information, please refer to the section "Summary of accounting policies – Changes in the composition of the Group and other transactions" in the notes to the consolidated financial statements.

Compensation report

The “Compensation report” details the compensation system underlying Board of Management compensation as well as the specific remuneration received by the individual members of the Board of Management. It takes into consideration the requirements of the German Commercial Code taking account of the provisions of German Accounting Standard No. 17 (GAS 17), the recommendations of the German Corporate Governance Code (GCGC) as amended on February 7, 2017, and the International Financial Reporting Standards (IFRS).

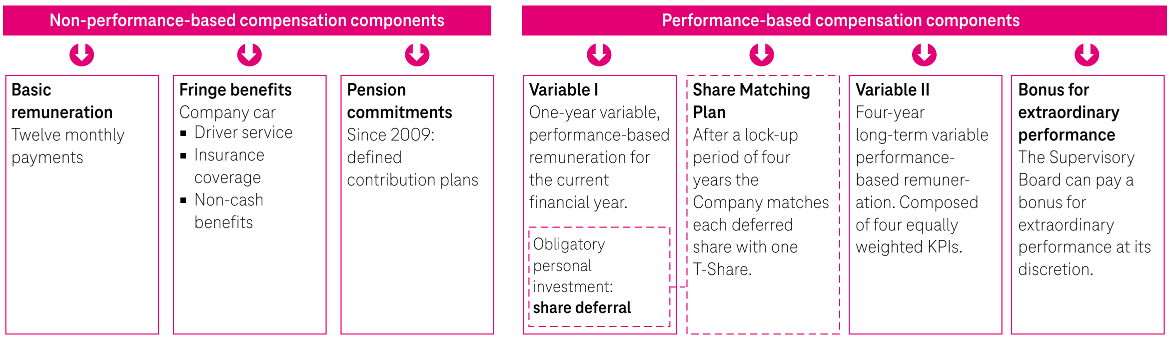
Changes in the composition of the Board of Management and contract extensions. Dr. Thomas Kremer’s term of office ended as scheduled on March 31, 2020. The Board of Management department for Data Privacy, Legal Affairs and Compliance headed by Dr. Kremer was dissolved effective January 1, 2020 and its constituent units were assigned to the Finance; Human Resources and Legal Affairs; and Technology and Innovation Board of Management departments. Until his departure, Dr. Kremer supported the transition to the new structures as part of a designated mandate. Dr. Dirk Wössner informed the Supervisory Board that he did not intend to extend his service contract beyond its scheduled expiration date at the end of 2020. Dr. Wössner resigned from his position on the Board of Management with effect from October 31, 2020. The Supervisory Board appointed Srini Gopalan to succeed Dr. Wössner as the Board of Management member for Germany. Srini Gopalan moved from the Europe Board of Management department to the Germany Board department effective November 1, 2020. Dominique Leroy, Srini Gopalan’s successor as the Board of Management member responsible for Europe, was appointed by the Supervisory Board also effective November 1, 2020. By resolution of the Supervisory Board of Deutsche Telekom AG of December 16, 2020, Claudia Nemat was reappointed as the Board of Management member for Technology and Innovation for the period from October 1, 2021 to September 30, 2026.

Compensation of the Board of Management

Basis of Board of Management compensation. The current Board of Management compensation system was adopted by the Supervisory Board on February 24, 2010. The shareholders’ meeting of Deutsche Telekom AG on May 3, 2010 approved this system. The compensation of Board of Management members comprises various components. Under the terms of their service contracts, members of the Board of Management are entitled to an annual fixed remuneration and annual variable performance-based remuneration (Variable I), a long-term variable remuneration component (Variable II), as well as fringe benefits and deferred benefits based on a company pension entitlement. The Supervisory Board defines the structure of the compensation system for the Board of Management and reviews this structure and the appropriateness of compensation at regular intervals. It is ensured that Board of Management compensation is oriented toward the sustained development of the Company and that there is a multi-year measurement base for the variable components. Sideline employment generally requires prior approval. Generally, no additional compensation is paid for being a member of the management or supervisory board of other Group entities.

On December 16, 2020, the Supervisory Board resolved on the key features of a new compensation system which takes into account the updates to the 2020 German Corporate Governance Code and the amendments to the German Stock Corporation Act (ARUG II, the Act Implementing the Second Shareholder Rights Directive). This compensation system will be submitted for vote at the shareholders’ meeting of Deutsche Telekom AG on April 1, 2021 and presented in detail in the invitation to the 2021 shareholders’ meeting. The rules of the current compensation system are described further on in this “Compensation report.” As each of the compensation components are presented below, the annotation “ | **Planned change in 2021:**” signifies elements that will differ under the new compensation system, which is still to be voted on, from the current system described here. Readers of this “Compensation report” should therefore be able to see at a glance which changes are planned.

Compensation of the Board of Management



Non-performance-based compensation components

Basic remuneration

The fixed annual remuneration is determined for all Board of Management members based on market conditions in accordance with the requirements of stock corporation law and is paid on a monthly basis. In the event of temporary incapacity for work caused by illness, accident, or any other reason for which the respective Board of Management member is not responsible, the fixed basic remuneration continues to be paid. The continued payment of remuneration ends at the latest after an uninterrupted period of absence of six months, or for a maximum of three months following the end of the month in which the Board of Management member's permanent incapacity for work is established.

Fringe benefits

In accordance with market-oriented and corporate standards, the Company grants all members of the Board of Management additional benefits under the terms of their service contracts, some of which are viewed as non-cash benefits and taxed accordingly. This mainly includes being furnished with a company car and accident and liability insurance, and reimbursements in connection with maintaining a second household.

Pension commitments

New pension commitment. Since 2009, all Board members have been granted a company pension in the form of a defined contribution plan. Under this arrangement, the Board member receives a one-time lump sum payout upon entering retirement. A contribution is paid into the Board member's pension account for each year of service at an interest rate corresponding to market levels. Annual additions to the pension account have no effect on cash or cash equivalents. The cash outflow is only effective upon the Board member's retirement. As a rule, the date of retirement is the beneficiary's 62nd birthday. The amount to be provided annually is individualized and decoupled from other compensation components. The exact definition of the contribution is based on a comparison with peer companies that are suitable for benchmarking and also offer defined contribution plans. The contributions for Birgit Bohle, Srini Gopalan, Dr. Christian P. Illek, Dr. Thomas Kremer, Thorsten Langheim, Claudia Nemat, and Dr. Dirk Wössner amount to EUR 250,000 each for each year of service rendered.

Legacy pension commitment. As the longest-serving Board member, CEO Timotheus Höttges is the only current Board member to still benefit from a legacy pension commitment under the company pension plan. Benefits from the company pension plan are in direct relation to the beneficiary's annual salary. The Board of Management members receive company pension benefits based on a fixed percentage of their last fixed annual salary for each year of service rendered prior to their date of retirement. The pension payments may be in the form of a life-long retirement pension upon reaching the age of 62 or in the form of an early retirement pension upon reaching the age of 60. Opting for the early retirement pension scheme is connected with actuarial deductions. The company pension is calculated by multiplying a basic percentage rate of 5 % by the number of years of service as a member of the Board of Management. After ten years of service, the maximum pension level of 50 % of the last fixed annual remuneration is attained. Following Timotheus Höttges' reappointment to the Board of Management and the adjustment to his basic remuneration, the Supervisory Board decided to dynamically increase his pension entitlements accrued up to December 31, 2018 by 2.4 % per year using the basic remuneration valid up to December 31, 2018 as the measurement base. Future increases in his compensation will thus not lead to higher pension payments.

The pension payments to be made upon retirement increase dynamically, at a rate of 1 % per year. In addition, the pension agreements include arrangements for pensions for surviving dependents in the form of entitlements for widows/widowers and orphans. In specifically provided exceptional cases, entitlement to a widow's/widower's pension is excluded. The standard criteria for eligibility in the pension arrangements are in line with market conditions. In the event of a permanent incapacity for work (invalidity), the beneficiary is also entitled to the pension credit accrued.

Pension substitute. A "pension substitute" was agreed with Adel Al-Saleh in lieu of a pension commitment due to his U.S. citizenship. The same applies to the new Board of Management member, Dominique Leroy. The arrangement provides for an annual payment of EUR 250,000 for each full year of service rendered and is reported in the tables under fringe benefits. In determining the amount, the Supervisory Board oriented itself to the level of the contributions for those Board members who have received a contribution-based benefit promise (new pension commitment).

> **Planned change in 2021:** Under the new compensation system, new members appointed to the Board of Management after its introduction will no longer receive pension commitments.

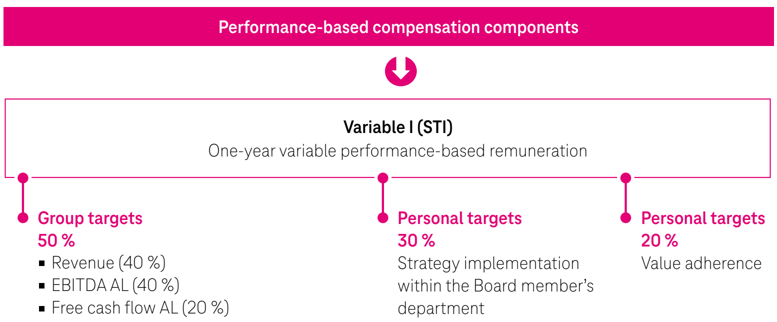
Service cost and defined benefit obligations for each member of the Board of Management with a pension commitment are shown in the following table:

€	Service cost 2020	Defined benefit obligation (DBO) Dec. 31, 2020	Service cost 2019	Defined benefit obligation (DBO) Dec. 31, 2019
Birgit Bohle	321,623	682,824	307,304	329,515
Srini Gopalan	303,269	1,318,968	295,590	964,557
Timotheus Höttges	473,974	20,429,377	417,067	18,595,908
Dr. Christian P. Illek	263,774	1,687,449	262,191	1,377,980
Dr. Thomas Kremer (until March 31, 2020)	62,500	2,139,166	247,664	2,076,666
Thorsten Langheim	279,423	582,911	275,986	287,194
Claudia Nemat	289,561	3,261,930	281,885	2,851,583
Dr. Dirk Wössner (until October 31, 2020)	297,545	900,303	289,418	619,879

Performance-based compensation components

The variable remuneration of the members of the Board of Management is mainly divided into Variables I and II. Variable I contains both short-term and long-term components consisting of the realization of budget figures for specific performance indicators, strategic/functional targets, and adherence to the Group's Guiding Principles. The payment amount of Variable I is tied to an obligation to invest in shares of Deutsche Telekom AG, which results in a further inflow of shares after four years under the current Share Matching Plan. Variable II is oriented solely toward the long term. This ensures that the variable remuneration is oriented toward the sustained development of the Company and that there is a predominantly long-term incentive effect. The variable compensation elements include clear upper limits, while the amount of compensation is capped overall. The final component of performance-based compensation comprises an option for the Supervisory Board to award a bonus for extraordinary performance. In the event of temporary incapacity for work caused by illness, accident, or any other reason for which the respective Board of Management member is not responsible, claims to variable remuneration are reduced pro rata in line with the uninterrupted period of absence; the uninterrupted period of absence must be more than one month in duration.

Variable I

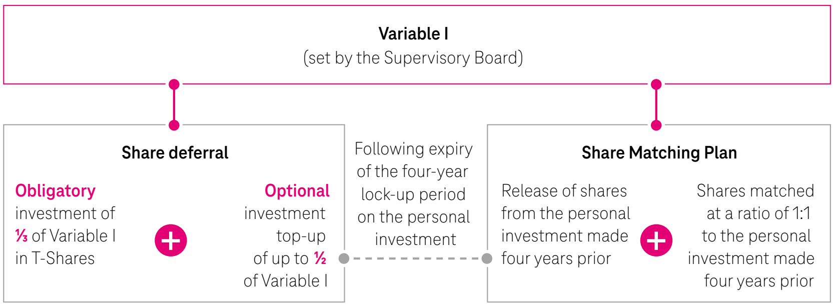


The annual variable remuneration of Board of Management members is based on the achievement of targets set by the Supervisory Board of Deutsche Telekom AG for each member of the Board of Management at the beginning of the financial year. The set of targets is composed of corporate targets (50 %) related to the unadjusted values – adapted for target-relevant factors – for revenue, EBITDA after leases, and free cash flow after leases, as well as personal targets for the individual members of the Board of Management. The three Group targets are weighted in relation to each other at 40/40/20. The personal targets consist of targets oriented toward the sustained success of the Company concerning the implementation of the strategy in the member's respective department (30 %) and value adherence (adherence to Guiding Principles), which is an indicator of compliance with value orientation and accounts for 20 %. The agreement on targets and the level of target achievement for the respective financial year are determined by the plenary session of the Supervisory Board. Levels of target achievement exceeding 100 % are capped at 150 % of the award amount. Any higher levels of target achievement will not be taken into consideration. To ensure the long-term incentive effect and orientation toward the sustained development of the Company, a third of the variable remuneration set by the plenary session of the Supervisory Board must be invested in shares of Deutsche Telekom AG; these shares must be held by the respective Board member for a period of at least four years.

Planned change in 2021: The new compensation system will also incorporate an existing ESG target into short-term variable remuneration. Additionally, the individual target parameters for strategy implementation and value adherence will be taken into account in the form of a performance factor that can be expressed as a value between 0.8 and 1.2. The performance factor is applied after the level of target achievement for Group and ESG targets has been determined. With the application of the performance factor, a target achievement level of between 0 % and 180 % is possible.

Share Matching Plan

Share deferral and the Share Matching Plan



In the 2020 financial year, the Board of Management members, as described above, were contractually obliged to invest a third of Variable I in shares of Deutsche Telekom AG. The Supervisory Board made an offer to the Board members to increase the obligatory personal investment in 2020 to up to 50 % of the Variable I payout. Deutsche Telekom AG will grant one additional share for every share acquired as part of the Board of Management member's aforementioned personal investment (Share Matching Plan) on expiration of the four-year lock-up period, provided they are still a member of the Board of Management.

Disclosures are required not only of the total expense related to share-based remuneration from matching shares in the 2020 financial year and the fair value of the matched shares at their grant date, but also of the number of entitlements to matching shares and their development in the current financial year.

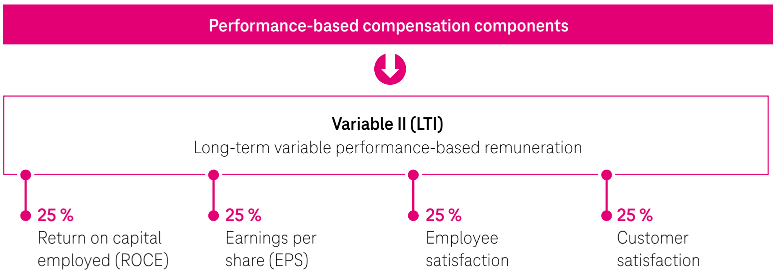
The fair value of the matching shares at grant date shown in the following table does not represent a component of remuneration for the Board of Management members in 2020. It is an imputed value of the entitlements to matching shares determined on the basis of relevant accounting policies. Here, the fair value equates to the share price at grant date less an expected dividend markdown. The following table is based on expected target achievement for the 2020 financial year and thus on the estimated amount of the personal investment to be made by the respective Board of Management member to establish his or her entitlements to matching shares. The final number of entitlements to matching shares identified for the 2020 financial year may be higher or lower than the amounts estimated here.

The total share-based remuneration expense for entitlements to matching shares from 2015 to 2020 to be recognized for the financial years 2019 and 2020 pursuant to IFRS 2 is included in the two last columns of the table.

	Number of entitlements granted to matching shares since 2010 at the beginning of the financial year	Number of new entitlements to matching shares granted in 2020	Number of shares transferred in 2020 as part of the Share Matching Plan	Fair value of the entitlements to matching shares at grant date €	Cumulative total share-based remuneration expense in 2020 for matching shares for the years 2016 through 2020 €	Cumulative total share-based remuneration expense in 2019 for matching shares for the years 2015 through 2019 €
Adel Al-Saleh	53,100	21,845	0	291,412	194,984	120,780
Birgit Bohle	19,151	17,800	0	237,452	105,520	36,983
Srini Gopalan	69,740	21,845	0	291,412	237,132	167,268
Timotheus Höttges	423,174	58,253	38,969	777,095	856,400	683,151
Dr. Christian P. Illek	102,681	21,845	11,121	291,412	276,113	258,459
Dr. Thomas Kremer (until March 31, 2020)	142,813	0	43,991	0	(84,603)	253,751
Thorsten Langheim	23,503	21,845	0	291,412	138,309	45,387
Dominique Leroy (since November 1, 2020)	0	4,037	0	46,062	1,777	0
Claudia Nemat	187,904	21,845	18,120	291,412	307,351	297,804
Dr. Dirk Wössner (until October 31, 2020)	44,800	0	10,559	0	(9,910)	100,570

By December 31, 2020, Deutsche Telekom AG had acquired 565,596 shares for the purpose of awarding matching shares to Board of Management members as part of the Share Matching Plan. In 2020, shares were once again transferred from the Share Matching Plan for Board of Management members to individual members of the Board of Management. In total, 122,760 shares (2019: 55,146) were transferred to Board of Management members in 2020; of this total, 54,550 shares were transferred to Board of Management members who were no longer serving on the Board at the transfer date.

Variable II



Variable II

The exclusively long-term-oriented Variable II is measured based on the fulfillment of four equally weighted performance parameters (return on capital employed (ROCE), earnings per share (EPS), customer satisfaction, and employee satisfaction). All four parameters are collected on a Group-wide basis. Each parameter determines a quarter of the award amount. Levels of target achievement exceeding 100 % are capped at 150 % of the award amount. The measurement period is four years, with the measurement being based on average target achievement across the four years planned at the time the tranche was determined. The award amount is decoupled from other remuneration components and is set for each member of the Board of Management individually.

> **Planned change in 2021:** Variable II will remain as described here. However, Variable II will be supplemented by a share-based component. The individual amount granted to each Board of Management member will be translated into phantom shares and thus additionally linked to the development of the share price. The payment is then made by translating the phantom shares into a cash amount. Total payments are capped at 200 % of the target amount.

Bonus for extraordinary performance

At its discretion and after due consideration, the Supervisory Board may also reward extraordinary performance by individual or all Board of Management members in the form of a special bonus.

Arrangements in the event of termination of a position on the Board of Management. Service contracts for members of the Board of Management concluded since the 2009 financial year include a severance cap in case of premature termination without good cause allowing a compensation payment that is limited to a maximum of two years' remuneration (severance cap) and may not exceed the remuneration due for the remaining term of the service contract.

> **Planned change in 2021:** In the future, compensation paid in connection with a post-contractual prohibition of competition will be deducted from the severance payment.

The service contracts for members of the Board of Management at Deutsche Telekom AG do not include any benefits in the event of the termination of a position on the Board of Management as a result of a change of control.

Board of Management member service contracts generally stipulate a post-contractual prohibition of competition. Pursuant to these provisions, members of the Board of Management are prohibited from rendering services to or on behalf of a competitor for the duration of one year following their departure. As compensation for this restricted period, they receive either a payment of 50 % of the last fixed annual remuneration and 50 % of the most recent Variable I on the basis of 100 % target achievement, or 100 % of the last fixed annual remuneration.

Service contracts for members of the Board of Management concluded since the 2020 financial year contain extensive clawback provisions entitling Deutsche Telekom to reclaim Variable I and Variable II payments if, within three years of determining the variable remuneration, either part or all of the payment is deemed to have been made wrongly.

Board of Management compensation for the 2020 financial year. In reliance on legal requirements and other guidelines, a total of EUR 24.1 million (2019: EUR 23.3 million) is reported in the following table as total compensation for the 2020 financial year for the members of the Board of Management. The Board of Management compensation comprises the fixed annual remuneration as well as other fringe benefits, non-cash benefits and remuneration in kind, short-term variable remuneration (Variable I), fully earned tranches of long-term variable remuneration (Variable II), a bonus for extraordinary performance, and the fair value of the matching shares. This was calculated on the basis of the estimated amount of Variable I at the grant date and the resulting number of entitlements to matching shares. Compensation also includes the bonus for extraordinary performance described in the "Compensation report" and the sign-on bonus for a new Board of Management member.

Total compensation. The compensation of the Board of Management is shown in detail in the following table:

€		Non-performance-based compensation		Performance-based compensation			Total compensation
		Fixed annual remuneration	Other remuneration	One-year variable remuneration (Variable I)	Long-term variable performance-based remuneration (Variable II and bonus for extraordinary performance)	Long-term variable performance-based remuneration (fair value of matching shares)	
Adel Al-Saleh	2020	900,000	273,078[a]	863,555	0	291,412	**2,328,045**
	2019	900,000	322,776	771,525	0	270,987	**2,265,288**
Birgit Bohle	2020	700,000	15,891	731,313	0	237,452	**1,684,656**
	2019	700,000	272,367	699,600	0	220,811	**1,892,778**
Srini Gopalan	2020	900,000	19,746	916,421	627,000	291,412	**2,754,579**
	2019	700,000	20,137	723,800	0	220,811	**1,664,748**
Timotheus Höttges	2020	1,500,000	65,066	2,494,800	2,129,880[b]	777,095	**6,966,841**
	2019	1,500,000	60,111	2,334,600	1,435,940	722,632	**6,053,283**
Dr. Christian P. Illek	2020	900,000	34,175	925,655	627,000	291,412	**2,778,242**
	2019	900,000	34,540	895,725	588,500	270,987	**2,689,752**
Dr. Thomas Kremer	2020	175,000	17,392	178,063	509,438	0	**879,893**
(until March 31, 2020)	2019	700,000	63,546	704,550	588,500	220,811	**2,277,407**
Thorsten Langheim	2020	900,000	14,273	915,975	0	291,412	**2,121,660**
	2019	900,000	17,657	839,700	0	270,987	**2,028,344**
Dominique Leroy	2020	150,000	151,766[c]	112,500	0	46,062	**460,328**
(since November 1, 2020)	2019	0	0	0	0	0	**0**
Claudia Nemat	2020	900,000	78,882	907,200	769,500	291,412	**2,946,994**
	2019	900,000	78,586	845,775	722,250	270,987	**2,817,598**
Dr. Dirk Wössner	2020	583,333	20,637	622,875	0	0	**1,226,845**
(until October 31, 2020)	2019	700,000	23,466	696,850	0	220,811	**1,641,127**
	2020	**7,608,333**	**625,840**	**8,668,357**	**4,662,818**	**2,517,669**	**24,148,083**
	2019	**7,900,000**	**893,186**	**8,512,125**	**3,335,190**	**2,689,824**	**23,330,325**

[a] Other fringe benefits for Adel Al-Saleh include a "pension substitute" in the amount of EUR 250,000 to be paid annually in lieu of a German pension commitment (please also refer to the previous section entitled "Pension commitments").

[b] This figure includes a one-time bonus for extraordinary performance in the amount of EUR 600,000 granted for the performance of activities in connection with the successful finalization of the business combination of T-Mobile US and Sprint.

[c] This amount includes a one-time sign-on bonus of EUR 150,000 to compensate for all financial disadvantages resulting from the move to Deutsche Telekom.

The amounts shown in the "Long-term variable performance-based remuneration (Variable II)" column had been pledged to the eligible Board of Management members in the 2017 financial year.

No member of the Board of Management received benefits or corresponding commitments from a third party for his or her activity as a Board of Management member during the past financial year.

Former members of the Board of Management. A total of EUR 8.5 million (2019: EUR 8.8 million) was included for payments to and entitlements for former members of the Board of Management as well as any surviving dependents.

Provisions (measured in accordance with IAS 19) totaling EUR 223.9 million (December 31, 2019: EUR 213.4 million) were recognized for current pensions and vested rights to pensions for this group of persons and their surviving dependents.

Other. The Company has not granted any advances or loans to current or former Board of Management members, nor were any other financial obligations to the benefit of this group of people entered into.

Table view in accordance with the requirements of the German Corporate Governance Code

The following tables are based on model tables 1 and 2 recommended by the German Corporate Governance Code (GCGC) as amended on February 7, 2017, which present the total compensation granted for the reporting year and the remuneration components allocated.

Benefits granted for the reporting year

Compensation of the Board of Management

€

	Timotheus Höttges				Adel Al-Saleh			
	Function: Chairman of the Board of Management (CEO) since Jan. 1, 2014				Function: T-Systems since Jan. 1, 2018			
	2019	2020	2020 (min.)	2020 (max.)	2019	2020	2020 (min.)	2020 (max.)
Fixed remuneration	1,500,000	1,500,000	1,500,000	1,500,000	900,000	900,000	900,000	900,000
Fringe benefits	60,111	65,066	65,066	65,066	322,776	273,078[a]	273,078[a]	273,078[a]
Total fixed annual remuneration	**1,560,111**	**1,565,066**	**1,565,066**	**1,565,066**	**1,222,776**	**1,173,078**	**1,173,078**	**1,173,078**
One-year variable remuneration	1,800,000	1,800,000	0	2,700,000	675,000	675,000	0	1,012,500
Multi-year variable remuneration	**2,722,632**	**3,377,095**	**600,000**	**6,300,000**	**945,987**	**966,412**	**0**	**2,025,000**
Of which: 2019 Variable II (4-year term)	2,000,000				675,000			
Of which: 2020 Variable II (4-year term)		2,000,000	0	3,000,000		675,000	0	1,012,500
Of which: 2019 Share Matching Plan (4-year term)	722,632				270,987			
Of which: 2020 Share Matching Plan (4-year term)		777,095	0	2,700,000		291,412	0	1,012,500
Of which: bonus for extraordinary performance	0	600,000[b]	600,000[b]	600,000[b]	0	0	0	0
Total	**6,082,743**	**6,742,161**	**2,165,066**	**10,565,066**	**2,843,763**	**2,814,490**	**1,173,078**	**4,210,578**
Service cost	417,067	473,974	473,974	473,974	0	0	0	0
Total compensation	**6,499,810**	**7,216,135**	**2,639,040**	**11,039,040**	**2,843,763**	**2,814,490**	**1,173,078**	**4,210,578**

[a] Other fringe benefits for Adel Al-Saleh include a "pension substitute" in the amount of EUR 250,000 to be paid annually in lieu of a German pension commitment (please also refer to the previous section entitled "Pension commitments."

[b] The bonus for extraordinary performance was granted for the performance of activities in connection with the successful finalization of the business combination of T-Mobile US and Sprint.

€

	Birgit Bohle				Srini Gopalan			
	Function: Human Resources and Legal Affairs since Jan. 1, 2019				Function: Germany since Jan. 1, 2017			
	2019	2020	2020 (min.)	2020 (max.)	2019	2020	2020 (min.)	2020 (max.)
Fixed remuneration	700,000	700,000	700,000	700,000	700,000	900,000	900,000	900,000
Fringe benefits	272,367	15,891	15,891	15,891	20,137	19,746	19,746	19,746
Total fixed annual remuneration	**972,367**	**715,891**	**715,891**	**715,891**	**720,137**	**919,746**	**919,746**	**919,746**
One-year variable remuneration	550,000	550,000	0	825,000	550,000	675,000	0	1,012,500
Multi-year variable remuneration	**770,811**	**787,452**	**0**	**1,650,000**	**770,811**	**966,412**	**0**	**2,025,000**
Of which: 2019 Variable II (4-year term)	550,000				550,000			
Of which: 2020 Variable II (4-year term)		550,000	0	825,000		675,000	0	1,012,500
Of which: 2019 Share Matching Plan (4-year term)	220,811				220,811			
Of which: 2020 Share Matching Plan (4-year term)		237,452	0	825,000		291,412	0	1,012,500
Of which: bonus for extraordinary performance	0	0	0	0	0	0	0	0
Total	**2,293,178**	**2,053,343**	**715,891**	**3,190,891**	**2,040,948**	**2,561,158**	**919,746**	**3,957,246**
Service cost	307,304	321,623	321,623	321,623	295,590	303,269	303,269	303,269
Total compensation	**2,600,482**	**2,374,966**	**1,037,514**	**3,512,514**	**2,336,538**	**2,864,427**	**1,223,015**	**4,260,515**

€

	Dr. Christian P. Illek				Dr. Thomas Kremer			
	Function: Finance (CFO) since Jan. 1, 2019				Function: Data Privacy, Legal Affairs and Compliance until Mar. 31, 2020			
	2019	2020	2020 (min.)	2020 (max.)	2019	2020	2020 (min.)	2020 (max.)
Fixed remuneration	900,000	900,000	900,000	900,000	700,000	175,000	175,000	175,000
Fringe benefits	34,540	34,175	34,175	34,175	63,546	17,392	17,392	17,392
Total fixed annual remuneration	**934,540**	**934,175**	**934,175**	**934,175**	**763,546**	**192,392**	**192,392**	**192,392**
One-year variable remuneration	675,000	675,000	0	1,012,500	550,000	137,500	0	206,250
Multi-year variable remuneration	**945,987**	**966,412**	**0**	**2,025,000**	**770,811**	**34,375**	**0**	**51,563**
Of which: 2019 Variable II (4-year term)	675,000				550,000			
Of which: 2020 Variable II (4-year term)		675,000	0	1,012,500		34,375	0	51,563
Of which: 2019 Share Matching Plan (4-year term)	270,987				220,811			
Of which: 2020 Share Matching Plan (4-year term)		291,412	0	1,012,500		0	0	0
Of which: bonus for extraordinary performance	0	0	0	0	0	0	0	0
Total	**2,555,527**	**2,575,587**	**934,175**	**3,971,675**	**2,084,357**	**364,267**	**192,392**	**450,205**
Service cost	262,191	263,774	263,774	263,774	247,664	62,500	62,500	62,500
Total compensation	**2,817,718**	**2,839,361**	**1,197,949**	**4,235,449**	**2,332,021**	**426,767**	**254,892**	**512,705**

€

	Thorsten Langheim				Dominique Leroy			
	Function: USA and Group Development since Jan. 1, 2019				Function: Europe since Nov. 1, 2020			
	2019	2020	2020 (min.)	2020 (max.)	2019	2020	2020 (min.)	2020 (max.)
Fixed remuneration	900,000	900,000	900,000	900,000	0	150,000	150,000	150,000
Fringe benefits	17,657	14,273	14,273	14,273	0	151,766[a]	151,766[a]	151,766[a]
Total fixed annual remuneration	**917,657**	**914,273**	**914,273**	**914,273**	**0**	**301,766**	**301,766**	**301,766**
One-year variable remuneration	675,000	675,000	0	1,012,500	0	112,500	0	168,750
Multi-year variable remuneration	**945,987**	**966,412**	**0**	**2,025,000**	**0**	**158,562**	**0**	**337,500**
Of which: 2019 Variable II (4-year term)	675,000							
Of which: 2020 Variable II (4-year term)		675,000	0	1,012,500	0	112,500	0	168,750
Of which: 2019 Share Matching Plan (4-year term)	270,987							
Of which: 2020 Share Matching Plan (4-year term)		291,412	0	1,012,500	0	46,062	0	168,750
Of which: bonus for extraordinary performance	0	0	0	0	0	0	0	0
Total	**2,538,644**	**2,555,685**	**914,273**	**3,951,773**	**0**	**572,828**	**301,766**	**808,016**
Service cost	275,986	279,423	279,423	279,423	0	0	0	0
Total compensation	**2,814,630**	**2,835,108**	**1,193,696**	**4,231,196**	**0**	**572,828**	**301,766**	**808,016**

[a] This amount includes a one-time sign-on bonus of EUR 150,000 to compensate for all financial disadvantages resulting from the move to Deutsche Telekom.

€	Claudia Nemat				Dr. Dirk Wössner			
	Function: Technology and Innovation since Oct. 1, 2011				Function: Germany until Oct. 31, 2020			
	2019	2020	2020 (min.)	2020 (max.)	2019	2020	2020 (min.)	2020 (max.)
Fixed remuneration	900,000	900,000	900,000	900,000	700,000	583,333	583,333	583,333
Fringe benefits	78,586	78,882	78,882	78,882	23,466	20,637	20,637	20,637
Total fixed annual remuneration	**978,586**	**978,882**	**978,882**	**978,882**	**723,466**	**603,970**	**603,970**	**603,970**
One-year variable remuneration	675,000	675,000	0	1,012,500	550,000	458,333	0	687,500
Multi-year variable remuneration	**945,987**	**966,412**	**0**	**2,025,000**	**770,811**	**0**	**0**	**0**
Of which: 2019 Variable II (4-year term)	675,000				550,000			
Of which: 2020 Variable II (4-year term)		675,000	0	1,012,500		0	0	0
Of which: 2019 Share Matching Plan (4-year term)	270,987				220,811			
Of which: 2020 Share Matching Plan (4-year term)		291,412	0	1,012,500		0	0	0
Of which: bonus for extraordinary performance	0	0	0	0	0	0	0	0
Total	**2,599,573**	**2,620,294**	**978,882**	**4,016,382**	**2,044,277**	**1,062,303**	**603,970**	**1,291,470**
Service cost	281,885	289,561	289,561	289,561	289,418	297,545	297,545	297,545
Total compensation	**2,881,458**	**2,909,855**	**1,268,443**	**4,305,943**	**2,333,695**	**1,359,848**	**901,515**	**1,589,015**

Benefits allocated for the reporting year

The following table does not contain the target values, but the actual benefits allocated for 2020 for one- and multi-year variable remuneration components. There is another difference between the following table and the table of benefits granted with regard to the presentation of the Share Matching Plan: The figures for the Share Matching Plan disclosed in the following table show the value of the benefits allocated applicable under German tax law at the time of transfer of the matching shares, whereas the above table of benefits granted shows the fair values of remuneration at the grant date.

Compensation of the Board of Management

€	Timotheus Höttges		Adel Al-Saleh	
	Function: Chairman of the Board of Management (CEO) since Jan. 1, 2014		Function: T-Systems since Jan. 1, 2018	
	2019	2020	2019	2020
Fixed remuneration	1,500,000	1,500,000	900,000	900,000
Fringe benefits	60,111	65,066	272,776	323,078[a]
Total fixed annual remuneration	**1,560,111**	**1,565,066**	**1,172,776**	**1,223,078**
One-year variable remuneration	2,334,600	2,494,800	771,525	863,555
Multi-year variable remuneration	**1,822,707**	**2,721,235**	**0**	**0**
Of which: Variable II (4-year term) [b]	1,435,940	1,529,880	0	0
Of which: Share Matching Plan (4-year term) [c]	386,767	591,355	0	0
Of which: bonus for extraordinary performance	0	600,000[d]	0	0
Other	0	0	0	0
Total	**5,717,418**	**6,781,101**	**1,944,301**	**2,086,633**
Service cost	417,067	473,974	0	0
Total compensation	**6,134,485**	**7,255,075**	**1,944,301**	**2,086,633**

[a] Other fringe benefits for Adel Al-Saleh include a “pension substitute” in the amount of EUR 250,000 to be paid annually in lieu of a German pension commitment (please also refer to the previous section entitled “Pension commitments”) and a retroactive increase of EUR 50,000 to the flat-rate reimbursement made in the prior year in connection with maintaining a second household.

[b] Variable II as shown in the column for 2020 relates to the payment of the 2017 tranche; the figure in the column for 2019 relates to the payment of the 2016 tranche (please also refer to the previous section “Variable II”).

[c] The Share Matching Plan relates to the non-cash benefit arising from the inflow of the matching shares, with the corresponding personal investment having been made in 2015 or 2016.

[d] The bonus for extraordinary performance was granted for the performance of activities in connection with the successful finalization of the business combination of T-Mobile US and Sprint.

€	Birgit Bohle Function: Human Resources and Legal Affairs since Jan. 1, 2019		Srini Gopalan Function: Europe since Jan. 1, 2017	
	2019	2020	2019	2020
Fixed remuneration	700,000	700,000	700,000	900,000
Fringe benefits	272,367	15,891	20,137	19,746
Total fixed annual remuneration	**972,367**	**715,891**	**720,137**	**919,746**
One-year variable remuneration	699,600	731,313	723,800	916,421
Multi-year variable remuneration	**0**	**0**	**0**	**627,000**
Of which: Variable II (4-year term) [a]	0	0	0	627,000
Of which: Share Matching Plan (4-year term) [b]	0	0	0	0
Of which: bonus for extraordinary performance	0	0	0	0
Other	0	0	0	0
Total	**1,671,967**	**1,447,204**	**1,443,937**	**2,463,167**
Service cost	307,304	321,623	295,590	303,269
Total compensation	**1,979,271**	**1,768,827**	**1,739,527**	**2,766,436**

[a] Variable II as shown in the column for 2020 relates to the payment of the 2017 tranche; the figure in the column for 2019 relates to the payment of the 2016 tranche (please also refer to the previous section “Variable II”).
[b] The Share Matching Plan relates to the non-cash benefit arising from the inflow of the matching shares, with the corresponding personal investment having been made in 2015 or 2016.

€	Dr. Christian P. Illek Function: Finance (CFO) since Jan. 1, 2019		Dr. Thomas Kremer Function: Data Privacy, Legal Affairs and Compliance until Mar. 31, 2020	
	2019	2020	2019	2020
Fixed remuneration	900,000	900,000	700,000	175,000
Fringe benefits	34,540	34,175	63,546	17,392
Total fixed annual remuneration	**934,540**	**934,175**	**763,546**	**192,392**
One-year variable remuneration	895,725	925,655	704,550	178,063
Multi-year variable remuneration	**588,500**	**769,516**	**784,761**	**1,059,989**
Of which: Variable II (4-year term) [a]	588,500	627,000	588,500	509,438
Of which: Share Matching Plan (4-year term) [b]	0	142,516	196,261	550,551
Of which: bonus for extraordinary performance	0	0	0	0
Other	0	0	0	0
Total	**2,418,765**	**2,629,346**	**2,252,857**	**1,430,444**
Service cost	262,191	263,774	247,664	62,500
Total compensation	**2,680,956**	**2,893,120**	**2,500,521**	**1,492,944**

[a] Variable II as shown in the column for 2020 relates to the payment of the 2017 tranche; the figure in the column for 2019 relates to the payment of the 2016 tranche (please also refer to the previous section “Variable II”).
[b] The Share Matching Plan relates to the non-cash benefit arising from the inflow of the matching shares, with the corresponding personal investment having been made in 2015 or 2016.

€	Thorsten Langheim Function: USA and Group Development since Jan. 1, 2019		Dominique Leroy Function: Europe since Nov. 1, 2020	
	2019	2020	2019	2020
Fixed remuneration	900,000	900,000	0	150,000
Fringe benefits	17,657	14,273	0	151,766[a]
Total fixed annual remuneration	**917,657**	**914,273**	**0**	**301,766**
One-year variable remuneration	839,700	915,975	0	112,500
Multi-year variable remuneration	**0**	**0**	**0**	**0**
Of which: Variable II (4-year term) [b]	0	0	0	0
Of which: Share Matching Plan (4-year term) [c]	0	0	0	0
Of which: bonus for extraordinary performance	0	0	0	0
Other	0	0	0	0
Total	**1,757,357**	**1,830,248**	**0**	**414,266**
Service cost	275,986	279,423	0	0
Total compensation	**2,033,343**	**2,109,671**	**0**	**414,266**

[a] This amount includes a one-time sign-on bonus of EUR 150,000 to compensate for all financial disadvantages resulting from the move to Deutsche Telekom.
[b] Variable II as shown in the column for 2020 relates to the payment of the 2017 tranche; the figure in the column for 2019 relates to the payment of the 2016 tranche (please also refer to the previous section “Variable II”).
[c] The Share Matching Plan relates to the non-cash benefit arising from the inflow of the matching shares, with the corresponding personal investment having been made in 2015 or 2016.

€	Claudia Nemat		Dr. Dirk Wössner	
	Function: Technology and Innovation since Oct. 1, 2011		Function: Germany until Oct. 31, 2020	
	2019	2020	2019	2020
Fixed remuneration	900,000	900,000	700,000	583,333
Fringe benefits	78,586	78,882	23,466	20,637
Total fixed annual remuneration	**978,586**	**978,882**	**723,466**	**603,970**
One-year variable remuneration	845,775	907,200	696,850	622,875
Multi-year variable remuneration	**973,641**	**1,044,480**	**0**	**138,270**
Of which: Variable II (4-year term) [a]	722,250	769,500	0	0
Of which: Share Matching Plan (4-year term) [b]	251,391	274,980	0	138,270
Of which: bonus for extraordinary performance	0	0	0	0
Other	0	0	0	0
Total	**2,798,002**	**2,930,562**	**1,420,316**	**1,365,115**
Service cost	281,885	289,561	289,418	297,545
Total compensation	**3,079,887**	**3,220,123**	**1,709,734**	**1,662,660**

[a] Variable II as shown in the column for 2020 relates to the payment of the 2017 tranche; the figure in the column for 2019 relates to the payment of the 2016 tranche (please also refer to the previous section “Variable II”).

[b] The Share Matching Plan relates to the non-cash benefit arising from the inflow of the matching shares, with the corresponding personal investment having been made in 2015 or 2016.

New compensation system from 2021

A detailed presentation of the new compensation system, the key features of which were adopted by the Supervisory Board of Deutsche Telekom AG on December 16, 2020 and which will be submitted for vote at the shareholders’ meeting on April 1, 2021, is included with the invitation to the 2021 shareholders’ meeting. The planned changes to the compensation system highlighted in this “Compensation report” do not constitute comprehensive information and merely serve to illustrate the areas in which the Supervisory Board has modified the current compensation system.

Compensation of the Supervisory Board

The compensation received by the members of the Supervisory Board is specified under § 13 of the Articles of Incorporation of Deutsche Telekom AG. Under the compensation system applicable for the 2020 financial year, members of the Supervisory Board receive fixed annual compensation of EUR 70,000.00.

The Chairman of the Supervisory Board receives a further EUR 70,000.00 and the Deputy Chairman EUR 35,000.00. Members of the Supervisory Board also receive compensation as follows for activities on Supervisory Board committees:

a. The Chairperson of the Audit Committee receives EUR 80,000.00, ordinary members of the Audit Committee EUR 40,000.00.
b. The Chairperson of the General Committee receives EUR 70,000.00, ordinary members of the General Committee EUR 30,000.00.
c. The Chairperson of the Nomination Committee receives EUR 25,000.00, ordinary members of the Nomination Committee EUR 12,500.00.
d. The Chairperson of any other committee receives EUR 40,000.00, ordinary members of any other committee EUR 25,000.00.

Chairpersonship and membership of the Mediation Committee are not remunerated.

Members of the Supervisory Board receive an attendance fee amounting to EUR 1,000.00 for each meeting of the Supervisory Board or its committees that they have attended. The Company reimburses value-added tax payable on remuneration and expenses.

The total compensation of the members of the Supervisory Board in 2020 amounted to EUR 3,043,250.00 (plus VAT).

The Company has not granted any advances or loans to current or former Supervisory Board members, nor were any other financial obligations to the benefit of this group of people entered into.

The compensation of the individual members of the Supervisory Board for 2020 is as follows:

€ Member of the Supervisory Board	Fixed remuneration	Meeting attendance fee	Total
Bednarski, Josef[a] (until April 30, 2020)	55,000.00	5,000.00	60,000.00
Dr. Bösinger, Rolf	152,500.00	35,000.00	187,500.00
Dr. Bräunig, Günther	120,000.00	17,000.00	137,000.00
Chatzidis, Odysseus D.	99,166.67	17,000.00	116,166.67
Greve, Constantin	115,833.33	17,000.00	132,833.33
Hinrichs, Lars	95,000.00	16,000.00	111,000.00
Dr. Jung, Helga	95,000.00	14,000.00	109,000.00
Prof. Dr. Kaschke, Michael	110,000.00	17,000.00	127,000.00
Koch, Nicole[b]	95,000.00	16,000.00	111,000.00
Kollmann, Dagmar P.	187,500.00	25,000.00	212,500.00
Kreusel, Petra Steffi[c]	110,000.00	18,000.00	128,000.00
Krüger, Harald	74,166.67	14,000.00	88,166.67
Prof. Dr. Lehner, Ulrich[d] (Chairman)	300,000.00	36,000.00	336,000.00
Kerstin Marx[e] (since May 1, 2020)	110,000.00	31,000.00	141,000.00
Sauerland, Frank[f] (Deputy Chairman since March 27, 2020)	163,750.00	28,000.00	191,750.00
Schröder, Lothar[g] (Deputy Chairman until March 26, 2020)	142,500.00	19,000.00	161,500.00
Seelemann-Wandtke, Nicole	115,833.33	19,000.00	134,833.33
Spoo, Sibylle	135,000.00	17,000.00	152,000.00
Streibich, Karl-Heinz	135,000.00	19,000.00	154,000.00
Suckale, Margret	120,000.00	21,000.00	141,000.00
Topel, Karin	95,000.00	16,000.00	111,000.00
	2,626,250.00	**417,000.00**	**3,043,250.00**

[a] In addition to remuneration for his activities as a member of the Supervisory Board of Deutsche Telekom AG, Josef Bednarski also received other remuneration amounting to EUR 3,000.00 in the 2020 financial year (member of the Data Privacy Advisory Board).

[b] In addition to remuneration for her activities as a member of the Supervisory Board of Deutsche Telekom AG, Nicole Koch also received other remuneration amounting to EUR 4,500.00 (including meeting attendance fees) in the 2020 financial year (for her mandate as member of the supervisory board of Deutsche Telekom Privatkunden-Vertrieb GmbH).

[c] In addition to remuneration for her activities as a member of the Supervisory Board of Deutsche Telekom AG, Petra Steffi Kreusel also received other remuneration amounting to EUR 8,833.33 (including meeting attendance fees) in the 2020 financial year (EUR 7,500.00 for her mandate as member of the supervisory board of T-Systems International GmbH until June 30, 2020 and EUR 1,333.33 for her mandate as member of the supervisory board of Deutsche Telekom Business Solutions GmbH since July 1, 2020).

[d] In addition to remuneration for his activities as a member of the Supervisory Board of Deutsche Telekom AG, Prof. Ulrich Lehner also received other remuneration amounting to EUR 9,000.00 in the 2020 financial year (member of the Data Privacy Advisory Board).

[e] In addition to remuneration for her activities as a member of the Supervisory Board of Deutsche Telekom AG, Kerstin Marx also received other remuneration amounting to EUR 7,083.33 (including meeting attendance fees) in the 2020 financial year (EUR 6,000.00 for her mandate as member of the supervisory board of T-Systems International GmbH until June 30, 2020 and EUR 1,083.33 for her mandate as member of the supervisory board of Deutsche Telekom Business Solutions GmbH since July 1, 2020).

[f] In addition to remuneration for his activities as a member of the Supervisory Board of Deutsche Telekom AG, Frank Sauerland also received other remuneration amounting to EUR 19.000,00 (including meeting attendance fees) in the 2020 financial year (for his mandate as member of the supervisory board of Telekom Deutschland GmbH).

[g] In addition to remuneration for his activities as a member of the Supervisory Board of Deutsche Telekom AG, Lothar Schröder also received other remuneration amounting to EUR 32,230.00 (including meeting attendance fees) in the 2020 financial year (EUR 20,230.00 for his mandate as member of the supervisory board of Deutsche Telekom Services Europe SE and EUR 12,000.00 as Chairman of the Data Privacy Advisory Board).

Share ownership by members of the Board of Management and the Supervisory Board

Members of the Board of Management and Supervisory Board of Deutsche Telekom AG were reported to have purchased and transferred 353,569 shares (2019: 278,574) and sold 90,215 shares (2019: 68.930) under the Share Matching Plan in the course of 2020. Total direct or indirect holdings in the Company or associated financial instruments by members of the Board of Management and the Supervisory Board do not exceed 1 % of the shares issued by the Company.

Consolidated financial statements

Consolidated statement of financial position

millions of €

	Note	Dec. 31, 2020	Dec. 31, 2019
Assets			
Current assets		**37,293**	**24,689**
Cash and cash equivalents	1	12,939	5,393
Trade receivables	2	13,523	10,846
Contract assets	3	1,966	1,876
Current recoverable income taxes	31	349	481
Other financial assets	11	3,224	3,254
Inventories	4	2,695	1,568
Other assets	12	1,484	1,175
Non-current assets and disposal groups held for sale	5	1,113	97
Non-current assets		**227,624**	**145,983**
Intangible assets	6	118,066	68,202
Property, plant and equipment	7	60,975	49,548
Right-of-use assets	8	30,302	17,998
Capitalized contract costs	9	2,192	2,075
Investments accounted for using the equity method	10	543	489
Other financial assets	11	6,416	3,996
Deferred tax assets	31	7,972	2,704
Other assets	12	1,159	970
Total assets		**264,917**	**170,672**

millions of €

	Note	Dec. 31, 2020	Dec. 31, 2019
Liabilities and shareholders' equity			
Current liabilities		**37,135**	**32,913**
Financial liabilities	13	12,652	11,463
Lease liabilities	13	5,108	3,987
Trade and other payables	14	9,760	9,431
Income tax liabilities	31	690	463
Other provisions	16	3,638	3,082
Other liabilities	17	3,213	2,850
Contract liabilities	18	1,625	1,608
Liabilities directly associated with non-current assets and disposal groups held for sale	5	449	29
Non-current liabilities		**155,232**	**91,528**
Financial liabilities	13	94,456	54,886
Lease liabilities	13	27,607	15,848
Provisions for pensions and other employee benefits	15	7,684	5,831
Other provisions	16	5,395	3,581
Deferred tax liabilities	31	17,260	8,954
Other liabilities	17	2,418	1,972
Contract liabilities	18	411	456
Liabilities		**192,367**	**124,441**
Shareholders' equity	19	**72,550**	**46,231**
Issued capital		12,189	12,189
Treasury shares		(46)	(47)
		12,143	**12,142**
Capital reserves		62,640	55,029
Retained earnings including carryforwards		(38,905)	(38,709)
Total other comprehensive income		(4,115)	(622)
Net profit (loss)		4,158	3,867
Issued capital and reserves attributable to owners of the parent		**35,922**	**31,707**
Non-controlling interests		36,628	14,524
Total liabilities and shareholders' equity		**264,917**	**170,672**

Sprint has been included in Deutsche Telekom's consolidated financial statements as a fully consolidated subsidiary since April 1, 2020. This transaction affects the comparability of the figures for the current period with the prior-year figures. For further information on the transaction, please refer to the section "Changes in the composition of the Group and other transactions."

Consolidated income statement

millions of €

	Note	2020	2019	2018
Net revenue	20	**100,999**	**80,531**	**75,656**
Of which: interest income calculated using the effective interest method		278	345	305
Other operating income	21	2,879	1,121	1,491
Changes in inventories		(15)	29	(14)
Own capitalized costs	23	2,774	2,418	2,433
Goods and services purchased	24	(44,674)	(36,956)	(38,160)
Personnel costs	25	(18,853)	(16,723)	(16,436)
Other operating expenses	26	(4,476)	(3,301)	(3,134)
Impairment losses on financial assets		(862)	(452)	(394)
Gains (losses) from the write-off of financial assets measured at amortized cost		(188)	(42)	(120)
Other		(3,425)	(2,807)	(2,620)
EBITDA		**38,633**	**27,120**	**21,836**
Depreciation, amortization and impairment losses	27	(25,829)	(17,663)	(13,836)
Profit (loss) from operations **(EBIT)**		**12,804**	**9,457**	**8,001**
Finance costs	28	(4,224)	(2,364)	(1,817)
Interest income		414	348	277
Interest expense		(4,638)	(2,712)	(2,094)
Share of profit (loss) of associates and joint ventures accounted for using the equity method	29	(12)	87	(529)
Other financial income (expense)	30	109	81	(502)
Profit (loss) from financial activities		**(4,128)**	**(2,197)**	**(2,848)**
Profit (loss) before income taxes		**8,677**	**7,260**	**5,153**
Income taxes	31	(1,929)	(1,993)	(1,824)
Profit (loss)		**6,747**	**5,268**	**3,329**
Profit (loss) attributable to				
Owners of the parent (net profit (loss))		4,158	3,867	2,166
Non-controlling interests	32	2,589	1,401	1,163
Earnings per share	33			
Profit (loss) attributable to the owners of the parent (net profit (loss))	millions of €	4,158	3,867	2,166
Adjusted weighted average number of basic/diluted ordinary shares outstanding	millions	4,743	4,743	4,742
Earnings per share basic/diluted	€	**0.88**	**0.82**	**0.46**

Sprint has been included in Deutsche Telekom's consolidated financial statements as a fully consolidated subsidiary since April 1, 2020. This transaction affects the comparability of the figures for the current period with the prior-year figures. For further information on the transaction, please refer to the section "Changes in the composition of the Group and other transactions."

Consolidated statement of comprehensive income

millions of €

	2020	2019	2018
Profit (loss)	**6,747**	**5,268**	**3,329**
Items not subsequently reclassified to profit or loss (not recycled)			
Gains (losses) from the remeasurement of equity instruments[a]	62	99	(619)
Gains (losses) from the remeasurement of defined benefit plans	(1,358)	(603)	127
Share of profit (loss) of investments accounted for using the equity method	0	0	0
Income taxes relating to components of other comprehensive income	142	134	36
	(1,154)	**(369)**	**(456)**
Items subsequently reclassified to profit or loss (recycled), if certain reasons are given			
Exchange differences on translating foreign operations			
Recognition of other comprehensive income in income statement	0	(8)	(1)
Change in other comprehensive income (not recognized in income statement)	(6,578)	463	1,033
Gains (losses) from the remeasurement of debt instruments			
Recognition of other comprehensive income in income statement	491	(47)	(75)
Change in other comprehensive income (not recognized in income statement)	(481)	34	84
Gains (losses) from hedging instruments (designated risk components)			
Recognition of other comprehensive income in income statement	431	(148)	(32)
Change in other comprehensive income (not recognized in income statement)	(1,446)	(483)	(382)
Gains (losses) from hedging instruments (hedging costs)[a]			
Recognition of other comprehensive income in income statement	2	2	3
Change in other comprehensive income (not recognized in income statement)	(30)	(9)	56
Share of profit (loss) of investments accounted for using the equity method			
Recognition of other comprehensive income in income statement	0	(7)	0
Change in other comprehensive income (not recognized in income statement)	1	11	7
Income taxes relating to components of other comprehensive income	283	155	86
	(7,327)	**(38)**	**779**
Other comprehensive income	**(8,481)**	**(407)**	**323**
Total comprehensive income	**(1,734)**	**4,861**	**3,652**
Total comprehensive income attributable to			
Owners of the parent	(496)	3,514	2,181
Non-controlling interests	(1,238)	1,347	1,471

[a] The hedging costs relate entirely to cross-currency basis spreads. For further information, please refer to Note 41 "Financial instruments and risk management."

Consolidated statement of changes in equity

millions of €

	Issued capital and reserves attributable to owners of the parent							
	Equity contributed				Consolidated shareholders' equity generated			
	Number of shares thousands	Issued capital	Treasury shares	Capital reserves	Retained earnings including carry-forwards	Net profit (loss)	Translation of foreign operations	Reval-uation surplus
Balance at January 1, 2018	**4,761,459**	**12,189**	**(49)**	**55,010**	**(38,750)**	**3,461**	**(1,729)**	**(60)**
Transfer resulting from change in accounting standards					1,414			
Changes in the composition of the Group								
Transactions with owners				(614)	1		(13)	0
Unappropriated profit (loss) carried forward					3,461	(3,461)		
Dividends					(3,083)			
Capital increase at Deutsche Telekom AG								
Capital increase from share-based payment				250				
Share buy-back/shares held in a trust deposit			1	0	3			
Profit (loss)						2,166		
Other comprehensive income					163		621	
Total comprehensive income								
Transfer to retained earnings					(602)			32
Balance at December 31, 2018	**4,761,459**	**12,189**	**(49)**	**54,646**	**(37,392)**	**2,166**	**(1,120)**	**(28)**
Balance at January 1, 2019	**4,761,459**	**12,189**	**(49)**	**54,646**	**(37,392)**	**2,166**	**(1,120)**	**(28)**
Transfer resulting from change in accounting standards					221			
Changes in the composition of the Group								
Transactions with owners				77			(7)	
Unappropriated profit (loss) carried forward					2,166	(2,166)		
Dividends					(3,320)			
Capital increase at Deutsche Telekom AG								
Capital increase from share-based payment				306				
Share buy-back/shares held in a trust deposit			1		4			
Profit (loss)						3,867		
Other comprehensive income					(463)		319	
Total comprehensive income								
Transfer to retained earnings					74			7
Balance at December 31, 2019	**4,761,459**	**12,189**	**(47)**	**55,029**	**(38,709)**	**3,867**	**(808)**	**(21)**
Balance at January 1, 2020	**4,761,459**	**12,189**	**(47)**	**55,029**	**(38,709)**	**3,867**	**(808)**	**(21)**
Transfer resulting from change in accounting standards								
Changes in the composition of the Group								
Transactions with owners				7,356			(339)	
Unappropriated profit (loss) carried forward					3,867	(3,867)		
Dividends					(2,846)			
Capital increase at Deutsche Telekom AG								
Capital increase from share-based payment				256				
Share buy-back/shares held in a trust deposit			1					
Profit (loss)						4,158		
Other comprehensive income					(1,218)		(2,945)	
Total comprehensive income								
Transfer to retained earnings					1			7
Balance at December 31, 2020	**4,761,459**	**12,189**	**(46)**	**62,640**	**(38,905)**	**4,158**	**(4,092)**	**(14)**

Issued capital and reserves attributable to owners of the parent									Non-controlling interests	Total shareholders' equity
Total other comprehensive income								Total		
Available-for-sale financial assets (IAS 39)	Equity instruments at fair value through other comprehensive income (IFRS 9)	Debt instruments measured at fair value through other comprehensive income (IFRS 9)	Hedging instruments (IAS 39)	Hedging instruments: designated risk components (IFRS 9)	Hedging instruments: hedging costs (IFRS 9)	Investments accounted for using the equity method	Taxes			
101	**n.a.**	**n.a.**	**789**	**n.a.**	**n.a.**	**26**	**(254)**	**30,734**	**11,737**	**42,470**
(99)	93	0	(789)	789			38	1,446	103	1,549
								0	11	11
	0	2		1			(1)	(625)	(764)	(1,389)
								0	0	0
								(3,083)	(172)	(3,255)
								0	0	0
								250	144	394
								4	0	4
								2,166	1,163	3,329
	(620)	6		(271)	58	7	50	15	308	323
								2,181	**1,471**	**3,652**
	611	(6)				(36)	1	0	0	0
n.a.	**84**	**2**	**n.a.**	**519**	**58**	**(4)**	**(165)**	**30,907**	**12,530**	**43,437**
n.a.	**84**	**2**	**n.a.**	**519**	**58**	**(4)**	**(165)**	**30,907**	**12,530**	**43,437**
								221	125	346
								0	239	239
				4			(1)	73	340	413
								0	0	0
								(3,320)	(236)	(3,555)
								0	0	0
								306	178	484
								5	0	5
								3,867	1,401	5,268
	99	(9)		(393)	(7)	4	97	(353)	(54)	(407)
								3,514	**1,347**	**4,861**
	(82)							0	0	0
n.a.	**101**	**(6)**	**n.a.**	**130**	**51**	**0**	**(69)**	**31,707**	**14,524**	**46,231**
n.a.	**101**	**(6)**	**n.a.**	**130**	**51**	**0**	**(69)**	**31,707**	**14,524**	**46,231**
								0	0	0
								0	17,329	17,329
	0	12		380			(109)	7,299	5,967	13,266
								0	0	0
								(2,846)	(215)	(3,061)
								0	0	0
								256	262	517
								1	0	1
								4,158	2,589	6,747
	62	(6)		(733)	(27)	1	213	(4,654)	(3,827)	(8,481)
								(496)	**(1,238)**	**(1,734)**
	(7)			0		(1)		0	0	0
n.a.	**156**	**0**	**n.a.**	**(223)**	**24**	**0**	**34**	**35,922**	**36,628**	**72,550**

Consolidated statement of cash flows

millions of €

	Note	2020	2019	2018
Profit (loss) before income taxes	35	**8,677**	**7,260**	**5,153**
Depreciation, amortization and impairment losses		25,829	17,663	13,836
(Profit) loss from financial activities		4,128	2,197	2,848
(Profit) loss on the disposal of fully consolidated subsidiaries		(10)	9	0
(Income) loss from the sale of stakes accounted for using the equity method		0	(143)	0
Other non-cash transactions		(857)	569	430
(Gains) losses from the disposal of intangible assets and property, plant and equipment		368	112	(126)
Change in assets carried as operating working capital		(2,702)	(814)	(998)
Change in other operating assets		(509)	(248)	(337)
Change in provisions		20	203	(100)
Change in liabilities carried as operating working capital		(2,108)	(440)	(515)
Change in other operating liabilities		(239)	(325)	(11)
Income taxes received (paid)		(690)	(758)	(697)
Dividends received		6	15	181
Net payments from entering into, canceling or changing the terms and conditions of interest rate derivatives		(2,207)	(3)	0
Cash generated from operations		**29,706**	**25,297**	**19,663**
Interest paid		(7,252)	(3,924)	(3,307)
Interest received		1,289	1,701	1,592
Net cash from operating activities		**23,743**	**23,074**	**17,948**
Cash outflows for investments in				
Intangible assets		(5,756)	(4,375)	(3,353)
Property, plant and equipment		(12,938)	(9,982)	(9,139)
Non-current financial assets		(566)	(417)	(639)
Payments for publicly funded investments in the broadband build-out[a]		(507)	(401)	0
Proceeds from public funds for investments in the broadband build-out[a]		431	341	0
Changes in cash and cash equivalents in connection with the acquisition of control of subsidiaries and associates		(5,028)	(261)	(2,080)
Proceeds from disposal of				
Intangible assets		3	0	2
Property, plant and equipment		233	176	523
Non-current financial assets		112	251	596
Changes in cash and cash equivalents in connection with the loss of control of subsidiaries and associates		1,094	62	(67)
Net change in short-term investments and marketable securities and receivables		273	376	(144)
Other		(2)	(1)	5
Net cash used in investing activities		**(22,649)**	**(14,230)**	**(14,297)**
Proceeds from issue of current financial liabilities		19,018	10,778	51,597
Repayment of current financial liabilities		(34,939)	(16,533)	(57,253)
Proceeds from issue of non-current financial liabilities		34,131	6,278	8,375
Repayment of non-current financial liabilities		(1,699)	(21)	(23)
Dividend payments (including to other shareholders of subsidiaries)		(3,067)	(3,561)	(3,254)
Principal portion of repayment of lease liabilities		(5,371)	(3,835)	(1,174)
Cash inflows from transactions with non-controlling entities		53	13	29
Cash outflows from transactions with non-controlling entities		(565)	(261)	(1,557)
Other		0	0	0
Net cash from (used in) financing activities		**7,561**	**(7,141)**	**(3,259)**
Effect of exchange rate changes on cash and cash equivalents		(1,036)	11	(17)
Changes in cash and cash equivalents associated with non-current assets and disposal groups held for sale		(73)	0	(8)
Net increase (decrease) in cash and cash equivalents		**7,547**	**1,713**	**367**
Cash and cash equivalents, at the beginning of the year		**5,393**	**3,679**	**3,312**
Cash and cash equivalents, at the end of the year		**12,939**	**5,393**	**3,679**

[a] The payments and proceeds shown here relate to those investments in the broadband build-out that are publicly financed in full. Since the payments are not made at the same point in time as the proceeds are received, the net amounts can be positive or negative in the individual periods. These investments are not included in the operational KPIs “Cash capex” and “Free cash flow,” because the payments made do not result in additions to property, plant and equipment.

Notes to the consolidated financial statements

Summary of accounting policies

Notes to the consolidated statement of financial position

Notes to the consolidated income statement

Other disclosures

Summary of accounting policies

General information

The Deutsche Telekom Group (hereinafter referred to as “Deutsche Telekom” or the “Group”) is one of the world’s leading service providers in the telecommunications and information technology sector. Deutsche Telekom offers its customers all kinds of products and services for connected life and work. The Group reports on the operating segments Germany, United States, Europe, Systems Solutions, and Group Development, as well as on the Group Headquarters & Group Services segment.

The Company was entered in the commercial register of the Bonn District Court (Amtsgericht – HRB 6794) as a stock corporation under the name Deutsche Telekom AG on January 2, 1995.

The Company has its registered office in Bonn, Germany. Its address is Deutsche Telekom AG, Friedrich-Ebert-Allee 140, 53113 Bonn.

The Declaration of Conformity with the German Corporate Governance Code required pursuant to § 161 of the German Stock Corporation Act (Aktiengesetz – AktG) has been released and made available to shareholders. The Declaration of Conformity can also be found on the website of Deutsche Telekom in accordance with § 161 AktG.

Declaration of Conformity

The shares of Deutsche Telekom AG are traded on the Frankfurt/Main Stock Exchange as well as on other stock exchanges.

The annual financial statements of Deutsche Telekom AG as well as the consolidated financial statements of Deutsche Telekom AG, which have an unqualified audit opinion from PricewaterhouseCoopers GmbH Wirtschaftsprüfungsgesellschaft, Frankfurt/Main, are published in the Federal Gazette (Bundesanzeiger). The Annual Report is available on Deutsche Telekom’s website.

Publications

The consolidated financial statements of Deutsche Telekom for the 2020 financial year were released for publication by the Board of Management on February 16, 2021.

Basis of preparation

The consolidated financial statements of Deutsche Telekom are being prepared in accordance with the International Financial Reporting Standards (IFRS) as adopted by the European Union (EU), as well as with the regulations under commercial law as set forth in § 315e (1) of the German Commercial Code (Handelsgesetzbuch – HGB). The term IFRS is consistently used in the following.

The financial year corresponds to the calendar year. The consolidated statement of financial position includes comparative amounts for one reporting date. The consolidated income statement, the consolidated statement of comprehensive income, the consolidated statement of changes in equity, and the consolidated statement of cash flows include two comparative years.

Presentation in the statement of financial position differentiates between current and non-current assets and liabilities, which – where required – are broken down further by their respective maturities in the notes to the consolidated financial statements. The consolidated income statement is presented using the total cost method. Here, the costs incurred in the financial year are broken down by cost type and the costs capitalized under inventories as well as under intangible assets and property, plant and equipment are presented separately as changes in inventories or own capitalized costs. The consolidated financial statements are prepared in euros.

The financial statements of Deutsche Telekom AG and its subsidiaries included in the consolidated financial statements were prepared using uniform group accounting policies.

Initial application of standards, interpretations, and amendments in the financial year

Pronouncement	Title	To be applied by Deutsche Telekom from	Changes	Expected impact on the presentation of Deutsche Telekom's results of operations and financial position
Amendments to References to the Conceptual Framework	References to the Conceptual Framework	Jan. 1, 2020	Updating of the cross-references to the revised conceptual framework in the corresponding standards and interpretations.	No material impact.
Amendments to IAS 1 and IAS 8	Definition of Material	Jan. 1, 2020	Clarification of the definition of the concept of materiality.	No material impact.
Amendments to IFRS 3	Business Combinations	Jan. 1, 2020	Changes in the definition of a business to clarify whether a business or a group of assets was being acquired.	No material impact.
Amendments to IFRS 9, IAS 39, and IFRS 7	Interest Rate Benchmark Reform (Phase 1)	Jan. 1, 2020	Practical expedients for hedge accounting requirements that are mandatory for all hedges affected by the interest rate benchmark reform. Further disclosures on this are also required.	The effects are detailed in the explanations following this table.

The reform of interbank offered rates (IBORs) is currently generating uncertainty regarding the timing of implementation and the precise content of the planned changes. Deutsche Telekom is affected by this uncertainty in its hedging of interest rate and currency risks in designated fair value and cash flow hedges where certain IBORs are part of the hedging relationship (EURIBOR, USD-LIBOR, GBP-LIBOR, AUD-LIBOR, CHF-LIBOR, HKD-LIBOR, and NOK-OIBOR). Group Treasury continuously analyzes the latest developments and takes any steps needed to transition to the new interest rate benchmarks. Deutsche Telekom does not expect the changes in the benchmark rates to have a material impact.

For information on hedging relationships, please refer to Note 41 "Financial instruments and risk management."

Standards, interpretations, and amendments issued, but not yet to be applied

Pronouncement	Title	To be applied by Deutsche Telekom from	Changes	Expected impact on the presentation of Deutsche Telekom's results of operations and financial position
IFRSs endorsed by the EU				
Amendments to IFRS 16	Covid-19-related Rent Concessions	Jan. 1, 2021[a]	Practical expedient for lessee accounting of rent concessions granted due to the Covid-19 pandemic. Instead of assessing whether a rent concession is a lease modification, the lessee can account for the changes in lease payments as if they were not lease modifications.	Practical expedient not applied by Deutsche Telekom.
Amendments to IFRS 4	Insurance Contracts – deferral of IFRS 9	Jan. 1, 2021	Deferral of first-time application of IFRS 9 for insurance companies.	No impact.
Amendments to IFRS 9, IAS 39 and IFRS 7, IFRS 4 and IFRS 16	Interest Rate Benchmark Reform (Phase 2)	Jan. 1, 2021	The amendments address the impact of modifications of financial instruments required as a direct consequence of IBOR reform, hedge accounting requirements, and the accompanying disclosures.	No material impact expected.

[a] Earlier application is permissible. Deutsche Telekom already decided in the 2020 financial year to not apply the practical expedient.

[b] For standards not yet endorsed by the EU, the date of first-time adoption scheduled by the IASB is assumed for the time being as the likely date of first-time adoption.

Pronouncement	Title	To be applied by Deutsche Telekom from	Changes	Expected impact on the presentation of Deutsche Telekom's results of operations and financial position
IFRSs not yet endorsed by the EU[b]				
Amendments to IAS 16	Proceeds before Intended Use	Jan. 1, 2022	The amendment prohibits entities from deducting from the cost of an item of property, plant and equipment any proceeds from selling items produced while bringing that asset to the location and condition necessary for it to be capable of operating in the manner intended by management. Clarification of the definition of the costs of testing. Revenue and cost that relate to items produced that are not an output of the entity's ordinary activities must be presented separately. Disclosure of the line item in the statement of comprehensive item that includes such revenue.	No material impact.
Amendments to IAS 37	Provisions, Contingent Liabilities and Contingent Assets	Jan. 1, 2022	Clarification that the cost of fulfilling a contract includes all directly attributable costs. The cost of fulfilling the contract includes both the incremental costs of fulfilling that contract (such as direct wage and material costs) and an allocation of other costs that relate directly to fulfilling contracts. In addition, it is clarified that before a provision for an onerous contract is established, an entity should recognize any impairment loss that has occurred on assets used in (previously: dedicated to) fulfilling the contract.	No material impact.
Amendments to IFRS 3	Reference to the Conceptual Framework	Jan. 1, 2022	Reference to the revised IFRS Conceptual Framework. Requirement that, for identifying liabilities within the scope of IAS 37 or IFRIC 21, an acquirer should apply IAS 37 or IFRIC 21 (instead of the Conceptual Framework) to identify the liabilities it has assumed in a business combination. Addition of an explicit statement that an acquirer should not recognize contingent assets acquired in a business combination.	No material impact.
Annual Improvements Project	Annual Improvements to IFRSs 2018–2020 Cycle	Jan. 1, 2022	Revision of specific aspects in IFRS 1, IFRS 9, IFRS 16, and IAS 41	No material impact.
IFRS 17	Insurance Contracts	Jan. 1, 2023	IFRS 17 governs the accounting for insurance contracts and replaces IFRS 4.	No material impact.
Amendments to IFRS 17	Insurance Contracts	Jan. 1, 2023	Deferral of first-time application of IFRS 17 to January 1, 2023. The fundamental principles under IFRS 17 remain unaffected. The amendments to the standard, which refer to specific topics, are aimed at helping entities implement the standard and, at the same time, avoiding a significant loss of useful information.	No material impact.
Amendments to IAS 1	Presentation of Financial Statements	Jan. 1, 2023	Clarification of the classification of liabilities as current or non-current.	No material impact.

[a] Earlier application is permissible. Deutsche Telekom already decided in the 2020 financial year to not apply the practical expedient.

[b] For standards not yet endorsed by the EU, the date of first-time adoption scheduled by the IASB is assumed for the time being as the likely date of first-time adoption.

Changes in accounting policies, changes in the reporting structure

Deutsche Telekom did not make any major changes to its accounting policies in the reporting year.

With effect from July 1, 2020, TC Services and Classified ICT, portfolio units previously assigned to the Systems Solutions operating segment, as well as Telekom Global Carrier (TGC) and Network Infrastructure (NWI), which had formerly been reported under the Europe operating segment and the Group Headquarters & Group Services segment respectively, and which together form the business area designated as Deutsche Telekom Global Carrier (DTGC), have been combined in the Germany operating segment. Since then, the management of the Deutsche Telekom Group and hence also the reporting structure both have been based on this new segment allocation. As part of these transactions, the assets and liabilities assigned to the business areas were transferred to the Germany operating segment. Prior-year comparatives in the segments affected have been adjusted retrospectively in segment reporting. The transactions were consummated under company law on July 1, 2020 (TC Services and Classified ICT) and on October 1, 2020 (DTGC).

For further information on changes in the disclosure of key figures for the prior years, please refer to the section "Development of business in the Group" in the combined management report.

Accounting policies

Key assets and liabilities shown in the consolidated statement of financial position are measured as follows:

Items in the statement of financial position	Measurement principle
Assets	
Current assets	
Cash and cash equivalents	Amortized cost
Trade receivables	Depending on the underlying business model in each case: at amortized cost, at fair value through other comprehensive income with recycling to profit or loss, or at fair value through profit or loss
Contract assets	Amortized cost
Current recoverable income taxes	Amount expected to be recovered from the taxation authorities, using the tax rates that have been enacted or substantively enacted by the end of the reporting period
Other financial assets	
Originated loans and other receivables	Depending on the underlying business model in each case: at amortized cost, at fair value through other comprehensive income with recycling to profit or loss, or at fair value through profit or loss
Equity instruments	Fair value through other comprehensive income without recycling to profit or loss
Derivative financial assets	At fair value through profit or loss or, in the case of certain hedging relationships, at fair value through other comprehensive income with recycling to profit or loss
Inventories	Lower of net realizable value and cost
Non-current assets and disposal groups held for sale	Lower of carrying amount or fair value less costs of disposal (including allocable liabilities)
Non-current assets	
Intangible assets	
Of which: with finite useful lives	Amortized cost or lower recoverable amount
Of which: with indefinite useful lives (including goodwill)	Cost or lower recoverable amount (impairment-only approach)
Property, plant and equipment	Amortized cost or lower recoverable amount
Right-of-use assets	Amortized cost or lower recoverable amount
Capitalized contract costs	Amortized cost or lower recoverable amount
Investments accounted for using the equity method	Pro rata value of the investment's equity carried forward or lower recoverable amount
Other financial assets	
Originated loans and other receivables	Depending on the underlying business model in each case: at amortized cost, at fair value through other comprehensive income with recycling to profit or loss, or at fair value through profit or loss
Equity instruments	Fair value through other comprehensive income without recycling to profit or loss
Derivative financial assets	At fair value through profit or loss or, in the case of specific hedge accounting, at fair value through other comprehensive income with recycling to profit or loss
Deferred tax assets	Non-discounted amount measured at the tax rates that are expected to apply to the period when the asset is realized or the liability settled
Liabilities	
Current liabilities	
Financial liabilities	
Non-derivative interest-bearing and non-interest-bearing liabilities	Amortized cost
Derivative financial liabilities	At fair value through profit or loss or, in the case of certain hedging relationships, at fair value through other comprehensive income with recycling to profit or loss
Lease liabilities	Amortized cost
Trade payables	Amortized cost
Income tax liabilities	Amount expected to be paid to the taxation authorities, using the tax rates that have been enacted or substantively enacted by the end of the reporting period
Other provisions	Present value of the settlement amount
Contract liabilities	Amortized cost
Non-current liabilities	
Financial liabilities	
Non-derivative interest-bearing and non-interest-bearing liabilities	Amortized cost
Derivative financial liabilities	At fair value through profit or loss or, in the case of certain hedging relationships, at fair value through other comprehensive income with recycling to profit or loss
Lease liabilities	Amortized cost
Provisions for pensions and other employee benefits	Actuarial projected unit credit method
Other provisions	Present value of the settlement amount
Contract liabilities	Amortized cost
Deferred tax liabilities	Non-discounted amount measured at the tax rates that are expected to apply to the period when the asset is realized or the liability settled

The material principles on recognition and measurement set out below were applied uniformly to all accounting periods presented in these consolidated financial statements.

Intangible assets (excluding goodwill)

Intangible assets with finite useful lives, including 5G, LTE, UMTS, and GSM licenses, are measured at cost and generally amortized on a straight-line basis over their useful lives. Such assets are impaired if their recoverable amount, which is measured at the higher of fair value less costs of disposal and value in use, is lower than the carrying amount. Indefinite-lived intangible assets (mobile communications licenses granted by the Federal Communications Commission in the United States (FCC licenses)) are carried at cost. While FCC licenses are issued for a fixed time, renewals of FCC licenses have occurred routinely and at negligible costs. Moreover, Deutsche Telekom has determined that there are currently no legal, regulatory, contractual, competitive, economic, or other factors that limit the useful lives of the FCC licenses, and therefore treats the FCC licenses as an indefinite-lived intangible asset. They are not amortized, but tested for impairment annually or whenever there are indications of impairment and, if necessary, written down to the recoverable amount. If the reasons for recognizing the original impairment loss no longer apply, impairment losses are reversed taking amortization into account, i.e., not exceeding the value that would have been applied if no impairment losses had been recognized in prior periods.

Intangible assets may also be acquired in connection with a frequency or spectrum exchange. The costs of intangible assets acquired in such a barter transaction are measured at fair value if the swap has commercial substance and the fair value of the asset received and the asset given up is reliably measurable. If the barter transaction lacks commercial substance or the fair value of neither the asset received nor the asset given up is reliably measurable, the carrying amount of the asset given up is used as the fair value of the asset received.

Limited-term spectrum leases normally satisfy the recognition criteria because the parties to the contract fulfill their performance obligations on entering into the contract, which means there are no more executory contracts. Acquired television, film, and sports rights (media broadcasting rights) are recognized if the content is sufficiently developed to satisfy the identifiability criterion.

On initial recognition, the intangible asset and the corresponding financial liability are measured only on the basis of the minimum contract term. Where a right of termination exists, the period beyond the effective date of the earliest possible termination is not considered on initial recognition. Where a right of renewal exists, the renewal period is not considered on initial recognition.

The useful lives and the amortization methods of the intangible assets are reviewed at least at each financial year-end. If expectations differ from previous estimates, the changes are recognized as changes in accounting estimates in accordance with IAS 8.

Amortization of mobile communications licenses begins as soon as the related network is ready for use. The useful lives of mobile communications licenses are determined based on several factors, including the term of the licenses granted by the respective regulatory body in each country, the availability and expected cost of renewing the licenses, as well as the development of future technologies.

The useful lives of Deutsche Telekom's most important mobile communications licenses are as follows:

Mobile communications licenses	Years
FCC licenses	Indefinite
5G licenses	19 to 23
LTE licenses	6 to 25
UMTS licenses	17 to 19
GSM licenses	7 to 27

Expenditures for internally generated intangible assets incurred during the development phase are capitalized if they meet the criteria for recognition as assets, and are amortized over their useful lives. Research expenditures are expensed as incurred. Development is the application of research findings or other knowledge to a plan or design for the production of new or substantially improved materials, devices, products, processes, systems, or services prior to the commencement of commercial production or use. Examples of activities typically included in development are the design, construction, and testing of pre-production or pre-use prototypes and models involving new technology. The development phase is deemed complete when the IT department has formally documented that the capitalized asset is ready for its intended use. Expenditure on research and development recognized as an expense by Deutsche Telekom amounted to EUR 33.1 million (2019: EUR 45.4 million).

Goodwill

Goodwill is not amortized, but is tested for impairment based on the recoverable amount of the cash-generating unit to which the goodwill is allocated (impairment-only approach). The impairment test is carried out on a regular basis at the end of each financial year, as well as whenever there are indications that a carrying amount of the cash-generating unit is impaired.

Property, plant and equipment

Property, plant and equipment is carried at cost less straight-line depreciation, and impairment losses, if applicable. The depreciation period is based on the expected useful life of the assets. Items of property, plant and equipment are depreciated pro rata temporis in the year of acquisition. The residual values, useful lives, and the depreciation methods of the assets are reviewed at least at each financial year-end. If expectations differ from previous estimates, the changes are accounted for as changes in accounting estimates in accordance with IAS 8. In addition to directly attributable costs, the costs of internally developed assets include proportionate indirect material and labor costs, as well as administrative expenses relating to production or the provision of services. In addition to the purchase price and costs directly attributable to bringing the asset to the location and condition necessary for it to be capable of operating in the manner intended by management, costs also include the estimated costs for dismantling and removing the asset, and restoring the site on which it is located. If an item of property, plant and equipment consists of several components with different estimated useful lives, those components that are significant are depreciated over their individual useful lives. Maintenance and repair costs are expensed as incurred. If an asset is owned and a portion is used as an item of property, plant and equipment while another physically distinct portion of the owned asset is leased under an operating lease (e.g., office floors of a building or individual optical fibers of a cable), the portion of the asset that is leased is not presented separately.

Public investment grants reduce the cost of the property, plant and equipment for which the grants were made.

Investment grants are recognized when there is reasonable assurance that the entity will comply with the conditions attached to them, and the grants will be received in the full amount. If this reasonable assurance already exists when the contract is being concluded, the grant is recognized in full under other financial assets upon conclusion of the agreement, with a matching non-financial other liability for the build-out obligation. In subsequent periods, the financial asset measured at amortized cost is reduced upon receipt of the payments. The other liability is derecognized on a pro rata basis as the build-out progresses, reducing the carrying amount of the publicly funded property, plant and equipment. If there is not yet reasonable assurance, only the installment payments received are recognized, with a matching non-financial other liability. As soon as there is reasonable assurance, outstanding grants are recognized under other financial assets, and the carrying amounts of the other liability and the publicly funded property, plant and equipment are adjusted in accordance with the actual build-out progress. All grants received are recognized in net cash from/used in investing activities.

On disposal of an item of property, plant and equipment or when no future economic benefits are expected from its use or disposal, the carrying amount of the item is derecognized. The gain or loss arising from the disposal of an item of property, plant and equipment is the difference between the net disposal proceeds, if any, and the carrying amount of the item and is recognized as other operating income or other operating expenses when the item is derecognized. The useful lives of the main asset classes are shown in the table below:

Asset classes	Years[a]
Buildings	25 to 50
Technical equipment and machinery	2 to 35
Other equipment, operating and office equipment	2 to 23

[a] The useful lives indicated represent the maximum number of years as specified by the Group. The actual useful lives may be shorter due to contractual arrangements or other specific factors such as time and location.

Leasehold improvements are depreciated over the shorter of their useful lives or terms of the lease.

Borrowing costs
Borrowing costs that are directly attributable to the acquisition, construction, or production of a qualifying asset are capitalized as part of the cost of that asset. Deutsche Telekom defines qualifying assets as construction projects or other assets for which a period of at least twelve months is necessary in order to get them ready for their intended use or sale. Borrowing costs relating to assets measured at fair value and to inventories that are manufactured or produced in large quantities on a repetitive basis are not capitalized.

Impairments of intangible assets (including goodwill), items of property, plant and equipment, and right-of-use assets
Impairments are identified by comparing the carrying amount with the recoverable amount. If individual assets do not generate future cash flows independently of other assets, recoverability is assessed on the basis of the larger cash-generating unit to which the assets belong. At each reporting date, Deutsche Telekom assesses whether there is any indication that an asset may be impaired. If any such indication exists, the recoverable amount of the asset or cash-generating unit must be determined. In addition, annual impairment tests are carried out for intangible assets with indefinite useful lives (goodwill and FCC licenses) at regular intervals. For the purpose of impairment testing, goodwill acquired in a business combination is allocated to each of the cash-generating units that are expected to benefit from the synergies of the combination. If the carrying amount of the cash-generating unit to which goodwill is allocated exceeds its recoverable amount, goodwill allocated to this cash-generating unit must be reduced in the amount of the difference. Impairment losses for goodwill must not be reversed. If the impairment loss recognized for the cash-generating unit exceeds the carrying amount of the allocated goodwill, the additional amount of the impairment loss is to be distributed on a pro rata basis to the assets allocated to the cash-generating unit. The fair values or values in use (if measurable) of the individual assets shall be considered to be the minimum values. If the reasons for previously recognized impairments no longer exist, the impairment losses on the assets concerned (with the exception of goodwill) must be reversed.

The recoverable amount of a cash-generating unit is measured at the higher of fair value less costs of disposal and the value in use. The recoverable amount is generally determined by means of a discounted cash flow (DCF) calculation, unless it can be determined on the basis of a market price. These DCF calculations use projections that are based on financial budgets approved by management covering a ten-year period and are also used for internal purposes. The planning horizon reflects the assumptions for short- to mid-term market developments. Cash flows beyond the ten-year period are extrapolated using appropriate growth rates. For the key assumptions on which management has based its calculation of the recoverable amount, please refer to the explanations provided under "Judgments and estimates," further on in this section.

Inventories
Inventories are carried at cost at initial recognition and are subsequently measured at the lower of cost and net realizable value. Cost comprises all costs of purchase, costs of conversion, and other costs incurred in bringing the inventories to their present location and condition. Cost is measured using the weighted average cost method. Net realizable value is the estimated standalone selling price in the ordinary course of business less the estimated costs of completion and the necessary estimated selling expenses.

Non-current assets and disposal groups held for sale
Non-current assets and disposal groups held for sale are classified as such if their carrying amount will be recovered principally through a sale transaction rather than through continuing use. These assets are measured at the lower of the carrying amount and fair value less costs of disposal and classified as non-current assets and disposal groups held for sale. Such assets are no longer depreciated. Impairment of such assets is recognized if fair value less costs of disposal is lower than the carrying amount. If fair value less costs of disposal subsequently increases, the impairment loss previously recognized must be reversed. The reversal of impairment losses is limited to the impairment losses previously recognized for the assets concerned. If the requirements for the classification of assets as held for sale are no longer met, the assets may no longer be shown as held for sale. The assets are to be measured at the lower of the carrying amount that would have applied if the asset had not been classified as held for sale, and the recoverable amount at the date at which the requirements for the classification as held for sale are no longer met.

Employee benefits
Deutsche Telekom maintains **defined benefit pension plans** in various countries on the basis of the pensionable compensation of its employees and their length of service. Some of these pension plans are financed through external pension funds and some through incorporation in a contractual trust agreement (CTA). Provisions for pensions are actuarially measured using the projected unit credit method for defined benefit pension plans, taking into account not only the pension obligations and vested pension rights known at the reporting date, but also expected future salary and benefit increases. The interest rate used to determine the present value of the obligations is generally set on the basis of the yields on high-quality corporate bonds in the respective currency area. The return on plan assets and interest expenses resulting from the unwinding of the discount are reported in profit/loss from financial activities. Service cost is classified as operating expenses. Past service cost resulting from a change in the pension plan shall immediately be recognized in the income statement in the period in which the change took effect. Gains and losses arising from adjustments and changes in actuarial assumptions are recognized immediately and in full in the period in which they occur outside profit or loss within equity. Some Group entities grant defined contribution plans to their employees in accordance with statutory or contractual requirements, with the payments being made to state or private pension insurance funds. Under defined contribution plans, the employer does not assume any other obligations above and beyond the payment of contributions to an external fund. The amount of the future pension payments will exclusively depend on the contribution made by the employer (and their employees, if applicable) to the external fund, including income from the investment of such contributions. The amounts payable are expensed when the obligation to pay the amounts is established, and classified as expenses.

Up until December 31, 2012, Deutsche Telekom maintained a joint pension fund, **Bundes-Pensions-Service für Post und Telekommunikation e.V.**, Bonn (Federal Pension Service for Post and Telecommunications – BPS-PT), together with Deutsche Post AG and Deutsche Postbank AG for civil-servant pension plans. BPS-PT made pension and allowance payments to retired employees and their surviving dependents who are entitled to pension payments as a result of civil-servant status. The German Act on the Reorganization of the Civil Service Pension Fund (Gesetz zur Neuordnung der Postbeamtenversorgungskasse – PVKNeuG) transferred the functions of BPS-PT relating to civil-servant pensions (organized within the Civil Service Pension Fund) to the German Federal Posts and Telecommunications Agency effective January 1, 2013. The level of Deutsche Telekom AG's payment obligations to the Civil Service Pension Fund is defined under § 16 of the German Act on the Legal Provisions for the Former Deutsche Bundespost Staff (Postpersonalrechtsgesetz). Deutsche Telekom AG has been legally obligated since 2000 to make an annual contribution to the special pension fund amounting to 33 % of the pensionable gross emoluments of active civil servants and the notional pensionable gross emoluments of civil servants on leave of absence. Deutsche Telekom is not required to fulfill any other obligations in respect of pensions for civil servants. The payment obligations are therefore to be considered defined contribution plans.

In the past, Deutsche Telekom AG and its domestic subsidiaries agreed on **phased retirement arrangements** with varying terms and conditions, predominantly based on what is known as the block model. Two types of obligations, both measured at their present value in accordance with actuarial principles, arise and are accounted for separately. The first type of obligation relates to the cumulative outstanding settlement amount, which is recorded on a pro rata basis during the active or working phase. The cumulative outstanding settlement amount is based on the difference between the employee's remuneration before entering phased retirement (including the employer's social security contributions) and the remuneration for the part-time service (including the employer's social security contributions, but excluding top-up payments). The second type of obligation relates to the employer's obligation to make top-up payments plus an additional contribution to the statutory pension scheme. Top-up payments are often hybrid in nature, i.e., although the agreement is often considered a form of compensation for terminating the employment relationship at an earlier date, payments to be made at a later date are subject to the performance of work in the future. Despite having the characteristics of severance payments, the top-up payments must be recognized ratably over the vesting period due to their dependency on the performance of work in the future. If the block model is used, the vesting period for top-up payments starts when the employee is granted the entitlement to participate in the phased retirement program and ends upon entry into the passive phase (leave from work).

Obligations arising from the granting of termination benefits are recognized when Deutsche Telekom does not have a realistic possibility of withdrawal from the granting of the corresponding benefits. **Severance payments for employees and obligations arising in connection with early retirement arrangements** in Germany are mainly granted in the form of offers to the employees to leave the Company voluntarily. As a rule, such obligations are not recognized before the employees have accepted an offer from the Company, unless the Company is prevented by legal or other restrictions from withdrawing its offer at an earlier date. Obligations arising from the sole decision by the Company to shed jobs are recognized when the Company has announced a detailed formal plan to terminate employment relationships. If termination benefits are granted in connection with restructuring measures within the meaning of IAS 37, a liability under IAS 19 is recognized at the same time as a restructuring provision. Where termination benefits fall due more than twelve months after the reporting date, the expected amount to be paid is discounted to the reporting date. If the timing or the amount of the payment is still uncertain at the reporting date, the obligations are reported under other provisions.

Other provisions

Other provisions are recognized for current legal or constructive obligations to third parties that are uncertain with regard to their timing or their amount. Provisions are recognized for these obligations provided they relate to past transactions or events, will probably require an outflow of resources to settle, and this outflow can be reliably measured. Provisions are carried at their expected settlement amount, taking into account all identifiable risks and uncertainties. The settlement amount is calculated on the basis of a best estimate; suitable estimation methods and sources of information are used depending on the characteristics of the obligation. In the case of a number of similar obligations, the group of obligations is treated as one single obligation. The expected value method is used as the estimation method. If there is a range of potential events with the same probability of occurrence, the average value is taken. Individual obligations (e.g., legal and litigation risks) are regularly evaluated based on the most probable outcome, provided an exceptional probability distribution does not mean that other estimates would lead to a more appropriate evaluation. The measurement of provisions is based on past experience, current costing, and price information, as well as estimates and reports from experts. If experience or current costing or price information is used to determine the settlement amount, these values are extrapolated to the expected settlement date. Suitable price trend indicators (e.g., construction price indexes or inflation rates) are used for this purpose. Provisions are discounted when the effect of the time value of money is material. Provisions are discounted using pre-tax market interest rates that reflect the term of the obligation and the risk associated with it (insofar as not already taken into consideration in the calculation of the settlement amount). Reimbursement claims are not netted against provisions; they are recognized separately as soon as their realization is virtually certain.

Provisions for decommissioning, restoration, and similar obligations arising from the acquisition of property, plant and equipment are offset by a corresponding increase in the capitalized cost of the relevant asset. Changes at a later date in estimates of the amount or timing of payments or changes to the interest rate applied in measuring such obligations also result in retrospective increases or decreases in the carrying amount of the relevant item of property, plant and equipment. These in turn change the depreciation of the asset to be recognized in the future, which leads to the changes in estimates being recognized in profit or loss over the remaining useful life. Where the decrease in the amount of a provision exceeds the carrying amount of the related asset, the excess is recognized immediately in profit or loss.

Financial instruments

Financial instruments are recognized as soon as Deutsche Telekom becomes a party to the contractual regulations of the financial instrument. However, in the case of regular way purchase or sale, the settlement date is relevant for the initial recognition and derecognition. This is the day on which the asset is delivered to or by Deutsche Telekom. In general, financial assets and financial liabilities are offset and the net amount presented in the statement of financial position when, and only when, the entity currently has a right to offset the recognized amounts and intends to settle on a net basis. Transferred financial assets are derecognized in full if substantially all the risks and rewards of ownership are transferred or if some of the risks and rewards of ownership are transferred (risk sharing) and the acquirer has both the legal and the practical ability to sell the assets to a third party. If, in cases where risk is shared, the acquirer is unable to sell the assets to a third party, the assets will continue to be recognized to the extent of the maximum risk retained. Financial liabilities are derecognized when the obligation specified in the contract expires or if there is a substantial modification of the terms of the contract.

Financial assets include cash and cash equivalents, trade receivables, originated loans and other receivables, investments in equity instruments, and derivative financial assets. They are measured at fair value upon initial recognition. For all financial assets not subsequently measured at fair value through profit or loss, the transaction costs directly attributable to the acquisition are taken into account plus, in the case of debt instruments, a loss account for expected credit losses. The fair values recognized in the statement of financial position are generally based on market prices of the financial assets. If these are not available, the fair value is determined using standard valuation models on the basis of current market parameters. For the classification and measurement of debt instruments held, the respective business model for managing the debt instruments and whether the instruments have the characteristics of a standard loan, i.e., whether the cash flows are solely payments of principal and interest, is relevant. Assuming the assets have these characteristics and if the business model is to hold to collect the asset's contractual cash flows, they are measured at amortized cost. If the objective of the business model is to hold to collect and sell the contractual cash flows, they are measured at fair value through other comprehensive income with recycling to profit or loss. In all other cases, financial assets are measured at fair value through profit or loss. There may be different business models for separate portfolios of the same types of debt instruments, for example if factoring transactions exist for certain trade receivables.

Cash and cash equivalents include cash accounts and short-term cash deposits at banks; they have maturities of up to three months at initial recognition.

Trade receivables and **originated loans and other receivables** are measured at their transaction price at initial recognition if they do not contain a significant financing component. Instruments with a significant financing component are initially measured at fair value.

Investments in **equity instruments** represent strategic investments. Deutsche Telekom has exercised the option of generally measuring these through other comprehensive income without recycling to profit or loss. This is due to the fact that Deutsche Telekom's primary goal for strategic investments is not a short-term maximization of profit (trading). The acquisition and disposal of strategic investments is based on business policy considerations.

Dividends received are recognized immediately in profit or loss unless they constitute a repayment of capital.

Derivative financial assets that are not part of an effective hedging relationship are measured at fair value through profit or loss.

In the **consolidated statement of cash flows**, Deutsche Telekom reports cash flows from interest and dividends received as cash inflows or outflows in net cash from operating activities.

Financial liabilities are measured at fair value on initial recognition. For all financial liabilities not subsequently measured at fair value through profit or loss, the transaction costs directly attributable to the acquisition are also a component of the carrying amount.

If the contractual payment term for **liabilities to suppliers** is longer than the normal credit period in the relevant procurement market at this point in time, this liability is reported under other interest-bearing liabilities in financial liabilities instead of under trade payables. A financing agreement of this nature is shown as a non-cash transaction in the statement of cash flows and the relevant repayment of the financial liability reported under net cash from/used in financing activities. This applies regardless of whether the supplier sells its receivable or not.

For further information on the effects on the consolidated statement of cash flows, please refer to Note 35 "Notes to the consolidated statement of cash flows."

Derivative financial liabilities that are not part of an effective hedging relationship are measured at fair value through profit or loss.

Deutsche Telekom has not yet made use of the option to designate financial instruments upon initial recognition as **at fair value through profit or loss**.

At initial recognition, debt instruments that are not measured at fair value through profit or loss are measured including a loss allowance account for expected **credit losses**. For trade receivables with and without a significant financing component, contract assets, and lease assets, the loss allowance is calculated at an amount equal to the lifetime expected credit losses. For all other instruments, the loss allowance is determined at an amount equal to the lifetime expected credit losses if the credit risk on that financial instrument has increased significantly since initial recognition. Otherwise, the loss allowance is calculated at an amount equal to twelve-month expected credit losses. In this case, losses incurred later than twelve months after the reporting date would therefore not be considered.

When a loss allowance for expected credit losses is being determined, the historical probability of default supplemented by the relevant future parameters for the credit risk is used as the basis for the calculation. For debt instruments traded in an active market, publicly available market data is used to determine the loss allowance for expected credit losses.

The loss allowance takes adequate account of the future expected credit risk; write-offs lead to the derecognition of the respective receivables. For allowances, financial assets are grouped together on the basis of similar credit risk characteristics, tested collectively for impairment, and written off, if necessary. The cash flows are discounted on the basis of the weighted average of the original effective interest rates of the financial assets in the relevant portfolio. Impairments of trade receivables are recognized in some cases using allowance accounts. The decision to account for credit risks using an allowance account or by directly reducing the receivable will depend on the reliability of the risk assessment. As there are a variety of operating segments and regional circumstances, this decision is the responsibility of the respective portfolio managers.

Deutsche Telekom uses **derivatives** to hedge the interest rate and currency risks resulting from its operating, financing, and investing activities. The Company does not hold or issue derivatives for speculative trading purposes. Derivatives are carried at their fair value upon initial recognition and also for subsequent measurement. The fair value of traded derivatives is equal to their market price, which can be positive or negative. If there is no market price available, the fair value is determined using standard financial valuation models.

The fair value of derivatives is the price that Deutsche Telekom would receive or have to pay if the financial instrument were transferred at the reporting date. This is calculated on the basis of the counterparties' relevant exchange rates and interest rates at the reporting date. Calculations are made using average rates. In the case of interest-bearing derivatives, a distinction is made between the clean price and the dirty price (full fair value). In contrast to the clean price, the dirty price also includes the interest accrued. The fair values carried correspond to the dirty price.

Embedded derivatives must be separated from financial liabilities and other non-financial contracts that are not measured at fair value through profit or loss if the economic characteristics and risks of the embedded derivative are not closely related to the economic characteristics and risks of the host contract. These derivatives must then be recognized separately and measured at fair value through profit or loss. Derivatives embedded in financial assets do not need to be separated, however. In such cases, the entire instrument must be measured at fair value through profit or loss.

Recording the changes in the fair values – either in profit or loss or directly in equity – depends on whether or not the derivative is part of an effective hedging relationship as set out in IFRS 9. If hedge accounting is not applied, the changes in the fair values of the derivatives must be recognized immediately in profit or loss. If, on the other hand, effective hedge accounting exists, the hedge will be recognized as such.

Deutsche Telekom applies hedge accounting to hedged items in the statement of financial position and future cash flows, thus reducing income statement volatility. A distinction is made between fair value hedges, cash flow hedges, and hedges of a net investment in a foreign operation depending on the nature of the hedged item. Hedging relationships are exclusively accounted for in accordance with the requirements of IFRS 9. Deutsche Telekom has exercised the option of designating cross-currency basis spreads as hedging costs rather than as part of the hedging relationship and presenting them separately in equity. To hedge the currency risk of an unrecognized firm commitment, Deutsche Telekom makes use of the option to recognize it as a cash flow hedge rather than a fair value hedge. In the case of fair value hedges, the cumulative adjustments to the carrying amount of the hedged item are amortized when the hedging relationship has been discontinued.

IFRS 9 sets out strict requirements on the use of hedge accounting. Deutsche Telekom complies with these requirements by documenting, at the inception of a hedge, both the relationship between the financial instrument used as the hedging instrument and the hedged item, as well as the risk management objective and the risk strategy of the hedge. This involves concretely assigning the hedging instruments to the corresponding assets or liabilities or (firmly committed/highly probable) future transactions and also assessing the effectiveness of the hedging instruments designated. The effectiveness of existing hedging relationships is monitored on an ongoing basis. If the criteria for applying hedge accounting are no longer met, the hedging relationship will be de-designated immediately.

Deutsche Telekom does not use hedge accounting in accordance with IFRS 9 to hedge the foreign-currency exposure of recognized monetary assets and liabilities, because the gains and losses on the hedged item from currency translation that are recognized in profit or loss in accordance with IAS 21 are shown in the income statement together with the gains and losses on the derivatives used as hedging instruments.

Contingencies (contingent liabilities and assets)

Contingencies (contingent liabilities and assets) are potential liabilities or assets arising from past events whose existence will be confirmed by the occurrence or non-occurrence of one or more uncertain future events not entirely within the control of Deutsche Telekom. Contingent liabilities are also present obligations that arise from past events for which an outflow of resources embodying economic benefits is not probable or for which the amount of the obligation cannot be measured with sufficient reliability. Contingent liabilities are only recognized at their fair value if they were assumed in the course of a business combination. Contingent liabilities not assumed in the course of a business combination are not recognized. Contingent assets are not recognized. However, when the realization of income is virtually certain, then the related asset is no longer a contingent asset, but it is recognized as an asset. Information on contingent liabilities is disclosed in the notes to the consolidated financial statements, unless the possibility of an outflow of resources embodying economic benefits is remote. The same applies to contingent assets where an inflow of economic benefits is probable.

Leases
A lease is a contract in which the lessor conveys the right to use an asset for a period of time to the lessee in exchange for consideration, typically a payment or series of payments. The scope of IFRS 16 applies to standard lease, rental, and tenancy agreements as well as agreements in which the lessee is granted other rights to use assets, such as certain easements. A lease only exists if the contract conveys the right to control the use of an identified asset to the lessee. The lessee has control when it has the right to obtain substantially all of the economic benefits from use of the identified asset and the right to direct the use of the identified asset.

Lessee. At the commencement date of the lease, a lessee recognizes a right-of-use asset and a lease liability in the statement of financial position for all leases. The right-of-use asset is measured applying the cost model and the lease liability is measured at the present value of the future lease payments. This measurement concept also applies to leases for which the underlying asset is of low value and to short-term leases for which the lease term is no longer than twelve months. Non-lease components are not separated from lease components, i.e., all non-lease payments due under the contract are also recognized in the statement of financial position. This practical expedient does not include contracts relating to data centers, which due to their special requirements in terms of equipment and premises form their own separate class of underlying asset. For this class of assets, the non-lease payments are recognized as an expense. IAS 38 is applied for leases of intangible assets rather than IFRS 16.

The lease liability is recognized at the present value of the future lease payments to be made over the reasonably certain lease term. Lease payments are all of the fixed and in-substance fixed payments, less any future lease incentives payable by the lessor. Variable lease payments that depend on an index or a rate, amounts expected to be payable under residual value guarantees, and payment for the exercise of reasonably certain purchase and termination options are also measured and recognized as part of the lease liability. The series of payments is discounted at the interest rate implicit in the lease or, if that rate cannot be readily determined, at the lessee's incremental borrowing rate. The incremental borrowing rate is determined by deriving benchmark interest rates for a period of up to 30 years from maturity-related risk-free interest rates which are increased by a credit-risk premium and adjusted for a liquidity and country-risk premium. All other variable payments are recognized as an expense. The lease liability is subsequently measured using the effective interest method.

The cost of the right-of-use asset comprises: the amount of the initial measurement of the lease liability; any lease payments made at or before the commencement date, less any lease incentives received from the lessor; any initial direct costs incurred for obtaining the lease; the costs for preparing the leased asset for its intended use; and an estimate of any future dismantling and restoration costs. The right-of-use asset is subsequently depreciated on a straight-line basis over the lease term and, if applicable, reduced by any impairment losses. If ownership of the leased asset is transferred to the lessee at the end of the lease term, or if it is reasonably certain that a purchase or put option will be exercised, the right-of-use asset is depreciated from the commencement date to the end of the useful life of the underlying asset.

The lease term is the period during which it is reasonably certain that an underlying asset will be used by the lessee. The lease term includes the non-cancelable period of a lease together with periods covered by options to extend the lease, if their exercise is reasonably certain, and periods covered by termination options, if it is reasonably certain that the termination option will not be exercised. This estimate is reassessed either upon the occurrence of an event or a significant change in circumstances that is within the control of the lessee and affects a change in lease term. The lease term will be revised if an extension option not previously included in the entity's determination of the lease term is exercised or a termination option not previously included in the entity's determination of the lease term is not exercised. The revision of the lease term leads to a change in the future series of lease payments and therefore to a remeasurement of the lease liability using a revised current discount rate. The amount of the remeasurement of the lease liability is recognized outside profit or loss as an adjustment to the right-of-use asset. Derecognition amounts that exceed the carrying amount of the right-of-use asset are recognized as an expense in profit or loss.

A lease modification that substantially increases the scope of the original lease is accounted for as a separate lease if both the lessee is granted an additional right to use one or more underlying assets and the consideration for the lease increases by an amount commensurate with the stand-alone price for the increase in scope that the lessee would otherwise have to pay for use if it had leased these assets from a third party under a separate lease.

For lease modifications that increase the scope of a lease but are not accounted for as a separate lease, the required remeasurement of the lease liability is accounted for outside profit or loss as an adjustment to the carrying amount of the right-of-use asset and the lease liability for the existing lease. If a lease modification decreases the scope of the lease, the lessee also remeasures both the right-of-use asset and the lease liability and recognizes any gain or loss in profit or loss. The modified amounts are measured at the modification date with a revised discount rate.

Lessor. If a lease does not transfer substantially all risks and rewards incidental to ownership of an underlying asset to the lessee **(operating lease),** the leased asset is recognized in the statement of financial position by the lessor. Measurement of the leased asset is then based on the accounting policies applicable to the underlying asset. The lease payments received are recognized as revenue in profit or loss by the lessor. Contractually defined future changes in the lease payments during the term of the lease are recognized as lease revenue on a straight-line basis over the lease term, which is assessed at the commencement date of the contract. Where extension options exist, the exercise of those extension options that are reasonably certain is initially taken into account at the time the lease is concluded. If, contrary to the original expectation, these options are exercised or not exercised during the lease term, the previously assessed term will be revised and taken into account in the recognition of future lease revenue from operating lease transactions.

If substantially all risks and rewards incidental to ownership of the underlying leased asset are transferred to the lessee **(finance lease)**, the lessor recognizes at the commencement date, in place of the leased asset, a finance lease receivable at an amount equal to the net investment in the lease. The net investment in the lease is defined as the difference between the gross investment in the lease and the unearned finance income. The lease payments made by the lessees are split into an interest component and a principal component using the effective interest method. In subsequent measurement, the lease receivable is reduced by the principal lease payments received. The interest component of the payments received is recognized as finance income over the lease term in the income statement.

Under business models in which Deutsche Telekom is classified as a manufacturer or dealer lessor within the meaning of IFRS 16, revenue from finance leases is recognized at the date at which the asset is made available for use to the lessee at the fair value of the underlying leased asset or, if lower, the present value of the payments including any guaranteed residual value and presented as lease revenue. The selling profit or loss from the finance lease is realized in the amount of the difference between the revenue and the carrying amount of the underlying asset less the present value of the unguaranteed residual value. The finance income (interest income) is subsequently also presented as lease revenue.

For sale and leaseback transactions, if there is a transfer of control within the meaning of IFRS 15, Deutsche Telekom as the seller-lessee measures the right-of-use asset arising from the leaseback at the proportion of the previous carrying amount of the asset that relates to the right of use retained by the seller-lessee. Any gain or loss that relates to the rights transferred to the buyer-lessor is recognized in profit or loss. If there is no transfer of control, the seller-lessee recognizes the transaction as a financing transaction. While the transaction is legally subject to a lease contract, it is not accounted for as a lease and the underlying asset is not derecognized.

Share-based payment programs

Equity-settled share-based payment transactions are measured at fair value on the grant date. The fair value of the obligation is recognized as personnel costs over the vesting period and offset against capital reserves. For equity-settled share-based payment transactions, the fair value is determined using internationally accepted valuation techniques, such as the Black-Scholes model or the Monte Carlo model. For cash-settled share-based payment transactions, the goods and services acquired and the liability incurred are recognized at the fair value of the liability. The fair value of the liability has to be newly determined at each reporting date and at the settlement date, and the changes in the fair value have to be recognized in profit and loss, until the liability is settled.

Net revenue, contract assets and liabilities/contract costs

Revenues include all revenues from the ordinary business activities of Deutsche Telekom. Ordinary activities do not only refer to the core business but also to other recurring sales of goods or rendering of services. However, gains from sales of items of property, plant and equipment or intangible assets are not classified as revenue but as other operating income. All ancillary income in connection with the delivery of goods and rendering of services in the course of an entity's ordinary activities is also presented as revenue. Examples include dunning fees, contractual penalties, and default interest. Income from interest added back from long-term customer receivables and contract assets is also considered ancillary income in the course of an entity's ordinary activities where the underlying receivables or contract assets have resulted in the recognition of revenue. Revenues are recorded net of value-added tax and other taxes collected from customers that are remitted to governmental authorities. They are recognized in accordance with the provision of goods or services, provided that collectability of the consideration is probable. For service contracts with a continuous service provision, the contractually agreed total consideration is recognized as revenue on a straight-line basis over the minimum contract term, regardless of the payment pattern.

A contract asset must be recognized when Deutsche Telekom recognized revenue for fulfillment of a contractual performance obligation before the customer paid consideration or before – irrespective of when payment is due – the requirements for billing and thus the recognition of a receivable exist.

A contract liability must be recognized when the customer paid consideration or a receivable from the customer is due before Deutsche Telekom fulfilled a contractual performance obligation and thus recognized revenue. In a customer contract, contract liabilities must be set off against contract assets.

Multiple-element arrangements involving the delivery or provision of multiple products or services must be separated into distinct performance obligations, each with its own separate revenue contribution that is recognized as revenue on fulfillment of the obligation to the customer. At Deutsche Telekom, this especially concerns the sale or lease of a mobile handset or other telecommunications equipment combined with the conclusion of a mobile or fixed-network telecommunications contract. The total transaction price of the bundled contract is allocated among the individual performance obligations based on their relative – possibly estimated – standalone selling prices, i.e., based on a ratio of the standalone selling price of each separate element to the aggregated standalone selling prices of the contractual performance obligations. As a result, the revenue to be recognized for products (often delivered in advance) such as mobile handsets that are sold at a subsidized price in combination with a long-term service contract is higher than the amount billed or collected. This leads to the recognition of what is known as a contract asset – a receivable arising from the customer contract that has not yet legally come into existence – in the statement of financial position. The contract asset is reversed and reduced over the remaining minimum contract period, reducing revenue from the other performance obligations (in this case: mobile service revenues) compared with the amounts billed. In contrast to the amounts billed, this results in higher revenue from the sale of goods and merchandise and lower revenue from the provision of services.

Customer activation fees and other advance one-time payments by the customer that do not constitute consideration for a separate performance obligation are deferred as contract liabilities and recognized as revenue over the minimum contract term or, in exceptional cases (e.g., in the case of contracts that can be terminated at any time) over the expected contract period. The same applies to fees for installation and set-up activities that do not have an independent value for the customer.

As distinct from promotional offers, options to purchase additional goods or services free of charge or at a discount are separate performance obligations (material rights) for which part of the revenue is deferred as a contract liability until the option is exercised or expires, providing the discount on future purchases is an implicit component of the consideration for the current contract and is also significant. The measure of significance is whether the decision by the (average) customer to enter into the current contract is likely to have been significantly influenced by their right to the future discount. Offers for volume discounts for the purchase of additional core products of an entity (e.g., a discount offered on an additional fixed-network contract for mobile customers) are considered by Deutsche Telekom as promotional offers for which customers do not (implicitly) pay as part of the current contract.

Long-term customer receivables (e.g., arising from sales of handsets in installments), contract assets (e.g., arising from the subsidized sale of a handset in connection with the conclusion of a long-term customer contract); or contract liabilities (e.g., arising from a prepayment by the customer) are recognized at present value if the financing component is significant in relation to the total contract value (i.e., including those performance obligations that do not contain a financing component). The discount rate also reflects the customer credit risk. Deutsche Telekom makes use of the option not to recognize a significant financing component if the period between when a good or service is transferred to the customer and when the customer pays for that good or service will be one year or less.

Payments to customers including credits or subsequent discounts are recognized as a reduction in revenue unless the payment constitutes consideration for a distinct good or service from the customer, for which the fair value can be reasonably estimated.

Gross vs. net presentation. In cases where a company is in an intermediary position between another supplier/vendor (e.g., manufacturer, wholesaler) and a retail customer, it must be assessed whether the company itself supplies the relevant product or provides the service requested by the customer as the principal or whether the company merely acts as the agent for the supplier. The outcome determines whether the entity can recognize revenue on a gross basis (as the principal) or on a net basis after deducting the costs to the supplier (as the agent). For Deutsche Telekom, the question arises particularly in the case of digital services (e.g., streaming services, cloud-based software as a service) purchased from third parties and sold to retail customers as part of Deutsche Telekom's product portfolio. In summary, in case of rights to another party's goods or services, Deutsche Telekom considers itself to be the principal vis-à-vis the retail customer if all of the following conditions are met and thus reports gross revenues:

- Deutsche Telekom either has a contractual enforceable right to receive the predefined services "on demand" at predefined (fixed or variable) prices, and accordingly the other party has entered into an enforceable ongoing commitment to provide them, or Deutsche Telekom has entered into a material minimum purchase commitment.
- Deutsche Telekom sells access to the other party's services in its own name and for its own account under a contract between Deutsche Telekom and the retail customer.
- Deutsche Telekom has discretion in setting the price for the other party's services sold for its own account.

Contract costs comprise the incremental costs of obtaining a contract (mainly sales commission paid to employees and third-party retailers in the direct and indirect sales channel) and the costs to fulfill a contract. These must be capitalized if it can be assumed that the costs will be compensated by future revenue from the contract. Incremental costs of obtaining a contract are additional costs that would not have been incurred had the contract not been concluded. Costs to fulfill a contract are costs relating directly to a contract that are incurred after contract inception and serve the purpose of fulfilling the contract but are incurred prior to fulfillment and cannot be capitalized under any other standard. Deutsche Telekom makes use of the option to immediately recognize contract costs whose amortization period would not be more than one year as an expense.

The capitalized contract costs are generally recognized on a straight-line basis over the estimated customer retention period. The expenses are disclosed in Deutsche Telekom's income statement, not under depreciation and amortization but – depending on the sales channel – as goods and services purchased or personnel costs.

In the indirect sales channel, third-party retailers often arrange service contracts on behalf of and for the account of Deutsche Telekom (as the agent) in connection with the sale of subsidized handsets in their own name and for their own account (as the principal). In such cases, the retailers receive commission in an amount that explicitly or implicitly compensates them for the handset subsidy granted. As in the case of multiple-element arrangements in the direct sales channel, the customer ultimately covers the handset subsidy by paying a price above the standalone selling price for the service contract. Deutsche Telekom considers this an implicit promise to the customer that on conclusion of this service contract they will be able to purchase a handset at a discounted price. The only difference between this promise and the purchase of a service in the direct sales channel is that it is not Deutsche Telekom that is granting the discount as part of a multiple-element arrangement but a third-party retailer that is compensated for it by Deutsche Telekom through the commission it receives for arranging the service contract. As, from an economic substance perspective, these payments constitute indirect payments by Deutsche Telekom to customers, the portion of the commission payments attributable to the (implicit) cost reimbursements to the retailer is not capitalized as contract costs but as a contract asset and is therefore recognized as a reduction of the service revenues over the contract term rather than as an expense. This ensures that the amount of the service revenues generated with retail customers for identical rate plans does not depend on the type of sales channel.

Depending on the business model, **revenue recognition** at Deutsche Telekom is as follows:

The **mobile and fixed-network business** of the Germany, United States, Europe, and Group Development operating segments includes mobile services, narrow- and broadband access to the fixed network and the internet, television via internet, connection and roaming fees billed to other fixed-network and mobile operators (wholesale business), and sales or lease of mobile handsets, other telecommunications equipment, and accessories. Revenue generated from the use of voice and data communications as well as television via internet is recognized upon rendering of the agreed service. The services rendered relate to use by customers (e.g., call minutes), availability over time (e.g., monthly flat rates), or other agreed rate plans. Revenue and expenses associated with the sale of telecommunications equipment and accessories are recognized when the products are delivered, provided there are no unfulfilled company obligations that affect the customer's final acceptance of the arrangement. Revenue from the lease of mobile handsets and telecommunications equipment that is not considered a sale in economic terms is recognized monthly as the entitlement to the fees accrued. Advertising revenues are recognized in the period in which the advertisements are exhibited.

Trade-in rights for used handsets which are granted to customers upon contract conclusion under the condition of a new purchase transaction (including renewal of an existing service contract) do not constitute repurchase arrangements; however, if the repurchase prices exceed the fair value of the handsets these rights must be recognized as separate performance obligations for which part of the contractual revenue is deferred until they are exercised or expire.

Particularly in the mobile communications business, the timing of payments for mobile handsets purchased in connection with the conclusion of a service contract differs from the timing of the delivery and hence from revenue recognition. Where a significant financing component exists, revenue is measured at the present value. Whereas the sale of subsidized handsets in connection with the conclusion of service contracts in the consumer business is still common in the Germany operating segment and also to some extent in the Europe operating segment, handsets are not sold at a discount at all, or only to a limited extent, in the United States and to some extent in the Europe operating segments; payment-by-installment models or lease models are offered to customers instead. In both the subsidy model and the payment-by-installment model, an asset must thus be recognized at the date of revenue recognition and is generally settled over a 24-month service contract term through payments made by the customer. The only difference is that with the subsidy model it is a contract asset that is repaid through the portion of the monthly bill that exceeds the allocated monthly service revenues. By contrast, the payment-by-installment model involves an existing legal customer receivable that is settled based on an installment plan – separately from the monthly billing for telecommunications services.

The **Systems Solutions** operating segment provides, among other things, IT services and network services for corporate customers including IT outsourcing services and the sale of hardware including desktop services. Revenue from service contracts is recognized as the service is performed, i.e., normally on a pro rata basis over the contract term. Revenue from service contracts billed on the basis of time and material used is recognized at the contractual hourly rates as labor hours are delivered and direct expenses are incurred.

Revenue from hardware sales or sales-type leases is recognized when the product is shipped to the customer, provided there are no unfulfilled company obligations that affect the customer's final acceptance of the arrangement. Any costs of these obligations are recognized when the corresponding revenue is recognized.

Revenue from construction contracts and construction-type service contracts (or elements of service contracts), for which a defined output is promised (e.g., IT developments), is recognized using the percentage-of-completion method. The measure of progress or stage of completion of a contract is generally determined as the percentage of cost incurred up until the reporting date relative to the total estimated cost at the reporting date (cost-to-cost method). In particular for complex outsourcing contracts with corporate customers, a reliable estimate of the total cost and therefore of the stage of completion is not possible in many cases, so revenue is only recognized in the amount of the contract costs expensed. This means that a proportionate profit is not realized until the contract has been completed (zero-profit method).

Revenue from non-sales-type rentals and leases is recognized on a straight-line basis over the lease term.

Income taxes

Income taxes include current income taxes as well as deferred taxes. Current and deferred tax assets and liabilities must be recognized where they are probable. They are measured in accordance with the tax laws applicable or already announced as of the reporting date, provided said announcement has the effect of actual enactment. Where uncertain tax assets or uncertain tax liabilities are recognized because they are probable, these must be measured at their most probable amount. In exceptional cases the expected value is considered. Where current and deferred taxes are recognized, they must be reported as income or expense except to the extent that the tax arises from a transaction which is recognized outside profit and loss, either in other comprehensive income or directly in equity, or in connection with a business combination. Current tax assets and current tax liabilities and deferred tax assets and deferred tax liabilities are offset in the statement of financial position if Deutsche Telekom has a legally enforceable right to set off current tax assets against current tax liabilities, has an intention to settle net, and the deferred tax assets and the deferred tax liabilities relate to income taxes levied by the same taxation authority.

Current tax assets and current tax liabilities must be recognized in the amount that Deutsche Telekom expects to settle with or recover from the tax authorities. They include liabilities/receivables for the current period as well as for prior periods.

Deferred taxes are recognized for temporary differences between the carrying amounts in the consolidated statement of financial position and the tax base, as well as for tax loss carryforwards and tax credits. As an exception to this principle, a deferred tax liability is not recognized for temporary differences if the deferred tax liability arises from the initial recognition of an asset or a liability in a transaction which is not a business combination and, at the time of the transaction, affects neither IFRS accounting profit (before taxes) nor taxable profit/tax loss. Nor is a deferred tax liability recognized for temporary differences arising from the initial recognition of goodwill. A deferred tax liability is generally recognized for temporary differences associated with investments in subsidiaries, joint arrangements, and associates, unless Deutsche Telekom is able to control the timing of the reversal of the temporary difference and it is probable that the temporary differences will not reverse in the foreseeable future.

Judgments and estimates

The presentation of the results of operations or financial position in the consolidated financial statements is dependent upon and sensitive to the accounting policies, assumptions, and estimates. The actual amounts may differ from those estimates. The following critical accounting estimates and related assumptions and uncertainties inherent in accounting policies applied are essential to understand the underlying financial reporting risks and the effects that these accounting estimates, assumptions, and uncertainties may have on the consolidated financial statements.

Measurement of **property, plant and equipment, and intangible assets** involves the use of estimates for determining the fair value at the acquisition date, provided they were acquired in a business combination. Furthermore, the expected useful lives of these assets must be estimated. The determination of the fair values of assets and liabilities, as well as of the useful lives of the assets is based on management's judgment. The measurement of intangible assets acquired in barter transactions is based on management's judgment as to whether a barter transaction has commercial substance. For this, an analysis is performed to determine to what extent the future cash flows (risk, timing, and amount) are expected to change as a consequence of the transaction. Information from external experts is obtained for this analysis and for the determination of the fair values of assets.

The determination of **impairments of property, plant and equipment, intangible assets, and right-of-use assets** involves the use of estimates that include, but are not limited to, the cause, timing, and amount of the impairment. Impairment is based on a large number of factors, such as changes in current competitive conditions, expectations of growth in the telecommunications industry, increased cost of capital, changes in the future availability of financing, technological obsolescence, discontinuance of services, current replacement costs, prices paid in comparable transactions, and other changes in circumstances that may indicate an impairment. Management is required to make significant judgments concerning the identification and validation of impairment indicators, as well as the estimation of future cash flows and the determination of fair values for assets (or groups of assets), applicable discount rates, useful lives, and residual values of the relevant assets. Specifically, the estimation of cash flows underlying the fair values from the mobile business considers the continued investment in network infrastructure required to generate future revenue growth through the offering of new data products and services, for which only limited historical information on customer demand is available. If the demand for these products and services did not materialize as expected, this would result in less revenue, less cash flow, and potential impairment. In addition, when determining fair values, further planning uncertainties that reflect the risks of macroeconomic development could adversely affect future results of operations.

The determination of the **recoverable amount of a cash-generating unit** involves the use of estimates by management. Methods used to calculate the recoverable amount include discounted cash flow-based methods and methods that use market prices as a basis. The discounted cash flow valuations refer to projections that are based on financial plans that have been approved by management and are also used for internal purposes. The chosen planning horizon reflects the assumptions for short- to medium-term market developments and is selected to achieve a steady state in the business outlook that is necessary for calculating the perpetual annuity. This steady state will only be reached based on the planning horizon selected, in particular due to the sometimes long investment cycles in the telecommunications industry and the investments planned and expected in the long run to acquire and extend spectrum licenses. Cash flows beyond the internal mid-term planning are extrapolated using appropriate growth rates defined separately for each cash-generating unit. These growth rates are based on real growth and inflation expected in the long term for the countries in which the respective unit operates. To achieve the sustainable growth rates set for the period of the perpetual annuity, additional sustainable investments derived specifically for each cash-generating unit are taken into account. The key assumptions on which management has based its calculation of the recoverable amount include the following assumptions that were primarily derived from internal sources and are based on past experience and extended by current internal expectations, and that are underscored by external market data and estimates: development of revenue, customer acquisition and retention costs, churn rates, capital expenditure, market share, and growth rates. Discount rates are determined on the basis of external figures derived from the market, taking account of the risks associated with the cash-generating unit (market and country risks). Any future changes in the aforementioned assumptions could have a significant impact on the fair values of the cash-generating units. Changes in the assumptions may have a negative impact, as a result of future macroeconomic trends, continued intense competition, further possible legislation changes (e.g., as part of national austerity programs), and regulatory intervention.

Management recognizes an **allowance for doubtful accounts** to account for expected losses resulting from payment default of customers. When evaluating the adequacy of an allowance for doubtful accounts, management bases its estimates on the aging of accounts receivable balances and historical write-off experience, customer creditworthiness, and changes in customer payment terms. If the financial condition of customers were to deteriorate, actual write-offs might be higher than expected.

In each tax jurisdiction in which Deutsche Telekom operates, management must make judgments for the calculation of **current and deferred taxes**. This is relevant, for example, when it comes to a decision on recognizing deferred tax assets because it must be probable that a taxable profit will be available against which the deductible temporary differences, loss carryforwards, and tax credits can be utilized. In addition to the estimate of future earnings, various factors are used to assess the probability of the future utilization of deferred tax assets, including past results of operations, the reliability of planning, and tax planning strategies. The period used for the assessment of the recoverability depends on the circumstances at the respective Group company and typically is in a range of five to ten years.

Pension obligations for benefits to non-civil servants are generally satisfied by defined benefit plans. Pension benefit costs for non-civil servants are determined in accordance with actuarial valuations, which rely on assumptions regarding the discount rate, the expected salary increase rate, the expected pension trend, and life expectancy. In the event that changes in the assumptions regarding these parameters are required, the future amounts of the pension benefit costs may be affected materially.

Deutsche Telekom is obligated, under the German Federal Posts and Telecommunications Agency Reorganization Act (Gesetz zur Reorganisation der Bundesanstalt für Post und Telekommunikation Deutsche Bundespost), to pay for its share of any operating cost shortfalls between the income of the **Civil Service Health Insurance Fund** (Postbeamtenkrankenkasse) and benefits paid. The Civil Service Health Insurance Fund provides services mainly in cases of illness, birth, or death for its members, who are civil servants employed by or retired from Deutsche Telekom AG, Deutsche Post AG, and Deutsche Postbank AG, and their relatives. When Postreform II came into effect, participation in the Civil Service Health Insurance Fund was closed to new members. The insurance premiums collected by the Civil Service Health Insurance Fund must not exceed the insurance premiums imposed by alternative private health insurance enterprises for comparable insurance benefits, and, therefore, do not reflect the changing age distribution of the participants in the fund. Deutsche Telekom recognizes provisions in the amount of the actuarially determined present value of Deutsche Telekom's share in the fund's future deficit, using a discount rate and making assumptions about life expectancies and projections for contributions and future increases in general health care costs in Germany. Since the calculation of these provisions involves long-term projections over periods of more than 50 years, the present value of the liability may be highly sensitive even to small variations in the underlying assumptions.

Deutsche Telekom exercises considerable judgment in measuring and recognizing **provisions** and **contingent liabilities** related to pending litigation or other outstanding claims subject to negotiated settlement, mediation, arbitration, or government regulation. Judgment is necessary in assessing the likelihood that a pending claim will succeed, or a liability will arise, and to quantify the possible range of the final settlement. Provisions are recognized for losses from executory contracts, provided a loss is considered probable and can be reasonably estimated. Because of the inherent uncertainties in this evaluation process, actual losses may be different from the originally estimated provision. In addition, significant estimates are involved in the determination of provisions related to taxes and litigation risks. These estimates are subject to change as new information becomes available, primarily with the support of internal specialists or with the support of outside consultants, such as actuaries or legal counsel. Revisions to the estimates of these losses from executory contracts may significantly affect future results of operations.

Significant judgments: revenue recognition, contract assets and liabilities/contract costs

The standalone selling prices of individual products or services that are part of **multiple-element arrangements** are complex to determine, because some of the elements are price-sensitive and, thus, volatile in a competitive marketplace. In many cases, standalone selling prices can also not be observed for the company's own products. Due to the fact that comparability is generally not completely assured, the use of market prices for similar products is subject to an element of uncertainty, as is an estimate using a cost-plus-margin approach. Changes in estimates of standalone selling prices can significantly influence the allocation of the transaction price for the entire multiple-element arrangement among the individual performance obligations and therefore affect both the financial position, i.e., the carrying amount of contract assets and contract liabilities, and the current and future results of operations.

One-time payments by the customer for contracts that can be terminated at any time are recognized over an expected contract period, the length of which depends on the period over which, from a commercial perspective, the customer is expected to renew or not terminate the contract on a monthly basis.

Contract costs are deferred and generally recognized as expense over the expected duration of the customer relationship. The estimate of the expected average duration of customer retention is based on historical customer turnover. However, this is subject to fluctuations and has only limited informative value with regard to future customer behavior, particularly if new products are rolled out. If management's estimates are revised, material differences may result in the amount and timing of expenses for subsequent periods.

The significance of material rights is an estimate that is based on both quantitative and qualitative factors. This is ultimately a matter of judgment, even though it is supported by quantitative facts. Depending on the decision as to whether or not the customer has a material right to be deferred, there may be material differences in the amount and timing of revenues for the current and subsequent periods.

Gross vs. net presentation. The assessment of whether Deutsche Telekom presents revenue gross as the principal or net after deduction of costs as the agent, i.e., only in the amount of the remaining margin, requires an analysis of both the legal form and the substance of contracts. After all of the relevant facts and circumstances of the individual case have been weighed up, in many cases the decision also involves a degree of discretion, even if a uniform Group method of assessment is applied. Depending on the conclusion reached, there may be material differences in the amounts of revenues and expenses for the current and subsequent periods. This has no bearing on profit/loss from operations, however.

Judgments: extension and termination options for the lessee

Extension and termination options are included in many lease arrangements across the Deutsche Telekom Group. Local teams are responsible for negotiating contracts and managing their individual leases. As a result, lease contracts include a wide range of different terms and conditions in order to provide local management with the flexibility needed to run their business, i.e., to give them operational flexibility in terms of managing the underlying lease assets used in their operations and to allow them to react to changing business needs.

The main population of lease contracts in the Deutsche Telekom Group comprises arrangements for cell site infrastructure, land/ground underneath the infrastructure, switch sites, office buildings, and retail stores, which are mainly located in the United States and Germany. The length of the lease term in these contracts is the main factor in measuring the lease liabilities.

The majority of cell site leases in the United States have an initial non-cancelable term of five to 15 years, with several renewal options that can extend the lease term from five to 35 years. Cell site leases in Germany, on the other hand, typically have an initial non-cancelable period of one to 15 years, during which the lease cannot be terminated. After the initial period of time, the lease extends automatically if neither party terminates the lease or if Deutsche Telekom, as lessee, exercises an extension option, which is typically for five years. Leases can be extended on up to three occasions. The majority of extension options are exercisable by the relevant business units of the Deutsche Telekom Group.

In **determining the lease term**, management applies judgment and considers all facts and circumstances that create an economic incentive for Deutsche Telekom to exercise an extension option, or not to exercise a termination option. Extension options (or periods after termination options) are only included in the lease term if Deutsche Telekom is reasonably certain to exercise an option to extend the lease, or not to exercise an option to terminate the lease. The threshold for a “reasonably certain” exercise is lower than “virtually certain” and higher than “more likely than not.”

In determining the duration of leases of cell site space, land/ground, switch sites, office buildings, and retail stores, which are the most relevant lease contracts in the Deutsche Telekom Group, the following are the most relevant factors that are considered:

- Rapidly advancing and ever-changing technology in the telecommunications industry requires flexible lease contracts, i.e., management tries to minimize longer periods during which the contracts cannot be canceled.
- When determining whether an extension of a lease contract is reasonably certain, in addition to any significant penalties for terminating (or not extending) the lease, business plans and the business model are considered, e.g., cost/benefit analysis, consolidation plans for the mobile network and office facilities, new mobile network standards, significance of the property for the underlying operations, replacement or usage of additional technology, as well as the availability and cost of alternative locations.
- Often leasehold improvements can be used in alternative locations. In many cases, the costs of moving or replacing the asset or initial construction costs are not the main factor considered when determining whether to extend or not to extend the lease.
- Significant investments made in a location, e.g., construction of towers and masts on the leased land, are economic penalties typically considered when determining the lease term.

After having considered all of the factors above, for cell site contracts in the United States as of the lease commencement date, Deutsche Telekom concluded that it is generally not reasonably certain that an option to extend the lease term beyond the initial non-cancelable lease term will be exercised. For cell site contracts – including the land/ground underneath the infrastructure – in Germany, a lease term of 10 to 15 years is considered reasonably certain. Extension options after that period are typically not considered reasonably certain at commencement of the lease. Payments associated with these optional periods are not included in the measurement of the lease liabilities.

Most extension options for office and shop leases are not included in the lease liability because Deutsche Telekom could replace the leased assets without significant cost or business disruption.

Exposure to future additional cash outflows will only arise when an extension option (not determined to be reasonably certain) is exercised or when a termination option (determined to be reasonably certain) is not exercised.

After the commencement date, the likelihood of exercising an option is only reassessed if a significant event or a significant change in circumstances occurs that affects this judgment, and this is within the control of the lessee. Deutsche Telekom reassesses the lease term when an option is exercised (or not exercised) or Deutsche Telekom becomes obligated to exercise or not to exercise it.

For further information on undiscounted future lease payments, please refer to Note 13 “Financial liabilities and lease liabilities.”

Consolidation methods

Subsidiaries

Subsidiaries are companies that are directly or indirectly controlled by Deutsche Telekom. Control only exists if an investor has power over the investee, is exposed to variable returns or has rights to variable returns, and is able to use its power to affect the amount of variable returns. The existence and effect of substantive potential voting rights that are currently exercisable or convertible, including potential voting rights held by other Group companies, are considered when assessing whether an entity is controlled.

All subsidiaries are included in the consolidated financial statements, unless the costs of preparing the reporting required for inclusion by means of full consolidation would outweigh the benefits of such reporting, which is primarily the case for subsidiaries which an operating segment or the Group considers to be insignificant based on the following criterion: the sum of all unconsolidated subsidiaries must not account for more than 1 % of the Group’s total assets, revenue, profit/loss for the year, contingent assets/liabilities, and other financial obligations. If the 1 % limit is exceeded, Deutsche Telekom determines which companies are to be included in the consolidated financial statements, taking the long-term development of the investment and consolidation effects into account. Aside from the quantitative criteria, qualitative criteria will also be used to assess the materiality of an entity for the consolidated group. Excluding a subsidiary must not significantly change the segment result or the Group’s profit/loss for the year, nor may other significant trends be ignored. Subsidiaries that are not included in the consolidated financial statements due to their subordinate significance are recognized under other assets.

Income and expenses of a subsidiary are included in the consolidated financial statements from the acquisition date and remain included in the consolidated financial statements until the date on which the parent company ceases to control the subsidiary. If necessary, the subsidiaries’ accounting principles will be aligned with the uniform accounting principles applied by the Deutsche Telekom Group. Intercompany income and expenses, receivables and liabilities, and profits or losses are eliminated.

Upon loss of control, a gain or loss from the disposal of the subsidiary is recognized in the consolidated income statement in the amount of the difference between (i) the proceeds from the disposal of the subsidiary, the fair value of the remaining shares, the carrying amount of the non-controlling interests, and the cumulative amounts of other comprehensive income attributable to the subsidiary, and (ii) the carrying amount of the subsidiary’s net assets to be disposed of.

Joint operations, joint ventures, and associates

Joint arrangements, in which two or more parties have joint control over an activity, must be classified as either joint operations or joint ventures.

A **joint operation** is characterized by the fact that the parties that have joint control of the arrangement (joint operators) have rights to the assets, and obligations for the liabilities, relating to the arrangement. A joint operator shall account for the assets, liabilities, revenues and expenses relating to its interest in the joint operation as well as its share of the joint assets, liabilities, revenues, and expenses.

In a **joint venture**, on the other hand, the parties that have joint control of the arrangement (partners) have rights to the net assets of the entity. **Associates** are companies on which Deutsche Telekom has a significant influence, and that are neither subsidiaries nor joint ventures. As with joint ventures, associates are accounted for using the **equity method**.

Investments in joint ventures and associates that are included in the consolidated financial statements using the equity method are recognized at cost at the time of acquisition. The carrying amount of the investment may include goodwill as the positive difference between the cost of the investment and Deutsche Telekom's proportionate share in the fair values of the entity's identifiable net assets. If necessary, the accounting principles of joint ventures and associates will be aligned with the uniform accounting principles applied by the Deutsche Telekom Group. The carrying amount of the investment accounted for using the equity method is tested for impairment provided there are indications of impairment. If the carrying amount of the investment exceeds its recoverable amount, an impairment loss must be recognized in the amount of the difference. The recoverable amount is measured at the higher of fair value less costs of disposal and value in use.

Upon loss of significant influence, a gain or loss from the disposal of the joint venture/associate is recognized in the amount of the difference between (i) the proceeds from the disposal of the shares, the fair value of the remaining shares, and the cumulative amounts of other comprehensive income attributable to the joint venture or associate, and (ii) the carrying amount of the investment to be disposed of.

The materiality assessment for jointly controlled entities and associates is generally performed using the same methods as for subsidiaries, but is limited to the criteria of profit/loss for the year, contingent assets and liabilities, and other financial obligations.

Business combinations

A business combination exists when Deutsche Telekom obtains control of another entity. All business combinations must be accounted for using the acquisition method. The cost of an acquired subsidiary is measured at the fair value of the consideration transferred, i.e., the sum of the assets transferred, liabilities assumed, and equity instruments issued. Transaction costs are generally recognized as expense. The acquisition cost is allocated to the acquired assets, liabilities, and contingent liabilities. The identifiable assets acquired and the liabilities and contingent liabilities assumed are recognized in full at their fair values at the acquisition date, regardless of the level of the investment held by Deutsche Telekom.

Goodwill arising in a business combination is measured as the excess of the aggregate of the cost of acquisition, the amount of any non-controlling interest in the acquiree, and, in a business combination achieved in stages, the fair value of the equity interest held by Deutsche Telekom in the acquiree prior to the acquisition date over the fair value of the net assets acquired. Any difference arising on the revaluation of equity interests previously held by Deutsche Telekom is recognized in profit or loss.

For all business combinations there is an option in relation to the measurement of the non-controlling interests. These can be recognized either directly at their fair value (i.e., the non-controlling interest in the enterprise value of the acquiree) or at the non-controlling interest in the fair value of the net assets acquired. As a result, in the first case, the non-controlling interests also have a share in the goodwill arising from the business combination, while in the second case the non-controlling interest is limited to the remeasured assets and liabilities and the goodwill is therefore recognized only as the amount attributable to Deutsche Telekom.

Transactions relating to the further acquisition or sale of equity interests with other shareholders that do not affect Deutsche Telekom's controlling interest do not lead to any change in goodwill. The difference between the fair value of the consideration transferred or received (i.e., the purchase price of the interests) and the carrying amount of the equity attributable to the non-controlling interests must be offset directly against consolidated shareholders' equity in capital reserves or increases the capital reserves.

Changes in the composition of the Group and other transactions

In the 2020 financial year, Deutsche Telekom conducted the following transactions, which had or will have an impact on the composition of the Group. Other changes to the composition of the Group not shown here were of no material significance for Deutsche Telekom's consolidated financial statements.

Business combination of T-Mobile US and Sprint

Together with their respective majority shareholders Deutsche Telekom AG and SoftBank K.K., T-Mobile US and Sprint Corp. concluded a binding agreement on April 29, 2018 to combine their companies. On July 26, 2019 and on February 20, 2020, further conditions for the business combination were agreed. The transaction was consummated on April 1, 2020. Prior to this, the approvals required from the national and regional regulatory and antitrust authorities and courts in the United States had been obtained and additional closing conditions met. Most recently, on April 16, 2020, the business combination was approved by the California Public Utilities Commission (CPUC). As a consequence of the business combination, T-Mobile US took over all shares in Sprint. Sprint is a U.S. telecommunications company which offers a comprehensive range of wireless and wireline communications products and services. The "new" T-Mobile US will successfully drive forward its Un-carrier strategy and step up the 5G network build-out. This provides a much stronger basis for T-Mobile US to significantly expand nationwide coverage and to extend its mobile network capacities, which translates into clear potential for sustained customer growth. The business combination will increase the market share of the "new" T-Mobile US and is expected to generate synergies and economies of scale.

The business combination of T-Mobile US and Sprint was executed by means of a share exchange without a cash component (all-stock transaction). For every 9.75 Sprint shares held, the Sprint shareholders, with the exception of SoftBank, received one new share in T-Mobile US in return. Pursuant to a supplementary agreement dated February 20, 2020, SoftBank agreed to surrender to T-Mobile US immediately, for no additional consideration, an aggregate of 48,751,557 ordinary shares in T-Mobile US, received in connection with this transaction, such that SoftBank received one new share in T-Mobile US for every 11.31 Sprint shares. Taking these adjustments into account, a total of 373,396,310 new ordinary shares in T-Mobile US were issued to Sprint shareholders.

The preliminary consideration transferred is comprised as follows:

millions of €	Fair value at the acquisition date
T-Mobile US ordinary shares issued	28,649
+ Vested rights from share-based remuneration plans	350
+ Contingent consideration paid to SoftBank	1,721
– Payment received in relation to cost allocation from SoftBank in connection with CPUC	(93)
= Consideration transferred (preliminary)	**30,627**

Based on the closing T-Mobile US share price of USD 83.90 as of March 31, 2020 – which was the most recent publicly available closing price at the time of consummation – the total value of T-Mobile US ordinary shares issued in exchange for Sprint ordinary shares was USD 31.3 billion (EUR 28.6 billion). In addition, one component of the consideration transferred was the replacement of share-based remuneration for certain Sprint employees for services provided prior to the business combination and contingent consideration payable to SoftBank. The contingent consideration results from the agreement concluded on February 20, 2020 that if the trailing 45-day volume-weighted average price of the T-Mobile US ordinary share at any time during the period commencing on April 1, 2022 and ending on December 31, 2025 reaches or exceeds the value of USD 150.00, then T-Mobile US will issue to SoftBank for no additional consideration 48,751,557 ordinary shares, i.e., the number of shares that SoftBank surrendered to T-Mobile US in the course of the closing of the transaction. The Monte Carlo simulation method was used to measure the contingent consideration. The main inputs and assumptions are the volatility of 28.5 %, the risk-free interest rate of 0.44 %, the period for fulfillment of conditions, the 45-day volume-weighted average price per ordinary share of T-Mobile US, and the corresponding share price at the date of acquisition. Thus, the maximum value of the undiscounted contingent consideration equals the number of shares to be transferred multiplied by the price at the time the contingency is met. The consideration transferred is reduced by a pro rata reimbursement of costs by SoftBank to Deutsche Telekom related to the fulfillment of closing conditions vis-à-vis the CPUC. The financing structure was also reorganized in the course of combining the businesses of T-Mobile US and Sprint. Immediately after the transaction, liabilities of the former Sprint totaling USD 9.8 billion (around EUR 8.9 billion) were repaid, of which USD 7.4 billion (around EUR 6.8 billion) fell due pursuant to a binding change-in-control clause. The amounts repaid are included in current financial liabilities as of the date of consummation and are recognized, in the statement of cash flows as of December 31, 2020, under net cash used in investing activities (mandatory repayments) and net cash from/used in financing activities (optional repayments). Thus the total costs of the acquisition, including the mandatory repayment of financial liabilities as of the acquisition date, amounted to EUR 37.4 billion.

On completion of the transaction, Deutsche Telekom and SoftBank held approximately 43.6 % and 24.7 %, respectively, and other shareholders approximately 31.7 % of the shares in the "new" T-Mobile US. Due to a proxy agreement concluded with SoftBank and the fact that persons nominated by Deutsche Telekom hold a majority on the Board of Directors of the new company, T-Mobile US will continue to be included in the consolidated financial statements of Deutsche Telekom as a fully consolidated subsidiary.

The purchase price allocation and the measurement of Sprint's assets and liabilities at the acquisition date had not been fully finalized as of December 31, 2020. The outstanding measurement issues mainly relate to taxes and contingent liabilities.

The fair values of Sprint's acquired assets and liabilities are presented in the following table:

millions of €	Fair value at the acquisition date
Assets	
Current assets	**7,903**
Cash and cash equivalents	1,904
Trade receivables	2,929
Contract assets	141
Other financial assets	205
Other assets	364
Current recoverable income taxes	13
Inventories	602
Non-current assets and disposal groups held for sale	1,745
Non-current assets	**85,450**
Goodwill	8,684
Other intangible assets	50,297
Of which: FCC spectrum licenses	41,629
Of which: customer base	4,481
Of which: other	4,187
Property, plant and equipment	13,660
Right-of-use assets	6,287
Other financial assets	224
Deferred tax assets	6,086
Other assets	212
Assets	**93,353**
Liabilities	
Current liabilities	**18,900**
Financial liabilities	11,988
Lease liabilities	1,669
Trade and other payables	2,934
Income tax liabilities	119
Other provisions	855
Contract liabilities	249
Other liabilities	652
Liabilities associated with assets and disposal groups held for sale	434
Non-current liabilities	**43,826**
Financial liabilities	27,068
Lease liabilities	5,146
Provisions for pensions and other employee benefits	816
Other provisions	1,057
Deferred tax liabilities	9,658
Other liabilities	56
Contract liabilities	25
Liabilities	**62,726**

The acquired intangible assets mainly comprise FCC spectrum licenses and customer relationships, which were measured at fair value in the amount of EUR 41,629 million and EUR 4,481 million, respectively. Spectrum licenses were measured using the greenfield method. Under the greenfield method, the value of the intangible asset is determined using a hypothetical cash flow scenario. The scenario projects the development of an entity's operating business on the assumption that the entity owns only this intangible asset at inception. FCC spectrum licenses have an indefinite useful life. The multi-period excess earnings method was used to measure customer relationships. Under this method, the fair value of the customer base is calculated by determining the present value of earnings after tax attributable to existing customers. The expected useful life of customer relationships is eight years on average. Other intangible assets include, among other things, limited-term spectrum leases, the measurement of which includes the contractual payment obligations and also reflects the extent to which contractual terms are favorable compared to current market values. The average remaining lease term at the acquisition date was 20 years for non-cancelable leases, generally with a term of 30 years, and seven years for cancelable leases, generally with a minimum term of 10 years.

The fair value of the acquired trade and other receivables amounts to EUR 2,929 million. The gross amount of trade receivables totals EUR 3,081 million, of which EUR 152 million is expected to be bad debt.

In the fourth quarter of 2020, measurement adjustments were made to the acquired assets and liabilities, which primarily related to the following issues. The measurement of intangible assets and corresponding payment obligations arising from spectrum leases is based on the remaining minimum lease terms for a large number of individual leases as of the acquisition date. The detailed contract analyses required for this were completed as of December 31, 2020. Compared to the provisional measurement, which for simplification purposes was based on an identical maximum term of 30 years (including extension options) for all leases, this resulted in a decrease in the carrying amount of the intangible assets of EUR 0.8 billion, a decrease in the carrying amount of the financial liabilities of EUR 0.7 billion, and an increase in goodwill of EUR 0.1 billion. The measurement of certain leased cell towers was also completed, resulting in a decrease in the carrying amount of property, plant and equipment and a corresponding increase in goodwill of EUR 0.5 billion.

The acquired goodwill of EUR 8,684 million is calculated on a preliminary basis as follows:

millions of €

	Fair value at the acquisition date
Consideration transferred	30,627
– Fair value of assets acquired	(84,669)
+ Fair value of the liabilities recognized	62,726
= Goodwill	**8,684**

Non-controlling interests participated fully in the transaction by means of the share exchange. As a result of the issuance of T-Mobile US ordinary shares to the former Sprint shareholders, the total non-controlling interest increased. The preliminary carrying amount of the cumulative non-controlling interests in T-Mobile US was calculated on the basis of the revalued interests in the shareholders' equity of T-Mobile US and was EUR 34.7 billion as of April 1, 2020 (December 31, 2019: EUR 11.0 billion) based on the preliminary purchase price allocation. Since the shares issued to the former Sprint shareholders as part of the share exchange are measured at fair value, the full goodwill method was applied. The preliminary goodwill calculated using this method comprises the synergies anticipated in connection with the acquisition, expected new customer additions, and the combined workforce. No part of the recognized goodwill is deductible for income tax purposes.

Transaction-related costs totaling EUR 0.2 billion were incurred in the Group in the 2020 financial year (in the prior year: EUR 0.1 billion). These mainly comprised legal and consulting fees and are included under other operating expenses.

Deutsche Telekom's net revenue increased by EUR 18.0 billion in the reporting period due to the business combination of T-Mobile US and Sprint. Net profit for the reporting period includes an effect from Sprint's profit before income tax and before non-controlling interests of EUR 0.4 billion. If the business combination had taken place at the beginning of the 2020 financial year, net revenue and consolidated profit before non-controlling interests would have been respectively EUR 5.6 billion and EUR 0.3 billion higher than reported. These effects are based on estimates and they neither represent the actual consolidated figures of the Group if the transaction had taken place on January 1, 2020, nor do they anticipate future consolidated results.

On July 26, 2019, T-Mobile US, Deutsche Telekom, Sprint, SoftBank, and the U.S. satellite TV operator DISH Network Corp. entered into an agreement, subject to specific conditions, with the U.S. Department of Justice (DoJ), which is material for the future structure of the new T-Mobile US. Under this agreement, following the business combination of T-Mobile US and Sprint, Sprint's prepaid business was sold as part of an asset deal to DISH for around USD 1.4 billion (EUR 1.2 billion), taking into account provisional working capital purchase price adjustments. The transaction was consummated on July 1, 2020. The agreement also includes the sale of part of the 800 MHz spectrum held by Sprint to DISH for approximately USD 3.6 billion. The sale of the spectrum is subject to approval by the regulatory authority, to be applied for after three years following the closing of the business combination of T-Mobile US and Sprint, and to additional closing conditions. For two additional years following the closing of the spectrum sale, T-Mobile US will have the option to lease back, as needed, a portion of the spectrum.

On June 22, 2020, SoftBank and Deutsche Telekom agreed that SoftBank is permitted to sell 198,314,426 ordinary shares of T-Mobile US with a total value of more than USD 20 billion. The agreement ensures that Deutsche Telekom retains control of T-Mobile US. SoftBank's share is therefore reduced to approximately 8 %. In return, Deutsche Telekom receives call options from SoftBank on a total of 101,491,623 ordinary shares of T-Mobile US, which can be exercised until June 22, 2024. The subsequent sales of the shares held by SoftBank reduced the proportion of T-Mobile US shares for which Deutsche Telekom can exercise voting rights to around 52.5 % as of August 5, 2020. As of December 31, 2020, Deutsche Telekom held around 43.4 % of the shares in T-Mobile US, SoftBank around 8.6 %, and around 48.0 % were in free float. The proportion of T-Mobile US shares for which Deutsche Telekom can exercise voting rights totaled around 52.3 % as of December 31, 2020.

For further information, please refer to the section "Group organization" in the combined management report and to Note 41 "Financial instruments and risk management."

Sprint is party to a variety of agreements with Shenandoah Personal Communications Company (Shentel), pursuant to which Shentel is the exclusive provider of Sprint wireless communications network products in certain parts of several U.S. states that are home to approximately 1.1 million subscribers. Pursuant to one such agreement, Sprint was granted an option to purchase Shentel's wireless telecommunications assets. On August 26, 2020, Sprint exercised its option by delivering a binding notice of exercise to Shentel. The purchase price for the Shentel wireless telecommunications assets to be purchased by Sprint is determined through the valuation process prescribed in the agreement. On February 1, 2021, the valuation process was completed. The parties are negotiating the remaining outstanding terms of a definitive agreement to govern the purchase of Shentel's wireless telecommunication assets and expect the transaction to close in the second quarter of 2021 after satisfying customary conditions to closing. The base purchase price of the wireless telecommunication assets is USD 1.9 billion, subject to certain other purchase price adjustments prescribed by the agreement as well as additional purchase price adjustments agreed by the parties.

Acquisition of Simpel by T-Mobile Netherlands

On October 16, 2020, T-Mobile Netherlands B.V. signed an agreement for the acquisition of 100 % of the shares in Complex Bidco. B.V., including its 100 % share in the Dutch MVNO and SIM provider Simpel.nl B.V. Simpel sells SIM-only subscriptions through its own website and currently has around 1 million customers. It has been using the T-Mobile Netherlands network since 2014. On November 16, 2020, the Dutch Authority for Consumers and Markets approved the acquisition without conditions. The acquisition was closed on December 1, 2020. Complex Bidco. B.V. including Simpel.nl. B.V. has been included in Deutsche Telekom's consolidated financial statements since December 1, 2020.

The consideration transferred is comprised as follows:

millions of €	Fair value at the acquisition date
Cash payment	259
+ Fair value of the purchase option	26
+ Settlement of the pre-existing relationships	8
= Consideration transferred	**293**

The purchase option resulted from the call option agreement concluded in July 2019, which secured T-Mobile Netherlands the right to acquire 100 % of the shares in Complex Bidco. B.V. including its 100 % stake in Simpel.

The purchase price allocation and the measurement of Simpel's assets and liabilities at the acquisition date were still provisional as of December 31, 2020. The fair values of Simpel's acquired assets and liabilities recognized at the acquisition date are presented in the following table:

millions of €	Fair value at the acquisition date
Assets	
Current assets	**6**
Cash and cash equivalents	4
Trade receivables	1
Other assets	1
Non-current assets	**336**
Goodwill	196
Other intangible assets	138
Of which: customer base	114
Of which: brand	15
Of which: other	9
Property, plant and equipment	1
Deferred tax assets	1
Assets	**342**
Liabilities	
Current liabilities	**15**
Trade and other payables	4
Income tax liabilities	7
Other liabilities	4
Non-current liabilities	**34**
Deferred tax liabilities	34
Liabilities	**49**

The customer base was measured using the multi-period excess earnings method. Under this method, the fair value of the customer base is calculated by determining the present value of earnings after tax attributable to existing customers. The customer base is amortized over the remaining useful life of around 8 years. The brand was measured using the license price analogy method. Under this method, the value of the brand is calculated by making an assumption about which license costs would be notionally payable if the company did not own the relevant asset. The brand is amortized over the remaining useful life of 10 years.

The carrying amounts of the acquired receivables are based on the fair values. The gross amounts of the receivables amount to EUR 6 million. No material contingent liabilities have been identified.

The deferred tax liabilities comprise the tax effect on the temporary differences between the fair value of the different assets and liabilities on the one hand, and the respective carrying amount for tax purposes on the other.

The acquired goodwill of EUR 196 million is calculated as follows:

millions of €	Fair value at the acquisition date
Consideration transferred	293
– Fair value of assets acquired	(146)
+ Fair value of the liabilities recognized	49
= Goodwill	**196**

Deutsche Telekom uses the full goodwill method. The goodwill reflects the value of new customer additions anticipated in connection with the acquisition. No part of the recognized goodwill is deductible for income tax purposes.

Transaction-related costs totaling EUR 2 million were incurred in the Group in the 2020 financial year. These mainly comprised legal and consulting fees and are included under other operating expenses.

Deutsche Telekom's net revenue increased by EUR 10 million in the reporting period due to the acquisition. Net profit for the reporting period includes Simpel's total profit before non-controlling interests of EUR 2 million. If the business combination had taken place at the beginning of the 2020 financial year, net revenue and consolidated profit before non-controlling interests would have been respectively EUR 119 million and EUR 9 million higher than reported. These effects are based on the assumption that the fair value adjustments, determined provisionally, that arose on the date of acquisition would have been the same, if the acquisition had occurred on January 1, 2020.

The composition of the Deutsche Telekom Group changed as follows in the 2020 financial year:

	Domestic	International	Total
Consolidated subsidiaries			
January 1, 2020	61	206	267
Additions	5	171	176
Disposals (including mergers)	5	13	18
December 31, 2020	**61**	**364**	**425**
Associates accounted for using the equity method			
January 1, 2020	2	8	10
Additions	1	5	6
Disposals	0	1	1
December 31, 2020	**3**	**12**	**15**
Joint ventures accounted for using the equity method			
January 1, 2020	1	6	7
Additions	3	0	3
Disposals	0	1	1
December 31, 2020	**4**	**5**	**9**
Total			
January 1, 2020	64	220	284
Additions	9	176	185
Disposals (including mergers)	5	15	20
December 31, 2020	**68**	**381**	**449**

The following transactions will change the composition of the Deutsche Telekom Group in future.

Agreed sale of Telekom Romania Communications

On November 5, 2020, OTE concluded an agreement with Orange Romania concerning the sale of the 54 % stake in Telekom Romania Communications S.A., which operates the Romanian fixed-network business, to Orange Romania for a purchase price of EUR 268 million. The transaction is subject to approval by the authorities as well as other closing conditions.

Merger of the cell tower business in the Netherlands and set-up of an infrastructure fund

Deutsche Telekom intends to set up a fund for investments in digital infrastructure in Europe. On January 21, 2021, Deutsche Telekom, Cellnex Telecom S.A. (Cellnex), the newly established independently managed investment company Digital Infrastructure Vehicle I SCSp (DIV), and others signed an agreement to merge Deutsche Telekom's and Cellnex's respective Dutch subsidiaries for passive mobile infrastructure, T-Mobile Infra B.V. and Cellnex Netherlands B.V., (Cellnex NL) into Cellnex NL. In the first step, T-Mobile Infra B.V. is to be sold to DIV. Deutsche Telekom undertakes to invest up to EUR 400 million in DIV. Cellnex undertakes to invest up to EUR 200 million in DIV. Deutsche Telekom will receive a dividend from T-Mobile Infra B.V. of EUR 250 million and a purchase price from DIV that is more or less equivalent to Deutsche Telekom's investment commitment to DIV. In the second step, DIV is to contribute its stake in T-Mobile Infra into Cellnex NL. In return, DIV will receive a stake of around 38 % in the "new" company Cellnex NL. As a result, Deutsche Telekom will lose control over T-Mobile Infra B.V. and will initially include it in the consolidated financial statements indirectly through DIV and then as an investment accounted for using the equity method. T-Mobile Netherlands will continue in future to have full access to the transferred infrastructure by means of a long-term service agreement, primarily by leasing infrastructure components at normal market terms and conditions. The transaction is expected to be closed in the first half of 2021, following approval by the responsible antitrust authority. In future, further institutional investors in addition to Deutsche Telekom and Cellnex will be given the opportunity to buy a stake in DIV. Deutsche Telekom plans to maintain around 25 % of the fund in its target structure. Until this target structure is achieved, DIV is expected to be included in Deutsche Telekom's consolidated financial statements as a subsidiary. The assets and liabilities of T-Mobile Infra B.V. are reported in Deutsche Telekom's consolidated financial statements as of December 31, 2020 as non-current assets and disposal groups held for sale and liabilities directly associated with non-current assets and disposal groups held for sale.

For further information, please refer to Note 5 "Non-current assets and disposal groups held for sale and liabilities directly associated with non-current assets and disposal groups held for sale."

Other transactions that had no effect on the composition of the Group

OTE share buy-back

As a consequence of a share buy-back program implemented between February 25, 2019 and January 31, 2020, OTE acquired a total of 9,764,743 treasury shares with an aggregate value of EUR 120 million. The extraordinary shareholders' meeting of OTE S.A. on February 20, 2020 resolved to withdraw 9,764,743 shares from circulation with a corresponding capital reduction of around EUR 28 million. The shares were retired from the Athens Stock Exchange on March 27, 2020. As a result, Deutsche Telekom's share in OTE increased from 45.96 to 46.91 %.

Principal subsidiaries

The Group's principal subsidiaries are presented in the following table:

Name and registered office		Deutsche Telekom share %	Net revenue[a] millions of €	Profit (loss) from operations[a] millions of €	Share-holders' equity[a] millions of €	Average number of employees	Segment allocation
Telekom Deutschland GmbH, Bonn, Germany	Dec. 31, 2020/2020	100.00	22,215	4,604	7,290	3,836	Germany
	Dec. 31, 2019/2019	100.00	21,617	4,736	6,723	3,573	
T-Mobile US, Inc., Bellevue, Washington, United States[b, c]	Dec. 31, 2020/2020	43.37	61,208	9,187	59,084	65,015	United States
	Dec. 31, 2019/2019	62.85	40,420	5,488	30,327	46,544	
T-Systems International GmbH, Frankfurt/Main, Germany	Dec. 31, 2020/2020	100.00	2,462	(573)	575	8,179	Systems Solutions
	Dec. 31, 2019/2019	100.00	5,048	(362)	935	12,149	
Hellenic Telecommunications Organization S.A. (OTE), Athens, Greece[b]	Dec. 31, 2020/2020	46.91	3,878	448	2,826	16,441	Europe
	Dec. 31, 2019/2019	45.96	3,927	241	2,902	18,033	
Magyar Telekom Telecommunications Public Limited Company, Budapest, Hungary[b, c]	Dec. 31, 2020/2020	60.49	1,914	240	2,177	7,349	Europe
	Dec. 31, 2019/2019	59.72	2,049	257	2,316	8,468	
T-Mobile Netherlands Holding B.V., The Hague, Netherlands[b, c]	Dec. 31, 2020/2020	75.00	1,946	178	2,030	1,832	Group Development
	Dec. 31, 2019/2019	75.00	1,910	57	1,872	1,892	
T-Mobile Polska S.A., Warsaw, Poland[b, c]	Dec. 31, 2020/2020	100.00	1,453	87	2,111	4,117	Europe
	Dec. 31, 2019/2019	100.00	1,486	93	1,505	4,569	
T-Mobile Czech Republic a.s., Prague, Czech Republic[b, c]	Dec. 31, 2020/2020	100.00	1,072	246	1,885	3,272	Europe
	Dec. 31, 2019/2019	100.00	1,088	289	1,956	3,369	
Hrvatski Telekom d.d., Zagreb, Croatia[b, c]	Dec. 31, 2020/2020	51.71	989	81	2,199	4,957	Europe
	Dec. 31, 2019/2019	51.42	1,039	137	2,276	5,511	
T-Mobile Austria Holding GmbH, Vienna, Austria[b, c]	Dec. 31, 2020/2020	98.97	1,302	83	4,776	2,016	Europe
	Dec. 31, 2019/2019	100.00	1,276	30	3,488	2,120	
Slovak Telekom a.s., Bratislava, Slovakia[b, c]	Dec. 31, 2020/2020	100.00	773	139	1,523	3,336	Europe
	Dec. 31, 2019/2019	100.00	785	161	1,543	3,482	

[a] IFRS figures of the respective subgroup.
[b] Consolidated subgroup.
[c] Indirect shareholding of Deutsche Telekom AG.

In accordance with § 313 HGB, the full statement of investment holdings, which forms part of the notes to the consolidated financial statements, is published in the Federal Gazette (Bundesanzeiger) together with the consolidated financial statements. It is available upon request from Deutsche Telekom AG, Bonn, Investor Relations, and on Deutsche Telekom's website (www.telekom.com) under Investor Relations. Furthermore, the statement of investment holdings includes a full list of all subsidiaries that exercise simplification options in accordance with § 264 (3) HGB or disclosure simplification options in accordance with § 264b HGB.

The following table shows the non-controlling interests for principal subsidiaries:

Name and registered office		Percentage of shareholding for non-controlling interests %	Percentage of voting rights for non-controlling interests %	Cumulative non-controlling interests[a] millions of €	Dividends paid out to non-controlling interests millions of €
T-Mobile US, Inc., Bellevue, Washington, United States[b, c]	Dec. 31, 2020/2020	56.63	47.67	33,306	0
	Dec. 31, 2019/2019	37.15	37.15	11,024	0
Hellenic Telecommunications Organization S.A. (OTE), Athens, Greece[b]	Dec. 31, 2020/2020	53.09	50.00	1,317	135
	Dec. 31, 2019/2019	54.04	50.00	1,378	134
Magyar Telekom Telecommunications Public Limited Company, Budapest, Hungary[b, c]	Dec. 31, 2020/2020	39.51	39.51	600	33
	Dec. 31, 2019/2019	40.28	40.28	701	44
Hrvatski Telekom d.d., Zagreb, Croatia[b, c]	Dec. 31, 2020/2020	48.29	48.29	854	42
	Dec. 31, 2019/2019	48.58	48.58	898	54
T-Mobile Netherlands Holding B.V., The Hague, Netherlands[b, c]	Dec. 31, 2020/2020	25.00	25.00	507	0
	Dec. 31, 2019/2019	25.00	25.00	468	0

[a] IFRS figures of the respective subgroup.
[b] Consolidated subgroup.
[c] Indirect shareholding of Deutsche Telekom AG.

Deutsche Telekom held 43.37 % of the shares in T-Mobile US as of the reporting date. Due to a proxy agreement concluded with SoftBank and the fact that persons nominated by Deutsche Telekom hold a majority on the Board of Directors of the new company, T-Mobile US is being included in the consolidated financial statements of Deutsche Telekom as a fully consolidated subsidiary. The proportion of T-Mobile US shares for which Deutsche Telekom can exercise voting rights totaled around 52.3 % as of December 31, 2020.

For further information, please refer to the section “Changes in the composition of the Group and other transactions.”

Deutsche Telekom held 46.91 % plus one vote of the shares in the OTE group as of the reporting date. In accordance with shareholder agreements between Deutsche Telekom and the Hellenic Republic, Deutsche Telekom controls 50 % plus two voting shares and therefore the OTE group’s financial and operating policy. Consequently, the OTE group companies are fully consolidated subsidiaries.

Summarized financial information for subsidiaries with significant non-controlling interests:

millions of €

Name and registered office		Current assets[a]	Non-current assets[a]	Current liabilities[a]	Non-current liabilities[a]	Profit (loss)[a]	Total comprehensive income[a]
T-Mobile US, Inc., Bellevue, Washington, United States[b, c]	**Dec. 31, 2020/2020**	21,983	154,782	18,849	98,832	4,160	(2,510)
	Dec. 31, 2019/2019	10,460	73,954	19,123	34,963	3,593	3,602
Hellenic Telecommunications Organization S.A. (OTE), Athens, Greece[b]	**Dec. 31, 2020/2020**	1,787	4,917	2,093	1,785	343	327
	Dec. 31, 2019/2019	2,006	5,205	2,432	1,877	79	26
Magyar Telekom Telecommunications Public Limited Company, Budapest, Hungary[b, c]	**Dec. 31, 2020/2020**	775	3,315	873	1,041	129	(56)
	Dec. 31, 2019/2019	781	3,352	912	906	139	82
Hrvatski Telekom d.d., Zagreb, Croatia[b, c]	**Dec. 31, 2020/2020**	703	1,849	244	109	51	20
	Dec. 31, 2019/2019	817	1,906	333	114	101	94
T-Mobile Netherlands Holding B.V., The Hague, Netherlands[b, c]	**Dec. 31, 2020/2020**	704	3,769	852	1,591	157	157
	Dec. 31, 2019/2019	754	3,186	643	1,425	12	12

[a] IFRS figures of the respective subgroup.
[b] Consolidated subgroup.
[c] Indirect shareholding of Deutsche Telekom AG.

millions of €

Name and registered office		Net cash from operating activities[a]	Net cash (used in) from investing activities[a]	Net cash (used in) from financing activities[a]
T-Mobile US, Inc., Bellevue, Washington, United States[b, c]	**2020**	13,501	(14,001)	8,469
	2019	11,438	(6,997)	(4,135)
Hellenic Telecommunications Organization S.A. (OTE), Athens, Greece[b]	**2020**	1,214	(565)	(1,114)
	2019	1,121	(446)	(707)
Magyar Telekom Telecommunications Public Limited Company, Budapest, Hungary[b, c]	**2020**	525	(422)	(61)
	2019	492	(257)	(226)
Hrvatski Telekom d.d., Zagreb, Croatia[b, c]	**2020**	334	(98)	(204)
	2019	348	(181)	(219)
T-Mobile Netherlands Holding B.V., The Hague, Netherlands[b, c]	**2020**	609	(737)	148
	2019	484	(488)	(142)

[a] IFRS figures of the respective subgroup.
[b] Consolidated subgroup.
[c] Indirect shareholding of Deutsche Telekom AG.

Structured entities

Deutsche Telekom processes factoring transactions by means of structured entities.

For further information, please refer to Note 41 "Financial instruments and risk management."

Since 2014, Deutsche Telekom has consolidated four structured leasing SPEs, and since 2018 two more such SPEs, for real estate as well as operating and office equipment at two sites for the operation of data centers in Germany. The two data centers were built under the management of an external leasing company and are operated by T-Systems International GmbH. Apart from the contractual obligations to make lease payments to the leasing SPEs, Deutsche Telekom has no obligation to give them further financial support.

T-Mobile USA Tower LLC and T-Mobile West Tower LLC, which are included in the consolidated financial statements as investments accounted for using the equity method, are also structured entities.

For further information, please refer to Note 10 "Investments accounted for using the equity method."

Joint operations

On the basis of a contractual arrangement concluded by T-Mobile Polska S.A., Deutsche Telekom combined the activities for the planning, building, and operation of the Polish mobile communications network with a partner in 2011 to generate savings. Deutsche Telekom recognizes its share (50 %) of the corresponding assets in line with the economic substance in the consolidated statement of financial position.

Currency translation

Foreign-currency transactions are translated into the functional currency at the exchange rate at the date of transaction. At the reporting date, monetary items are translated at the closing rate, and non-monetary items are translated at the exchange rate at the date of transaction. Exchange rate differences are recognized in profit or loss.

The assets and liabilities of Group entities whose functional currency is not the euro are translated into euros from the local currency using the middle rates at the reporting date. The income statements and corresponding profit or loss of foreign-currency denominated Group entities are translated at monthly average exchange rates for the period. The differences that arise from the use of both rates are recognized directly in equity.

The exchange rates of certain significant currencies changed as follows:

€	Annual average rate			Rate at the reporting date	
	2020	2019	2018	Dec. 31, 2020	Dec. 31, 2019
100 Czech korunas (CZK)	3.78060	3.89551	3.87824	3.81076	3.93593
100 Croatian kuna (HRK)	13.26560	13.48050	13.48050	13.24500	13.43960
1,000 Hungarian forints (HUF)	2.84691	3.07429	3.13607	2.74454	3.02481
100 Macedonian denars (MKD)	1.62187	1.62726	1.62440	1.62246	1.62299
100 Polish zlotys (PLN)	22.51210	23.26470	23.46130	21.93370	23.49380
1 U.S. dollar (USD)	0.87553	0.89326	0.82946	0.81510	0.89055

Coronavirus pandemic

The coronavirus pandemic has developed into a global economic crisis in 2020 and will continue to shape its course in 2021. Higher demand for certain telecommunications services means the impact of the crisis is being felt less severely by the telecommunications industry than by other industries. Business activities and thus the results of operations and financial position of Deutsche Telekom were impacted by the coronavirus pandemic in various business areas, affecting revenue and earnings, although not to any significant extent. For example, temporary travel restrictions have resulted in lower roaming and visitor revenues. Our terminal equipment business is also beginning to feel the squeeze. Likewise, the impact has been felt in the corporate customer business: together with the development of traditional IT business, which fell short of expectations during the year, the coronavirus crisis resulted in the recognition of an impairment loss on non-current assets in the Systems Solutions operating segment in the third quarter of 2020. On the other hand, Deutsche Telekom recorded an increase in the volume of voice calls, both in mobile communications and in the fixed network. At this time, we can report only very minor repercussions with respect to payment defaults and customer numbers.

The coronavirus pandemic resulted in expenses of EUR 0.4 billion in the financial year, primarily at T-Mobile US, which were recorded as special factors. These expenses mainly comprise additional salary components for employees, commissions for indirect sales, and cleaning expenses and are recognized under goods and services purchased, personnel costs, and other operating expenses.

Nevertheless, there is still uncertainty regarding the extent to which business activities and thus the results of operations and financial position of Deutsche Telekom could be affected overall depending on how the pandemic develops. Possible future effects on the measurement of individual assets and liabilities are being analyzed on an ongoing basis. Possible factors could include the introduction of new travel restrictions, the closure of Telekom Shops, disrupted supply chains, further declines in roaming and visitor volumes, falling terminal equipment sales, or a drop in the number of new contracts being taken out. In addition, corporate customer business may decline further, for example, due to delayed or changed customer decisions. The possibility of an increase in the number of consumers and business customers defaulting on their payments cannot be ruled out either. Deutsche Telekom has put in place cost-saving measures to mitigate potential effects on earnings.

Notes to the consolidated statement of financial position

1 Cash and cash equivalents

Cash and cash equivalents have an original maturity of less than three months and mainly comprise fixed-term bank deposits. They also include small amounts of cash-in-hand and checks. Deutsche Telekom obtained cash collateral of EUR 1,530 million (December 31, 2019: EUR 1,273 million) on the basis of collateral contracts as surety for potential credit risks arising from derivative transactions. Cash and cash equivalents increased by EUR 7.5 billion to EUR 12.9 billion.

For further information, please refer to Note 35 "Notes to the consolidated statement of cash flows."

As of December 31, 2020, Deutsche Telekom reported cash and cash equivalents of EUR 38.0 million held by subsidiaries in North Macedonia (December 31, 2019: EUR 30.0 million). These subsidiaries are subject to foreign exchange controls or other legal restrictions. As a result, the cash balances are not fully available for use by the parent or other Group companies.

2 Trade receivables

Trade receivables increased by EUR 2.7 billion to EUR 13.5 billion Receivables increased by EUR 2.9 billion as of April 1, 2020 in connection with the inclusion of Sprint. Exchange rate effects, primarily from the translation from U.S. dollars into euros, reduced the carrying amount. Excluding this effect, receivables in the United States operating segment increased, mainly due to higher receivables from wholesale partners – in particular as a consequence of the sale of Sprint's prepaid business to DISH – and higher receivables under the Equipment Installment Plan – primarily as a result of the market launch of higher-priced devices in the fourth quarter of 2020. In the Germany operating segment, receivables increased as a result of the contractual termination of a revolving factoring agreement for receivables from consumers and business customers. By contrast, receivables in the Europe operating segment decreased, among other factors, on account of the agreed sale of Telekom Romania Communications S.A., which operates the Romanian fixed network business. This entity's receivables were reclassified as of December 31, 2020 to non-current assets and disposal groups held for sale. Of the total of trade receivables, EUR 11,473 million (December 31, 2019: EUR 9,074 million) is due within one year.

For information on allowances, credit ratings, and write-offs of receivables as well as on factoring agreements, please refer to Note 41 "Financial instruments and risk management."

3 Contract assets

Contract assets increased from EUR 1.9 billion in the prior year to EUR 2.0 billion as of December 31, 2020 primarily due to the change in the composition of the Group in connection with the business combination of T-Mobile US and Sprint.

Contract assets relate to receivables that have not yet legally come into existence, which arise from the earlier – as compared to billing – recognition of revenue, in particular from the sale of goods and merchandise under long-term multiple-element arrangements (e.g., mobile contract plus handset). Receivables from long-term construction contracts are also recognized under contract assets. Of the total contract assets, EUR 0.1 billion related to contract assets in connection with long-term construction contracts (December 31, 2019: EUR 0.1 billion).

No significant adjustments were made to contract assets in the reporting year as a result of contractual amendments. Contract assets increased by EUR 80 million in the prior year, due to a change in the business model in Poland in September 2018: whereas the previous business model did not provide for devices to be sold at a discount, the terminal equipment business has been subsidized since then.

For information on allowances on contract assets, please refer to Note 41 "Financial instruments and risk management."

4 Inventories

millions of €	Dec. 31, 2020	Dec. 31, 2019
Raw materials and supplies	49	50
Work in process	23	18
Finished goods and merchandise	2,623	1,500
	2,695	**1,568**

The carrying amount of inventories increased by EUR 1.1 billion compared to December 31, 2019 to EUR 2.7 billion, mainly on account of the inventories of Sprint transferred in connection with the business combination. Write-downs of EUR 42 million (2019: EUR 20 million, 2018: EUR 42 million) on the net realizable value were recognized in profit or loss in 2020. The carrying amount of inventories expensed during the reporting period was EUR 16,693 million (2019: EUR 14,340 million; 2018: EUR 14,373 million).

Finished goods and merchandise primarily comprise retail products (e.g., terminal equipment and accessories) not manufactured by Deutsche Telekom and services rendered but not yet invoiced, primarily to business customers.

5 Non-current assets and disposal groups held for sale and liabilities directly associated with non-current assets and disposal groups held for sale

As of December 31, 2020, current assets recognized in the consolidated statement of financial position included EUR 1.1 billion (December 31, 2019: EUR 0.1 billion) in non-current assets and disposal groups held for sale. Current liabilities in the consolidated statement of financial position included liabilities directly associated with non-current assets and disposal groups held for sale of EUR 0.4 billion as of December 31, 2020 (December 31, 2019: EUR 29 billion). The increase in the carrying amounts of assets and liabilities resulted from the transactions described below. Real estate in the Group Headquarters & Group Services segment was sold in 2019.

millions of €	Dec. 31, 2020					Dec. 31, 2019		
	Telekom Romania Communications S.A.	T-Mobile Infra B.V.	T-Mobile US spectrum	Other	Total	Deutsche Telekom AG	Other	Total
Non-current assets and disposal groups held for sale								
Cash and cash equivalents	73				**73**	0	0	**0**
Trade receivables	120			1	**121**	0	0	**0**
Inventories	10				**10**	0	0	**0**
Other current assets	76	9		2	**87**	0	35	**35**
Intangible assets	32	259	39		**330**	0	0	**0**
Of which: goodwill		259			**259**			**0**
Property, plant and equipment	176	123		8	**307**	50	12	**62**
Right-of-use assets	102	34			**136**			**0**
Investments accounted for using the equity method					**0**			**0**
Deferred tax assets					**0**	0	0	**0**
Other non-current assets	17			32	**49**			**0**
Total	**606**	**425**	**39**	**43**	**1,113**	**50**	**47**	**97**
Liabilities directly associated with non-current assets and disposal groups held for sale								
Trade and other payables	155	3			**158**	0	29	**29**
Income tax liabilities		4			**4**			**0**
Other current provisions	14				**14**			**0**
Other current liabilities	71	22		2	**95**			**0**
Provisions and similar obligations	11				**11**			**0**
Other non-current provisions	1	35			**36**	0	0	**0**
Deferred tax liabilities		3			**3**			**0**
Other non-current liabilities	43	85			**128**			**0**
Total	**295**	**152**	**0**	**2**	**449**	**0**	**29**	**29**

As of December 31, 2020, the carrying amounts include the reclassified assets and liabilities of Telekom Romania Communications S.A. (TKR), which operates the Romanian fixed-network business in the Europe operating segment. They also include the assets and liabilities of the Dutch company T-Mobile Infra B.V., which is assigned to the Group Development operating segment. Both these companies were classified as held for sale as of December 31, 2020 on account of the specific intention to sell them.

The assets and liabilities of both companies were measured at the lower of the carrying amount and fair value less costs of disposal. The recoverable amounts were determined on the basis of the sale agreements concluded with the contracting parties (Level 1 inputs). An expert opinion was obtained to determine the fair values of TKR's individual assets. The agreed sale of TKR resulted in the course of the year in a reversal of impairment losses recognized in the past on property, plant and equipment of EUR 50 million.

For further information on the reversal of impairment losses, please refer to Note 7 "Property, plant and equipment."

For further information on the two agreed transactions, please refer to the section "Changes in the composition of the Group and other transactions."

On November 4, 2020, a transaction was agreed between T-Mobile US and a competitor for the exchange of mobile spectrum licenses in order to improve mobile network coverage. The measurement uses parameters for which there are no observable market parameters (Level 3).

In addition, Deutsche Telekom AG's real estate held for sale of EUR 2 million as of December 31, 2020 (December 31, 2019: EUR 6 million) was no longer recognized at its carrying amounts in accordance with IFRS 5, but at its fair value less costs of disposal. This real estate relates to sites that are no longer considered necessary for operations or that will, in the foreseeable future, no longer be considered necessary for operations on account of technological advances. The fair values are determined by external experts. The fair value is measured on a regular basis using the earnings value method, taking into account local market estimates and specific characteristics of the property, including input parameters that cannot be observed in the market (Level 3). The expected costs of disposal (currently usually around 10 % of the fair value) are subtracted. The real estate was written down by EUR 1 million (2019: EUR 5 million) to the fair value less costs of disposal. The expense was recognized under depreciation, amortization and impairment losses.

No reversals of impairments of the carrying amounts of the non-current assets and disposal groups held for sale were recognized either in the reporting year or in the prior year.

6 Intangible assets

millions of €

	Internally generated intangible assets	Acquired intangible assets		
		Total	Acquired concessions, industrial and similar rights and assets	LTE licenses
Cost				
At December 31, 2018	**7,371**	**78,275**	**1,427**	**6,232**
Adjustment resulting from the change in accounting standards	0	(68)	0	0
Currency translation	94	932	6	(9)
Changes in the composition of the Group	47	414	2	182
Additions	344	4,113	159	0
Disposals	(802)	(1,293)	(60)	0
Change from non-current assets and disposal groups held for sale	(3)	0	0	0
Reclassifications	1,148	1,313	8	(1)
At December 31, 2019	**8,200**	**83,687**	**1,542**	**6,404**
Adjustment resulting from the change in accounting standards	0	0	0	0
Currency translation	(529)	(10,209)	(52)	(138)
Changes in the composition of the Group	292	49,575	243	0
Additions	448	2,752	149	259
Disposals	(723)	(11,362)	(134)	(20)
Change from non-current assets and disposal groups held for sale	0	(317)	0	0
Reclassifications	1,506	2,640	53	284
At December 31, 2020	**9,195**	**116,766**	**1,801**	**6,789**
Accumulated amortization and impairment losses				
At December 31, 2018	**(4,762)**	**(30,585)**	**(857)**	**(1,870)**
Adjustment resulting from the change in accounting standards	0	39	0	0
Currency translation	(65)	(181)	(4)	5
Changes in the composition of the Group	0	0	0	0
Additions (amortization)	(1,143)	(3,588)	(266)	(429)
Additions (impairment)	(2)	(73)	0	0
Disposals	801	1,293	60	0
Change from non-current assets and disposal groups held for sale	2	0	0	0
Reclassifications	(3)	(14)	2	0
Reversal of impairment losses	0	0	0	0
At December 31, 2019	**(5,171)**	**(33,110)**	**(1,066)**	**(2,294)**
Adjustment resulting from the change in accounting standards	0	0	0	0
Currency translation	356	1,282	28	49
Changes in the composition of the Group	0	6	0	0
Additions (amortization)	(1,432)	(5,039)	(377)	(436)
Additions (impairment)	(180)	(252)	(4)	(99)
Disposals	723	11,357	132	20
Change from non-current assets and disposal groups held for sale	0	248	0	0
Reclassifications	(2)	(6)	(25)	0
Reversal of impairment losses	0	1,605	0	0
At December 31, 2020	**(5,707)**	**(23,908)**	**(1,311)**	**(2,759)**
Net carrying amounts				
At December 31, 2019	3,029	50,577	477	4,110
At December 31, 2020	**3,488**	**92,858**	**490**	**4,030**

Acquired intangible assets					Goodwill	Advance payments and intangible assets under development	
UMTS licenses	GSM licenses	FCC licenses (T-Mobile US)	5G licenses	Other acquired intangible assets			Total
9,935	**1,377**	**40,443**	**0**	**18,862**	**30,410**	**2,383**	**118,439**
0	0	0	0	(68)	0	0	(68)
3	2	807	0	124	225	13	1,264
0	0	0	0	230	162	15	638
0	0	1,033	2,237	684	0	2,192	6,649
0	(2)	0	0	(1,230)	0	(30)	(2,124)
0	0	0	0	0	0	0	(3)
0	13	0	0	1,294	0	(2,413)	48
9,937	**1,390**	**42,283**	**2,237**	**19,895**	**30,796**	**2,161**	**124,844**
0	0	0	0	0	0	0	0
(21)	(15)	(8,215)	0	(1,768)	(2,270)	(93)	(13,100)
0	0	41,629	0	7,703	8,867	565	59,300
0	0	1,107	387	851	0	3,635	6,836
(8,541)	(128)	0	(29)	(2,510)	0	(224)	(12,308)
0	0	(68)	0	(249)	(279)	0	(596)
0	0	0	41	2,262	0	(4,082)	63
1,375	**1,247**	**76,736**	**2,635**	**26,184**	**37,115**	**1,962**	**165,038**
(8,663)	**(711)**	**(4,149)**	**0**	**(14,335)**	**(18,143)**	**0**	**(53,489)**
0	0	0	0	39	0	0	39
(2)	(2)	(82)	0	(96)	(218)	0	(464)
0	0	0	0	0	0	0	0
(580)	(58)	0	(13)	(2,242)	0	0	(4,731)
0	0	0	0	(73)	0	0	(74)
0	2	0	0	1,230	0	0	2,094
0	0	0	0	0	0	0	2
0	(13)	0	0	(3)	0	0	(17)
0	0	0	0	0	0	0	0
(9,244)	**(781)**	**(4,232)**	**(13)**	**(15,480)**	**(18,360)**	**0**	**(56,641)**
0	0	0	0	0	0	0	0
17	11	345	0	831	1,070	0	2,708
0	0	0	0	6	0	0	6
(579)	(55)	0	(71)	(3,523)	0	0	(6,472)
(24)	0	(29)	0	(96)	(26)	(67)	(525)
8,541	128	0	29	2,507	0	5	12,085
0	0	29	0	219	20	0	268
0	0	0	0	19	0	0	(8)
0	0	1,604	0	1	0	0	1,605
(1,289)	**(697)**	**(2,282)**	**(55)**	**(15,515)**	**(17,295)**	**(62)**	**(46,972)**
692	608	38,051	2,223	4,415	12,436	2,161	68,202
85	**550**	**74,454**	**2,580**	**10,668**	**19,819**	**1,900**	**118,066**

The carrying amount of intangible assets increased by EUR 49.9 billion to EUR 118.1 billion, primarily due to the following effects: Effects from changes in the composition of the Group of EUR 59.3 billion in connection with the acquisitions of Sprint and Simpel contributed to this increase, which also includes preliminary goodwill arising from the transactions; EUR 8.7 billion from the Sprint transaction and EUR 0.2 billion from the Simpel transaction. Additions of EUR 6.8 billion also increased the carrying amount. They mainly related to investments in the United States, Europe, and Germany operating segments, primarily for the development of network software. The carrying amount was furthermore increased by investments in internally generated and purchased software in the Group Headquarters & Group Services segment. This also includes, in the United States operating segment, FCC spectrum licenses of EUR 1.1 billion – primarily acquired at a spectrum auction that ended in March 2020 – and in the Group Development and Europe operating segments, spectrum licenses totaling EUR 0.6 billion – mainly in the Netherlands, Hungary, Greece and Austria. Amortization of EUR 6.5 billion, negative exchange rate effects of EUR 10.4 billion, mainly from the translation of U.S. dollars into euros, and disposals of EUR 0.2 billion, primarily from the derecognition of billing software for postpaid customers in the United States, which was still in development, reduced the carrying amount. Due to the migration of Sprint contract customers to the T-Mobile US billing software, it was decided that this software was not suitable for the joint customer base and would not be put into operation. In connection with the intention to sell T-Mobile Infra B.V. and Telekom Romania Communications S.A., both companies were classified as held for sale as of December 31, 2020. As a result, the carrying amount declined by EUR 0.3 billion overall. Furthermore, the carrying amount of intangible assets was increased by EUR 1.6 million as a result of the following reversal of impairment losses and was reduced by EUR 0.5 billion overall by the following impairment losses.

For further information on the business combinations, please refer to the section "Changes in the composition of the Group and other transactions."

Reversal of impairment losses recognized in prior years on FCC licenses in the United States operating segment. The partial reversal of impairment losses on FCC licenses previously acquired by T-Mobile US increased the carrying amount of intangible assets by EUR 1.6 billion before deferred taxes. These FCC licenses were impaired as of September 30, 2012 following ad hoc impairment testing of the United States cash-generating unit. As the impairment of the FCC licenses related entirely to the PCS licenses, only these licenses are subject to the reversal of the impairment loss. Regular assessments had to be made in subsequent periods to determine whether the reasons for impairment still existed – in full or in part. The fair value less costs of disposal of the United States cash-generating unit derived from the share price of T-Mobile US, which has been listed since 2013, has increased significantly over the last few years and exceeded its carrying amount. However, the reversal is limited to the lower of the recoverable amount of the impaired spectrum licenses determined by the fair value less costs of disposal on the one hand and the acquisition cost of these licenses on the other. An initial reversal of the impairment loss in the amount of EUR 1.7 billion (before deferred taxes) was recognized in the third quarter of 2017, which was indicated back then by the results of the 600 MHz spectrum auction completed in 2017.

The measurement of Sprint's FCC licenses at fair value in connection with the purchase price allocation following the business combination of T-Mobile US and Sprint effective April 1, 2020 indicated a further increase in the PCS licenses' value. This triggered a remeasurement of the PCS licenses held by T-Mobile US, which was performed by using a market approach. The value was calculated on the basis of Level 2 inputs in accordance with the fair value hierarchy under IFRS 13. The market approach on which the remeasurement was based drew on market prices from comparable auctions and secondary market transactions, as well as analyst estimates. Analyst estimates were used because they included estimated market values for the individual frequency ranges of mobile companies in the United States. These analyst estimates also covered T-Mobile US' PCS licenses. Transactions for PCS and AWS spectrum were included to the extent that they related to similar frequency ranges and a comparable population density. Multipliers were derived from these market prices for the price in U.S. dollars per MHz per member of the population (price per MHz/pop). Based on the bandwidth of observable multipliers, a multiplier of USD 1.84 per MHz/pop, derived from current analyst estimates and past transactions, was used to derive the fair value of T-Mobile US' PCS licenses. A recoverable amount of USD 18.1 billion (EUR 14.7 billion) was calculated from this for the FCC licenses previously impaired. Taking the carrying amount of USD 16.1 billion (EUR 13.1 billion) into account, a partial reversal of the impairment losses of USD 2.0 billion (EUR 1.6 billion) was recorded under other operating income.

Impairment loss recognized in connection with the realignment of the B2B telecommunications business in the Germany operating segment. As part of the realignment of the B2B telecommunications business, the assets and liabilities assigned to the relevant business areas were transferred to the Germany operating segment, primarily from the Systems Solutions and Europe operating segments. The goodwill previously allocated to the Systems Solutions and Telekom Global Carrier cash-generating units was thereby allocated in full to the telecommunications business being transferred to the Germany cash-generating unit. The realignment of the B2B telecommunications business in combination with the effects of the coronavirus pandemic triggered ad hoc impairment testing of the assets assigned to the Systems Solutions cash-generating unit, which identified a deterioration in the business outlook for IT operations. The result was the recognition of an impairment loss of EUR 470 million on non-current assets of the Systems Solutions cash-generating unit. The recoverable amount – determined as fair value less costs of disposal – was calculated at EUR -976 million, which is EUR 1,428 million lower than the carrying amount of the Systems Solutions cash-generating unit. The fair values of the individual assets were set as the lower limit for the amount of the impairment loss. EUR 299 million of the impairment loss recognized in the Systems Solutions operating segment related to intangible assets, and EUR 127 million to property, plant and equipment. Another EUR 44 million related to intangible assets in the Group Headquarters & Group Services segment that are subject to use by the Systems Solutions operating segment and are allocated to the Systems Solutions cash-generating unit for the purposes of impairment testing. An external expert opinion was obtained to determine the fair values of the individual assets. The value was calculated using Level 3 input parameters. A discount rate of 4.32 % was used.

For further information on the realignment of the B2B telecommunications business, please refer to Note 36 “Segment reporting.”

Agreed sale of Telekom Romania Communications. An ad hoc impairment test was also conducted at the Romania – Fixed network (Telekom Romania Communications S.A. (TKR)) and Romania – Mobile communications (Telekom Romania Mobile Communications S.A. (TKRM)) cash-generating units, which are assigned to the Europe operating segment. TKR operates the Romanian fixed-network business and TKRM the Romanian mobile communications business. Even though these two entities are essentially independent companies, each with their own commercial focus, the agreed sale of the fixed-network business has economic and strategic implications for the mobile business in Romania, which will remain in the Deutsche Telekom Group. For example, in the future, there will be no MVNO agreement between the two entities allowing TKR to offer FMC products to its own fixed-network customers. Furthermore, terminal equipment revenues that TKRM currently generates from sales to TKR as well as synergies arising from current joint procurement and sales activities will no longer be realized; at present, the two entities share shops, for example. Consequently, an ad hoc impairment test was conducted on TKRM’s assets, which resulted in the recognition of an impairment loss of EUR 160 million on TKRM’s non-current assets. The recoverable amount – determined as fair value less costs of disposal – was calculated at EUR 171 million, which is EUR 160 million lower than the carrying amount of TKRM. EUR 126 million of the impairment loss related to intangible assets and EUR 34 million to property, plant and equipment. An expert opinion was obtained to determine the fair values of the individual assets. The value was calculated using Level 3 input parameters. A discount rate of 7.78 % was used. No goodwill remained at the cash-generating unit Romania – Mobile communications. In the Romanian fixed-network business, the sale of TKR, planned since October 2020, resulted in a reversal of impairment losses recognized in the past on property, plant and equipment of EUR 50 million.

For further information, please refer to Note 7 “Property, plant and equipment.”

In the 2020 financial year, the **carrying amount of goodwill in cash-generating units** in the operating segments increased by EUR 7.4 billion to EUR 19.8 billion. This was the result of the following effects:

Germany operating segment. The increase in goodwill of EUR 1.2 billion compared with December 31, 2019 was mainly due to the transfer in full of the goodwill previously allocated to the Systems Solutions and Telekom Global Carrier cash-generating units completed in connection with the realignment of the B2B telecommunications business. In addition, the carrying amount of goodwill in the Germany cash-generating unit increased as a result of the acquisition of companies that overall are immaterial for the Germany operating segment.

United States operating segment. The increase in goodwill of EUR 7.6 billion compared with December 31, 2019 was due to an increase of EUR 8.7 billion from the business combination of T-Mobile US and Sprint, which was reduced by EUR 1.1 billion due to exchange rate effects from the translation of U.S. dollars to euros. Further acquisitions of companies were immaterial for the United States operating segment.

For further information on the business combination of T-Mobile US and Sprint, please refer to the section “Changes in the composition of the Group and other transactions.”

Europe operating segment. Changes in goodwill in the cash-generating units Poland, Hungary, Croatia, and the Czech Republic result from exchange rate effects. In Slovakia, recognized goodwill was reduced in 2020 by corporate transactions that were immaterial overall.

Group Development operating segment. The acquisition of 100 % of the shares in Complex Bidco. B.V. including its 100 % stake in the Dutch MVNO and SIM provider Simpel.nl B.V. resulted in intangible assets totaling EUR 138 million (including customer base and spectrum licenses) as well as goodwill of EUR 196 million in the Netherlands cash-generating unit at the acquisition date. The acquisition of Tele2 Netherlands in December 2019 resulted in identifiable intangible assets totaling EUR 455 million (including customer base and spectrum licenses) in addition to goodwill of EUR 109 million. The cell towers and roof-top sites of T-Mobile Netherlands were divested to the then newly-created cash-generating unit T-Mobile Infra B.V., with pro rata goodwill of EUR 259 million also being transferred to this unit at the same time. The intention, as of December 31, 2020, to sell T-Mobile Infra B.V. resulted in a reclassification of assets to non-current assets and disposal groups held for sale and an associated decline in goodwill of EUR 259 million.

For further information, please refer to the section "Changes in the composition of the Group and other transactions."

Disclosures on annual impairment tests. As of December 31, 2020, Deutsche Telekom carried out its annual impairment tests on the goodwill and intangible assets with an indefinite useful life (in particular, FCC licenses in the United States) assigned to the cash-generating units.

A need for a partial impairment of goodwill of EUR 26 million was identified in the Europe operating segment at the Montenegro cash-generating unit as of December 31, 2020 on the basis of information available at the reporting date and expectations with respect to the future development of the market and competitive environment. The need for impairment is primarily attributable to the difficult economic situation in Montenegro, which has been intensified by the coronavirus pandemic. As a result, the market has not developed as positively as originally assumed. Accordingly, an adjustment was made to the EBITDA planning to include additional need for investment, which will be reflected in lower future cashflows. The recoverable amount (prior to the deduction of net debt) for the Montenegro cash-generating unit was EUR 133 million as of December 31, 2020 (December 31, 2019: EUR 202 million). This amount was calculated on the basis of the value in use.

The recoverable amounts to be identified for the impairment tests were largely determined on the basis of the fair values less costs of disposal. With the exception of the United States cash-generating unit, these figures were calculated using a net present value approach. The main parameters are shown in the following table. The impairment test on goodwill as of December 31, 2019 did not result in any need for impairment in the cash-generating units.

The recoverable amounts at the cash-generating units Netherlands, Croatia, Montenegro, and North Macedonia were determined using the value in use. The market price of an active and liquid market (share price) of T-Mobile US was used to determine the fair value less costs of disposal in the case of the United States cash-generating unit. The measurements of all other cash-generating units are founded on projections for a ten-year projection period that are based on financial plans that have been approved by management and are also used for internal purposes.

For further information on the determination of the recoverable amounts of the cash-generating units, please refer to the section "Summary of accounting policies – Accounting policies."

The following tables provide an overview of the main factors affecting the measurement, the classification of the input parameters (levels) used to determine the recoverable amounts in accordance with IFRS 13, as well as the sensitivity calculations for the need for impairment resulting from a change in the main parameters discount rate, net cash flow, and growth rate. They show the most significant cash-generating units to which goodwill has been allocated.

		Goodwill carrying amount millions of €	Impairment millions of €	Detailed planning period years	Discount rates[a] %	Sustainable growth rate p.a. Ø in %	Level allocation of input parameters[b]
Germany	**2020**	4,964	0	10	3.49	0.0	Level 3
	2019	3,729	0	10	4.11	0.0	Level 3
United States	**2020**	8,964	0	n.a.	n.a.	n.a.	Level 1
	2019	1,332	0	n.a.	n.a.	n.a.	Level 1
Europe							
Poland	**2020**	191	0	10	5.24	2.0	Level 3
	2019	204	0	10	6.39	2.0	Level 3
Hungary	**2020**	914	0	10	6.38	2.0	Level 3
	2019	1,007	0	10	7.22	2.0	Level 3
Czech Republic	**2020**	769	0	10	5.12	2.0	Level 3
	2019	800	0	10	5.60	2.0	Level 3
Croatia	**2020**	518	0	10	5.67	2.0	Value in use
	2019	525	0	10	6.24	2.0	Value in use
Slovakia	**2020**	424	0	10	3.85	2.0	Level 3
	2019	428	0	10	4.61	2.0	Level 3
Greece	**2020**	422	0	10	5.01	2.0	Level 3
	2019	422	0	10	6.19	2.0	Level 3
Austria	**2020**	877	0	10	3.71	2.0	Level 3
	2019	877	0	10	4.39	2.0	Level 3
Telekom Global Carrier[c]	**2020**						
	2019	102	0	10	4.20	2.0	Level 3
Other[d]	**2020**	53	26	10	7,30–7,43	2.0	Value in use
	2019	78	0	10	8,03–8,06	2.0	Value in use
Systems Solutions							
Systems Solutions[c]	**2020**						
	2019	1,143	0	10	5.45	1.0	Level 3
Group Development							
Netherlands[e]	**2020**	876	0	10	3.65	0.5	Value in use
	2019	679	0	10	4.07	0.5	Value in use
Deutsche Funkturm	**2020**	259	0	10	3.74	1.0	Level 3
	2019	259	0	10	3.78	1.0	Level 3
T-Mobile Infra B.V.[e]	**2020**						
	2019	259	0	10	4.59	0.5	Value in use
Group Headquarters & Group Services							
Deutsche Telekom IT	**2020**	590	0	10	6.63	1.0	Level 3
	2019	590	0	10	7.13	1.0	Level 3
Deutsche Telekom in total	**2020**	**19,819**	**26**				
	2019	**12,436**	**0**				

[a] Discount rate consistently after taxes. The discount rate before taxes for the calculation of the value in use amounts to 6.82 % (2019: 7.47 %) for Croatia, 8.18 % to 8.27 % (2019: 8.79 % to 9.01 %) for Other, and 4.52 % (2019: 4.90 %) for the Netherlands.
[b] Level of input parameters in the case of fair value less costs of disposal.
[c] The goodwill of the Systems Solutions and Telekom Global Carrier cash-generating units was transferred in full to the Germany cash-generating unit in 2020 in connection with the realignment of the B2B telecommunications business. The prior-year comparative was not adjusted.
[d] This includes goodwill from the cash-generating units Montenegro and North Macedonia.
[e] Reclassification of goodwill to non-current assets and disposal groups held for sale due to the planned sale of T-Mobile Infra B.V.

millions of €[a]	Increase (decrease) in pro rata impairment losses in 2020					
	Decrease of discount rate by 50 basis points	Decrease of net cash flows by 5.0 %	Decrease of sustainable growth rate by 50 basis points	Increase of discount rate by 50 basis points	Increase of net cash flows by 5.0 %	Increase of sustainable growth rate by 50 basis points
Europe						
Montenegro	-7 (-35/ 7,30 %/5,74 %)	6 (-35/ 100 %/126,57 %)	4 (-35/ 2,0 %/4,24 %)	7 (-35/ 7,30 %/5,74 %)	-5 (-35/ 100 %/126,57 %)	-4 (-35/ 2,0 %/4,24 %)

[a] Where a change in the parameters results in an impairment loss, the following information is indicated in parentheses: the current amount by which the unit's recoverable amount exceeds its carrying amount, the current value of the parameter, and the value of the parameter that makes the recoverable amount of the cash-generating unit equal to the unit's carrying amount.

The sensitivity analysis of the impairment losses lists all those cash-generating units where the sensitivity analysis resulted in an impairment loss or a change in the impairment loss. The sensitivity analysis was performed separately for each parameter, i.e., a change in the impairment charge on a cash-generating unit is only determined by reducing or increasing the parameter under consideration.

Deutsche Telekom had commitments for the acquisition of intangible assets in the amount of EUR 1.1 billion (December 31, 2019: EUR 0.4 billion) as of the reporting date. The majority of this related to commitments entered into by T-Mobile US.

7 Property, plant and equipment

millions of €	Land and equivalent rights, and buildings including buildings on land owned by third parties	Technical equipment and machinery	Other equipment, operating and office equipment	Advance payments and construction in progress	Total
Cost					
At December 31, 2018	**17,963**	**130,520**	**9,437**	**4,162**	**162,082**
Transfer resulting from changes in accounting standards[a]	(1,474)	(3,067)	(16)	(2)	(4,558)
Currency translation	44	400	39	30	514
Changes in the composition of the Group	0	273	2	23	298
Additions	90	3,993	497	6,065	10,644
Disposals	(229)	(4,733)	(607)	(125)	(5,694)
Change from non-current assets and disposal groups held for sale	(51)	(4)	0	(3)	(58)
Reclassifications	177	5,502	488	(5,975)	192
At December 31, 2019	**16,522**	**132,885**	**9,839**	**4,174**	**163,421**
Transfer resulting from changes in accounting standards[a]	0	0	0	0	0
Currency translation	(562)	(4,304)	(318)	(229)	(5,413)
Changes in the composition of the Group	2,002	11,222	261	168	13,653
Additions	116	5,711	571	9,337	15,734
Disposals	(182)	(7,414)	(717)	(199)	(8,512)
Change from non-current assets and disposal groups held for sale	(131)	(1,443)	(71)	(79)	(1,723)
Reclassifications	738	8,111	679	(8,428)	1,100
At December 31, 2020	**18,503**	**144,769**	**10,244**	**4,745**	**178,261**
Accumulated depreciation and impairment losses					
At December 31, 2018	**(11,675)**	**(93,440)**	**(6,337)**	**0**	**(111,452)**
Transfer resulting from changes in accounting standards[a]	1,145	882	7	0	2,034
Currency translation	(29)	(225)	(17)	0	(271)
Changes in the composition of the Group	0	(1)	(1)	0	(2)
Additions (depreciation)	(613)	(7,362)	(911)	0	(8,886)
Additions (impairment)	(1)	(287)	(16)	(15)	(319)
Disposals	177	4,428	528	0	5,133
Change from non-current assets and disposal groups held for sale	13	4	0	3	21
Reclassifications	53	(174)	(16)	0	(137)
Reversal of impairment losses	7	0	0	0	7
At December 31, 2019	**(10,923)**	**(96,176)**	**(6,761)**	**(13)**	**(113,872)**
Transfer resulting from changes in accounting standards[a]	0	0	0	0	0
Currency translation	228	2,080	192	0	2,499
Changes in the composition of the Group	0	11	8	0	19
Additions (depreciation)	(725)	(11,787)	(985)	0	(13,496)
Additions (impairment)	(28)	(140)	(27)	(16)	(210)
Disposals	172	6,069	655	7	6,903
Change from non-current assets and disposal groups held for sale	60	1,337	64	5	1,466
Reclassifications	4	(641)	(12)	0	(649)
Reversal of impairment losses	4	48	1	0	53
At December 31, 2020	**(11,207)**	**(99,198)**	**(6,864)**	**(17)**	**(117,286)**
Net carrying amounts					
At December 31, 2019	5,599	36,710	3,079	4,161	49,548
At December 31, 2020	**7,296**	**45,571**	**3,380**	**4,728**	**60,975**

[a] Due to the introduction of accounting standard IFRS 16 “Leases,” leased assets arising from finance leases, which were previously disclosed under property, plant and equipment, were reclassified as right-of-use assets and lease liabilities as of January 1, 2019.

The carrying amount of property, plant and equipment increased by EUR 11.4 billion to EUR 61.0 billion compared with December 31, 2019, primarily due to the following effects: effects from changes in the composition of the Group in connection with the acquisition of Sprint contributed EUR 13.7 billion to this increase. Additions of EUR 15.7 billion to upgrade and build out the network in our United States operating segment and in connection with the broadband/fiber-optic build-out, the IP transformation, and mobile infrastructure in the Germany and Europe operating segments also increased the carrying amount. Depreciation of EUR 13.5 billion and negative exchange rate effects of EUR 2.9 billion, especially from the translation of U.S. dollars into euros, lowered the carrying amount. Disposals of EUR 1.6 billion, reclassifications to non-current assets and disposal groups held for sale of EUR 0.3 billion, and impairment losses of EUR 0.2 billion reduced the carrying amount. The impairment losses are primarily related to the ad hoc impairment tests described in Note 6 "Intangible assets."

Ad hoc impairment tests were conducted at the Romania – Fixed network TKR and Romania – Mobile communications TKRM cash-generating units, which are assigned to the Europe operating segment. In the Romanian fixed-network business TKR, the agreed sale of TKR resulted in a reversal of impairment losses recognized in the past on property, plant and equipment of EUR 50 million. The recoverable amount was calculated at EUR 242 million, which is EUR 50 million higher than the carrying amount of TKR. The observable market price (Level 1 input parameter/agreed purchase price) was used to determine the recoverable amount. The reversal of impairment losses was recognized as other operating income.

For further information, please refer to the section "Changes in the composition of the Group and other transactions."

For further information on depreciation and amortization, please refer to Note 27 "Depreciation, amortization and impairment losses" and Note 6 "Intangible assets."

Deutsche Telekom had commitments for the acquisition of property, plant and equipment in the amount of EUR 7.0 billion as of the reporting date (December 31, 2019: EUR 4.4 billion). Restoration obligations of EUR 0.9 billion were recognized as of December 31, 2020 (December 31, 2019: EUR 0.2 billion), mainly attributable to restoration obligations of T-Mobile US.

8 Right-of-use assets – lessee relationships

millions of €

	Land and equivalent rights, and buildings including buildings on land owned by third parties	Land and buildings from sale and leaseback transactions	Technical equipment and machinery	Other equipment, operating and office equipment	Total
Carrying amounts of right-of-use assets by class of underlying asset					
Initial application of IFRS 16 as of January 1, 2019	5,978	649	9,527	85	16,239
Currency translation	29	(1)	178	0	206
Changes in the composition of the Group	128	0	6	43	177
Additions	1,472	106	3,821	81	5,481
Disposals	(231)	(83)	(46)	(7)	(368)
Depreciation and amortization	(1,215)	(142)	(2,227)	(65)	(3,649)
Impairment losses	0	0	0	0	0
Reclassifications	3	0	(88)	(3)	(88)
At December 31, 2019	**6,163**	**529**	**11,171**	**135**	**17,998**
Currency translation	(254)	(2)	(1,849)	(6)	(2,111)
Changes in the composition of the Group	580	0	5,674	36	6,291
Additions	1,409	93	12,727	49	14,278
Disposals	(237)	(64)	(79)	(7)	(386)
Depreciation and amortization	(1,352)	(112)	(3,518)	(82)	(5,064)
Impairment losses	(1)	0	(62)	0	(63)
Reclassifications	0	0	(500)	(7)	(507)
Reversal of impairment losses	2	0	0	0	2
Change from non-current assets and disposal groups held for sale	(118)	0	(12)	(6)	(136)
At December 31, 2020	**6,193**	**445**	**23,552**	**111**	**30,302**

The carrying amount of right-of-use assets increased by EUR 12.3 billion compared to December 31, 2019 to EUR 30.3 billion, mainly due to the following effects. The change in the composition of the Group in connection with the business combination of T-Mobile US and Sprint contributed EUR 6.3 billion to this increase. Additions of EUR 14.3 billion, mainly in the United States operating segment, also increased the carrying amount. In September 2020, T-Mobile US and American Tower signed an agreement on the lease and use of cell sites. This was a modification to existing agreements with American Tower. The agreement gives T-Mobile US greater flexibility in the course of merging the mobile networks of T-Mobile US and Sprint and of the 5G network build-out. The agreement primarily provides for a contract extension until April 30, 2035 and modifies the lease payments for 20,729 existing cell sites. The lease modification resulted in an increase in the carrying amount of the right-of-use assets and the lease liabilities by EUR 9.4 billion in each case. By contrast, depreciation of EUR 5.1 billion, negative exchange rate effects of EUR 2.1 billion, and disposals of EUR 0.4 billion decreased the carrying amount. Reclassifications to assets and disposal groups held for sale on account of the intention to sell the two subsidiaries Telekom Romania S.A. and T-Mobile Infra B.V. reduced the carrying amount by EUR 0.1 billion.

For information on corresponding lease liabilities, please refer to Note 13 "Financial liabilities and lease liabilities."

The right-of-use assets recognized in the statement of financial position relate in particular to leases for cell sites, network infrastructure, and real estate in the United States operating segment.

The right-of-use assets for land and equivalent rights, and buildings including buildings on land owned by third parties include right-of-use assets related to data centers with a carrying amount of EUR 86 million (December 31, 2019: EUR 103 million). The corresponding depreciation amounted to EUR 18 million in the reporting year (December 31, 2019: EUR 18 million). In addition, the right-of-use assets for technical equipment and machinery also include right-of-use assets related to data centers with a carrying amount of EUR 30 million (December 31, 2019: EUR 17 million). The corresponding depreciation amounted to EUR 13 million in the reporting year (December 31, 2019: EUR 5 million).

Right-of-use assets in connection with sale and leaseback transactions mainly relate to office and technical facilities in the Group Headquarters & Group Services segment, with Group companies selling real estate and then leasing back the facilities and buildings required for business. No significant gains and losses from sale and leaseback transactions were recorded in the 2020 and 2019 financial years.

Leases can include extension and termination options that can have a substantial impact on the period of depreciation of the right-of-use assets if it is deemed to be reasonably certain that extension options will be exercised or termination options will not be exercised.

For further information, please refer to the section "Summary of accounting policies – Accounting policies."

9 Capitalized contract costs

millions of €	Dec. 31, 2020	Dec. 31, 2019
Costs of obtaining a contract	2,182	2,059
Costs to fulfill a contract	10	15
	2,192	**2,075**

As of December 31, 2020, the carrying amount of capitalized contract costs stood at EUR 2.2 billion and was thus EUR 0.1 billion higher than at the end of the prior year. This increase was attributable in particular to a higher level of capitalized costs of obtaining a contract in postpaid customer business in the United States operating segment. The costs of obtaining a contract mainly include sales commissions paid to employees and third-party retailers in the direct and indirect sales channel. Overall, capitalized contract costs of EUR 1,668 million (2019: EUR 1,388 million) were written down on a straight-line basis over the estimated customer retention period.

10 Investments accounted for using the equity method

Deutsche Telekom publishes the following information on significant investments included in the consolidated financial statements using the equity method:

	Deutsche Telekom share		Percentage of voting rights		Assigned to segment	Fair value of the investment, if a listed market price is available	
Name and registered office	Dec. 31, 2020 %	Dec. 31, 2019 %	Dec. 31, 2020 %	Dec. 31, 2019 %		Dec. 31, 2020 millions of €	Dec. 31, 2019 millions of €
Hrvatske telekomunikacije d.d. Mostar, Mostar, Bosnia-Herzegovina[a]	39.10	39.10	39.10	39.10	Europe	30	31
Stratospheric Platforms Ltd., Isle of Man, United Kingdom	38.05	33.59	38.05	33.59	Group Development	n.a.	n.a.
T-Mobile USA Tower LLC, Wilmington, United States[b]	100.00	100.00	100.00	100.00	United States	n.a.	n.a.
T-Mobile West Tower LLC, Wilmington, United States[b]	100.00	100.00	100.00	100.00	United States	n.a.	n.a.

[a] Indirect shareholding via Hrvatski Telekom d.d., Croatia (Deutsche Telekom AG's share: 51.71 %).

[b] Indirect shareholding via T-Mobile US, Inc., United States (Deutsche Telekom AG's share: 43.37 %).

Description of the nature of the activities of the joint arrangement or associate

Hrvatske telekomunikacije d.d. (HT Mostar d.d.) provides mobile and fixed-network communications services in Bosnia-Herzegovina.

Stratospheric Platforms Ltd. develops new communications technologies for stationary and mobile use.

T-Mobile USA Tower LLC and T-Mobile West Tower LLC are structured entities founded by T-Mobile US in each of which it holds a 100 % stake for the purpose of contributing cell sites in accordance with a framework agreement signed in 2012 between T-Mobile US and Crown Castle International Corp., Houston, United States, concerning the leasing and use of the cell sites. The sole right to continue to use and lease out these sites was transferred to Crown Castle. T-Mobile US continues to operate its mobile equipment on these cell towers and, to this end, leases back the required capacity from Crown Castle. Previously unused infrastructure is thus available for Crown Castle to lease to third parties. In return, the owners of the land on which the cell towers are built will no longer receive lease payments from T-Mobile US for those cell towers which were contributed to the two associates and those companies that were disposed of. Both entities were deconsolidated as of the date of the closing of the transaction in 2012, because Crown Castle independently operates the cell towers, generates revenues from the lease out of the sites for an average of 27 years, and determines the finance and business activities of both entities that are relevant for consolidation purposes. It is expected that the leasing of tower space will allow Crown Castle to generate sufficient ongoing profits and cash flows to be able to meet its contractual obligations. Thus Deutsche Telekom has only a significant influence and includes these companies in the consolidated financial statements as associates. Under certain conditions, T-Mobile US will continue to be held liable for any default in the lease payment by Crown Castle to the owners of the underlying land of the cell sites. The agreement includes an extremely low maximum guarantee amount for Deutsche Telekom, since in the unlikely event that this case occurs, T-Mobile US could take over the further use of the relevant cell sites or alternatively terminate the contracts with the owners of the cell site land at short notice. At closing, T-Mobile US established an immaterial cash reserve in the entities sufficient to fund the payment of ongoing administrative expenses not payable by Crown Castle. Aside from the guarantee and the payment of administrative expenses there is no other funding obligation by T-Mobile US.

The following tables provide summarized financial information on the main companies included in the consolidated financial statements and accounted for using the equity method. The data is not based on the stakes attributable to Deutsche Telekom AG, but represents the shareholdings on an assumed 100 % basis.

Summarized financial information on the main entities accounted for using the equity method

millions of €

	HT Mostar d.d.		Stratospheric Platforms Ltd.[a]	
	Dec. 31, 2020/ 2020	Dec. 31, 2019/ 2019	Dec. 31, 2020/ 2020	Dec. 31, 2019/ 2019
Current assets	45	45	11	16
Of which: cash and cash equivalents	12	11	11	16
Non-current assets	165	175	5	4
Current liabilities	22	29	3	1
Non-current liabilities	18	21	0	0
Net revenue	38	40	0	0
Profit (loss)	0	0	(24)	(17)
Other comprehensive income	0	0	0	0
Total comprehensive income	0	0	(24)	(17)
Depreciation, amortization and impairment losses	(9)	(11)	0	0
Dividends paid to Deutsche Telekom	0	0	0	0

[a] As financial data of Stratospheric Platforms Ltd. as of December 31, 2020 was not yet available to Deutsche Telekom at the date of preparation, the company's annual financial statements as of December 31, 2019 were used as a basis for the summarized financial information. The comparatives as of December 31, 2019 were similarly based on the company's annual financial statements as of December 31, 2018.

millions of €

	T-Mobile USA Tower LLC		T-Mobile West Tower LLC	
	Dec. 31, 2020/ 2020	Dec. 31, 2019/ 2019	Dec. 31, 2020/ 2020	Dec. 31, 2019/ 2019
Current assets	0	0	0	0
Non-current assets	117	118	157	160
Current liabilities	0	0	0	0
Non-current liabilities	0	0	0	0
Net revenue	0	0	0	0
Profit (loss)	0	0	0	0
Other comprehensive income	0	0	0	0
Total comprehensive income	0	0	0	0
Dividends paid to Deutsche Telekom	0	0	0	0

Reconciliation to the carrying amount included in the consolidated statement of financial position

millions of €

	HT Mostar d.d.		Stratospheric Platforms Ltd.[a]	
	2020	2019	2020	2019
Net assets as of January 1	**170**	**169**	**20**	**9**
Profit (loss)	0	0	(24)	(17)
Other comprehensive income	0	0	0	0
Share-based payment	0	0	0	0
Change in interest without loss of control	0	0	0	0
Dividends paid	0	0	0	0
Capital increase	0	0	17	28
Exchange rate effects	0	1	1	0
Net assets as of December 31[b]	**170**	**170**	**14**	**20**
Share of net assets attributable to Deutsche Telekom as of December 31[b]	**66**	**66**	**5**	**6**
Goodwill – equity method	0	0	55	60
Reversal of impairment losses	0	0	0	0
Other reconciliation effects	(16)	(15)	0	0
Carrying amount as of December 31	**50**	**51**	**60**	**66**

[a] As financial data of Stratospheric Platforms Ltd. as of December 31, 2020 was not yet available to Deutsche Telekom at the date of preparation, the company's annual financial statements as of December 31, 2019 were used as a basis for the summarized financial information and for the reconciliation statement to the carrying amount reported in Deutsche Telekom's consolidated statement of financial position. The resulting effects for the extrapolation of the carrying amount as of December 31, 2020 were estimated and are included under other reconciliation effects. Similarly, the comparatives as of December 31, 2019 are summarized financial information determined on the basis of the company's annual financial statements as of December 31, 2018 and the reconciliation statement.

[b] The figures for net assets and the share of the net assets of Stratospheric Platforms Ltd. relate to December 31, 2019 and December 31, 2018, respectively.

millions of €

	T-Mobile USA Tower LLC		T-Mobile West Tower LLC	
	2020	2019	2020	2019
Net assets as of January 1	**118**	**62**	**160**	**95**
Profit (loss)	10	54	11	63
Other comprehensive income	0	0	0	0
Dividends paid	0	0	0	0
Exchange rate effects	(11)	2	(14)	2
Net assets as of December 31	**117**	**118**	**157**	**160**
Share of net assets attributable to Deutsche Telekom as of December 31	**117**	**118**	**157**	**160**
Adjustment of carrying amount	0	0	0	0
Other reconciliation effects	0	0	0	0
Carrying amount as of December 31	**117**	**118**	**157**	**160**

In the reporting year, as in the prior year, Deutsche Telekom did not recognize losses in connection with investments included in the consolidated financial statements using the equity method.

Summarized aggregate financial information on non-significant entities accounted for using the equity method
The figures relate to the interests attributable to Deutsche Telekom.

millions of €

	Joint ventures		Associates	
	Dec. 31, 2020/ 2020	Dec. 31, 2019/ 2019	Dec. 31, 2020/ 2020	Dec. 31, 2019/ 2019
Total carrying amounts	42	12	117	83
Total share in profit (loss)	(16)	(7)	(12)	(9)
Other comprehensive income	0	0	0	0
Total comprehensive income	**(16)**	**(7)**	**(12)**	**(9)**

11 Other financial assets

millions of €

	Dec. 31, 2020		Dec. 31, 2019	
	Total	Of which: current	Total	Of which: current
Originated loans and receivables	3,043	2,666	2,936	2,585
Other receivables – publicly funded projects	1,676	420	1,350	476
Derivative financial assets	4,038	45	2,333	88
Equity instruments – measured at fair value through profit or loss	3	0	22	22
Equity instruments – measured at fair value through other comprehensive income	425	0	293	0
Debt instruments – measured at fair value through profit or loss	203	5	115	6
Lease assets	248	87	197	76
Other	4	0	4	1
	9,640	**3,224**	**7,250**	**3,254**

Current and non-current other financial assets increased by EUR 2.4 billion compared with December 31, 2019 to EUR 9.6 billion. The acquisition of Sprint resulted in an increase of EUR 0.4 billion as of the date of first-time consolidation.

The carrying amount of derivative financial assets increased by EUR 1.7 billion. The carrying amount of derivatives without a hedging relationship increased by EUR 1.1 billion to EUR 2.0 billion, mainly in connection with the subsequent measurement of the stock options to buy shares in T-Mobile US received from SoftBank in June 2020 and with new additions of embedded derivatives and embedded derivatives assumed in connection with the acquisition of Sprint at T-Mobile US, including their subsequent measurement. Measurement effects from the derecognition of a derivative in connection with the repayment of a term loan raised during the course of the year had an offsetting effect. The carrying amount of derivatives with a hedging relationship increased by EUR 0.6 billion to EUR 2.0 billion, mainly due to the increase in positive fair values from interest rate swaps in fair value hedges, which is primarily the result of a significant decline in the interest rate level. In addition, other financial assets increased by EUR 0.3 billion in connection with grants receivable from funding projects for the broadband build-out in Germany.

Subsidiaries of Deutsche Telekom deposited cash collateral of EUR 446 million as of December 31, 2020 (December 31, 2019: EUR 70 million) in connection with auctions for the planned acquisition of spectrum licenses. At the reporting date, cash and cash equivalents of EUR 63 million when translated into euros (December 31, 2019: EUR 0 million) were pledged as collateral for liabilities with right of creditors to priority repayment in the event of default. Collateral agreements as surety for potential credit risks arising from derivative transactions in connection with forward-payer swaps gave rise to receivables of EUR 34 million as of the reporting date (December 31, 2019: EUR 565 million). The decline in the balance is attributable to the forward-payer swaps concluded for borrowings at T-Mobile US, which were terminated prematurely in April 2020.

For further information on allowances and the credit ratings of originated loans and receivables, please refer to Note 41 “Financial instruments and risk management.”

12 Other assets

The carrying amount of current and non-current other assets increased by EUR 0.5 billion to EUR 2.6 billion. The inclusion of Sprint increased the carrying amount by EUR 0.6 billion. As of December 31, 2020, other assets mainly included advance payments in connection with agreements on services for certain mobile communications equipment that do not fall within the scope of IFRS 16, as well as further deferred expenses totaling EUR 2.2 billion (December 31, 2019: EUR 1.7 billion).

13 Financial liabilities and lease liabilities

The following table shows the composition and maturity structure of **financial liabilities** as of December 31, 2020:

millions of €

	Dec. 31, 2020				Dec. 31, 2019			
	Total	**Due within 1 year**	**Due > 1 year ≤ 5 years**	**Due > 5 years**	Total	Due within 1 year	Due > 1 year ≤ 5 years	Due > 5 years
Bonds and other securitized liabilities	87,702	5,282	25,681	56,739	51,644	4,176	17,536	29,931
Liabilities to banks	5,257	2,152	1,666	1,439	6,516	2,690	2,656	1,170
Of which: promissory notes	737	58	287	392	722	0	188	534
Of which: loans from the European Investment Bank	3,240	1,073	1,276	891	2,981	173	2,351	457
Of which: other loans	1,280	1,021	103	156	2,813	2,517	117	179
	92,959	**7,435**	**27,347**	**58,178**	**58,160**	**6,866**	**20,192**	**31,102**
Liabilities to non-banks from promissory note bonds	490	0	53	437	699	200	53	446
Liabilities with the right of creditors to priority repayment in the event of default	3,886	859	2,257	769	0	0	0	0
Other interest-bearing liabilities	7,206	2,711	1,958	2,537	4,369	1,959	1,113	1,298
Other non-interest-bearing liabilities	1,703	1,563	134	6	1,476	1,332	136	8
Derivative financial liabilities	864	85	252	527	1,645	1,105	115	425
	14,149	**5,217**	**4,655**	**4,277**	**8,189**	**4,597**	**1,416**	**2,176**
Financial liabilities	**107,108**	**12,652**	**32,002**	**62,455**	**66,349**	**11,463**	**21,608**	**33,278**
Lease liabilities	**32,715**	**5,108**	**12,610**	**14,997**	**19,835**	**3,987**	**10,250**	**5,599**

The carrying amount of current and non-current financial liabilities increased by EUR 40.8 billion to EUR 107.1 billion compared with the end of 2019. This increase is mainly attributable to the first-time consolidation of Sprint following the consummation of the business combination with T-Mobile US. Exchange rate effects, in particular from the translation of U.S. dollars into euros, lowered the carrying amount by EUR 6.9 billion.

The first-time consolidation of Sprint as of April 1, 2020 increased the carrying amount of financial liabilities by a total of EUR 39.1 billion. The financing structure was also reorganized in the course of the business combination. Immediately after the transaction, liabilities of the former Sprint totaling USD 9.8 billion (EUR 8.9 billion) were repaid, of which USD 7.4 billion (EUR 6.8 billion) fell due pursuant to a binding change-in-control clause.

In connection with the business combination with Sprint, on April 1, 2020, the "new" T-Mobile US drew down on a bridge loan facility agreed with a total of 16 banks with a total volume of USD 19 billion (EUR 17.3 billion). In connection with the financing provided with this bridge loan facility, fees of USD 0.4 billion (EUR 0.3 billion) were paid to the banks. Additionally, T-Mobile US raised a new term loan of USD 4 billion (EUR 3.7 billion) on April 1, 2020. The loan facilities were used, among other things, for the early repayment of intragroup loan liabilities to Deutsche Telekom AG and to refinance debt of the former Sprint. Senior secured notes, issued on April 9, 2020 for a total of USD 19 billion (EUR 17.3 billion), with terms of between 5 and 30 years and bearing interest of between 3.500 % and 4.500 %, were used to repay the bridge loan facility. On June 24, 2020, T-Mobile US issued senior secured notes with a total volume of USD 4 billion (EUR 3.6 billion) with terms of between 6 and 11 years and bearing interest of between 1.500 % and 2.550 %. These notes were used to repay intragroup loans and refinance high-yield bonds issued by the former Sprint. On July 4, 2020, T-Mobile US prematurely redeemed the USD 1.0 billion (EUR 0.9 billion) aggregate principal amount of a 6.500 % senior note originally due in 2024. On August 15, 2020, T-Mobile US repaid a senior note on schedule with a nominal volume of USD 1.5 billion (EUR 1.3 billion) with a term of 8 years and bearing interest of 7.000 %. On September 1, 2020, the USD 1.7 billion (EUR 1.4 billion) aggregate principal amount of another 6.375 % senior note, originally due in 2025, was prematurely redeemed. On October 6, 2020, T-Mobile US issued senior secured notes with a total volume of USD 4 billion (EUR 3.4 billion) with terms ending between 2028 and 2051 and bearing interest of between 2.050 % and 3.300 %. The cash received was used on October 9, 2020 to prematurely repay the term loan originated on April 1, 2020. On October 28, 2020, T-Mobile US issued senior secured notes with a total volume of USD 4.75 billion (EUR 4.0 billion) with terms ending between 2031 and 2060 and bearing interest of between 2.250 % and 3.600 %.

The carrying amount was also increased by bonds issued by Deutsche Telekom AG in the first quarter of 2020: a U.S. dollar bond of USD 1.3 billion (EUR 1.1 billion), a euro bond of EUR 0.2 billion, and a bond in Swiss francs of CHF 0.3 billion (EUR 0.3 billion). Magyar Telekom issued a bond in Hungarian forints of HUF 70 billion (EUR 0.2 billion) in the fourth quarter of 2020.

Scheduled repayments in the Group of U.S. dollar bonds totaling USD 1.3 billion (EUR 1.2 billion), euro bonds totaling EUR 2.6 billion, and a zero-coupon bond of EUR 0.4 billion, had an offsetting effect in the reporting period. In addition, as part of the liabilities management in the Group, early repayments were made on euro bonds and U.S. dollar bonds of Deutsche Telekom International Finance B.V. which fall due in 2021 and 2022. These repayments took the form of partial buybacks totaling EUR 0.8 billion and USD 1.4 billion (EUR 1.3 billion) respectively.

The carrying amount of liabilities to banks decreased by EUR 1.3 billion compared with December 31, 2019 to EUR 5.3 billion. This decline is mainly due to the net reduction of EUR 1.4 billion in the balance of short-term borrowings. This includes a Deutsche Bundespost treasury note (zero-coupon bond) issued in the past with a carrying amount of EUR 1.4 billion, which fell due on December 31, 2019 and was repaid on that date by a bank using its own funds. The payment by Deutsche Telekom AG to this bank was made on the following bank working day of January 2, 2020.

For further information, please refer to Note 35 "Notes to the consolidated statement of cash flows."

The liabilities with right of creditors to priority repayment in the event of default with a carrying amount of EUR 3.9 billion (December 31, 2019: EUR 0.0 billion) relate primarily to fixed-income bonds issued by Sprint. The bonds are repayable on a pro rata basis and mature between 2021 and 2028. Their entire outstanding nominal amount at the reporting date was EUR 3.7 billion when translated into euros. Collateral was provided for these bonds, hence they constitute a separate class of financial instruments. At the reporting date, cash and cash equivalents with a carrying amount of EUR 63 million when translated into euros were pledged as collateral for these bonds.

The carrying amount of other interest-bearing liabilities increased by EUR 2.8 billion compared with December 31, 2019 to EUR 7.2 billion. The acquisition of Sprint resulted in an increase of EUR 2.7 billion in the carrying amount of non-current other interest-bearing liabilities as of the date of first-time consolidation.

The carrying amount of derivative financial liabilities decreased by EUR 0.8 billion in total to EUR 0.9 billion, mainly due to the decline of EUR 1.0 billion from the premature termination of forward-payer swaps by T-Mobile US at the start of April 2020. These forward-payer swaps with a nominal value of EUR 8.8 billion when translated into euros were concluded for borrowings at T-Mobile US and designated as cash flow hedges in effective hedging relationships. By the date of termination, they gave rise to a remeasurement loss recognized directly in equity in the reporting period of EUR 0.9 billion. The secured term loan was originated on April 1, 2020.

For further information on derivative financial liabilities, please refer to Note 41 "Financial instruments and risk management."

Deutsche Telekom has established ongoing liquidity management. To ensure the Group's and Deutsche Telekom AG's solvency and financial flexibility at all times, Deutsche Telekom maintains a liquidity reserve in the form of credit lines and cash. This liquidity reserve is to cover the capital market maturities of the next 24 months at any time. Since the successful business combination between T-Mobile US and Sprint, T-Mobile US has pursued its own separate financing and liquidity strategy.

At December 31, 2020, Deutsche Telekom (excluding T-Mobile US) had standardized bilateral credit agreements with 21 banks for a total of EUR 12.6 billion. None of these lines of credit had been utilized as of December 31, 2020. In the prior year, a transaction of EUR 0.6 billion was temporarily deducted from a credit line. Pursuant to the credit agreements, the terms and conditions depend on Deutsche Telekom's rating. The bilateral credit agreements have an original maturity of 36 months and can, after each period of twelve months, be extended by a further twelve months to renew the maturity of 36 months. From today's perspective, access to the international debt capital markets is not jeopardized.

Furthermore, bilateral credit lines with an aggregate total volume of USD 5.5 billion (EUR 4.5 billion) plus a cash balance of USD 10.4 billion (EUR 8.5 billion) were available to T-Mobile US as of December 31, 2020. None of these credit lines had been utilized as of December 31, 2020.

The carrying amount of current and non-current **lease liabilities** increased by EUR 12.9 billion to EUR 32.7 billion compared with December 31, 2019, primarily due to the following effects. EUR 6.8 billion of the increase resulted from the inclusion of Sprint in the United States operating segment, to which the majority of the lease liabilities relate. The carrying amount also increased by EUR 9.4 billion as a result of the lease modification to existing leases that T-Mobile US concluded with American Tower. Exchange rate effects, in particular from the translation of U.S. dollars into euros, lowered the carrying amount by EUR 2.3 billion.

For further information on lessee relationships, please refer to Note 8 "Right of use assets – lessee relationships."

In the reporting year and in the 2019 financial year, there were no significant expenses for variable lease payments that were not included in the measurement of lease liabilities.

As of December 31, 2020, future payment obligations for leases that have not yet begun and which are not taken into account in the measurement of lease liabilities amounted to EUR 0.2 billion (December 31, 2019: EUR 0.3 billion).

The following tables show the contractually agreed (undiscounted) interest payments and repayments of the non-derivative financial liabilities, the lease liabilities, and the derivatives with positive and negative fair values:

millions of €

	Carrying amount	Cash flows in 2021			Cash flows in 2022		
	Dec. 31, 2020	Fixed interest rate	Variable interest rate	Repayment	Fixed interest rate	Variable interest rate	Repayment
Non-derivative financial liabilities (excluding lease liabilities)							
Bonds, other securitized liabilities, liabilities to banks and liabilities to non-banks from promissory notes and similar liabilities	(93,449)	(2,595)	0	(6,359)	(3,335)	0	(6,536)
Liabilities with the right of creditors to priority repayment in the event of default	(3,886)	(163)	0	(856)	(135)	0	(428)
Other interest-bearing liabilities	(7,206)	(21)	(2)	(2,711)	(24)	(2)	(774)
Other non-interest-bearing liabilities	(1,703)	0	0	(1,563)		0	(106)
Lease liabilities	(32,715)	(1,108)	0	(5,110)	(938)	0	(4,347)
Derivative financial liabilities and assets							
Derivative financial liabilities:							
Currency derivatives without a hedging relationship	(41)	0	0	(32)	0	0	(6)
Currency derivatives in connection with cash flow hedges	(28)	0	0	(26)	0	0	0
Embedded derivatives without a hedging relationship	(129)	0	0	(18)	0	0	(7)
Other derivatives without a hedging relationship	(13)	0	0	(2)	0	0	(10)

millions of €

	Carrying amount Dec. 31, 2020	Cash flows in 2021			Cash flows in 2022		
		Fixed interest rate	Variable interest rate	Repay-ment	Fixed interest rate	Variable interest rate	Repay-ment
Interest rate derivatives without a hedging relationship	(295)	55	(54)	(19)	28	(20)	(25)
Interest rate derivatives in connection with fair value hedges	(52)	(61)	98	0	(61)	98	0
Interest rate derivatives in connection with cash flow hedges	(307)	73	(117)	0	73	(117)	3
Derivative financial assets:[a]							
Currency derivatives without a hedging relationship	15	0	0	16	0	0	0
Currency derivatives in connection with cash flow hedges	8	0	0	4	0	0	0
Embedded derivatives without a hedging relationship	77	0	0	0	0	0	(1)
Other derivatives without a hedging relationship	0	0	0	0	0	0	0
Interest rate derivatives without a hedging relationship	191	(18)	27	0	(6)	8	116
Interest rate derivatives in connection with fair value hedges	2,025	(148)	465	0	(146)	455	0
Interest rate derivatives in connection with cash flow hedges	12	(5)	11	0	(4)	9	7

millions of €

	Cash flows in 2023–2025			Cash flows in 2026–2030			Cash flows in 2031 and thereafter		
	Fixed interest rate	Variable interest rate	Repay-ment	Fixed interest rate	Variable interest rate	Repay-ment	Fixed interest rate	Variable interest rate	Repay-ment
Non-derivative financial liabilities (excluding lease liabilities)									
Bonds, other securitized liabilities, liabilities to banks and liabilities to non-banks from promissory notes and similar liabilities	(8,018)	0	(19,930)	(8,093)	0	(34,133)	(8,349)	0	(21,758)
Liabilities with the right of creditors to priority repayment in the event of default	(235)	0	(1,787)	(43)	0	(599)	0	0	0
Other interest-bearing liabilities	(47)	(1)	(1,184)	(50)	0	(1,811)	(22)	0	(726)
Other non-interest-bearing liabilities	0		(28)		0	(5)	0	0	(1)
Lease liabilities	(2,157)	0	(8,309)	(2,780)	0	(14,373)	(119)	0	(529)
Derivative financial liabilities and assets									
Derivative financial liabilities:									
Currency derivatives without a hedging relationship	0	0	0	0	0	0	0	0	0
Currency derivatives in connection with cash flow hedges	0	0	0	0	0	0	0	0	0
Embedded derivatives without a hedging relationship	0	0	(28)	0	0	(65)	0	0	(37)
Other derivatives without a hedging relationship	0	0	(2)	0	0	0	0	0	0
Interest rate derivatives without a hedging relationship	31	(2)	(69)	22	0	(74)	(2)	0	35
Interest rate derivatives in connection with fair value hedges	(184)	292	(7)	(275)	419	(131)	(1)	2	(2)
Interest rate derivatives in connection with cash flow hedges	177	(271)	0	7	44	95	0	(4)	28
Derivative financial assets:[a]									
Currency derivatives without a hedging relationship									
Currency derivatives in connection with cash flow hedges	0	0	0	0	0	0	0	0	0
Embedded derivatives without a hedging relationship	0	0	19	0	0	40	0	0	25
Other derivatives without a hedging relationship	0	0	0	0	0	0	0	0	0
Interest rate derivatives without a hedging relationship	(2)	16	17	(8)	44	0	34	17	25
Interest rate derivatives in connection with fair value hedges	(425)	1,258	(5)	(557)	1,407	(37)	(846)	1,898	(9)
Interest rate derivatives in connection with cash flow hedges	1	4	0	0	0	0	0	0	0

[a] This does not include payments that Deutsche Telekom would have to make in the event of exercising options to buy company shares. It is unclear whether, when, and to what extent such options will be exercised. This mainly relates to the stock options to buy shares in T-Mobile US received from SoftBank. If Deutsche Telekom were to exercise the maximum number of these stock options, it would have to make a payment of EUR 9,915 million when translated into euros, based on the share price at the reporting date. For further information on these stock options, please refer to Note 41 "Financial instruments and risk management" in the comments on financial liabilities assigned to Level 3. Deutsche Telekom also holds other immaterial options to buy company shares.

millions of €	Carrying amount	Cash flows in				
	Dec. 31, 2019	2020	2021	2022–2024	2025–2029	2030 and thereafter
Non-derivative financial liabilities (excluding lease liabilities)						
Bonds, other securitized liabilities, liabilities to banks and liabilities to non-banks from promissory notes and similar liabilities	(58,859)	(5,766)	(6,930)	(19,462)	(24,888)	(14,141)
Other interest-bearing liabilities	(4,369)	(1,981)	(807)	(396)	(1,176)	(202)
Other non-interest-bearing liabilities	(1,476)	(1,332)	(125)	(11)	(1)	(7)
Lease liabilities	(19,835)	(4,756)	(4,163)	(7,658)	(5,371)	(684)
Derivative financial liabilities and assets						
Derivative financial liabilities:						
Currency derivatives without a hedging relationship	(59)	(68)	(1)	0	0	0
Currency derivatives in connection with cash flow hedges	(4)	(3)	0	0	0	0
Embedded derivatives without a hedging relationship	(146)	(9)	(8)	(32)	(78)	(84)
Other derivatives without a hedging relationship	(7)	0	0	(9)	0	0
Interest rate derivatives without a hedging relationship	(112)	(8)	(37)	(58)	(22)	166
Interest rate derivatives in connection with fair value hedges	(65)	16	22	71	99	87
Interest rate derivatives in connection with cash flow hedges	(1,249)	(1,147)	(27)	(192)	(19)	11
Derivative financial assets:						
Currency derivatives without a hedging relationship	49	46	0	0	0	0
Currency derivatives in connection with cash flow hedges	5	2	0	0	0	0
Embedded derivatives without a hedging relationship	0	0	0	0	0	0
Other derivatives without a hedging relationship	3	2	1	2	0	0
Interest rate derivatives without a hedging relationship	212	(26)	(32)	28	148	226
Interest rate derivatives in connection with fair value hedges	1,153	256	229	654	754	410
Interest rate derivatives in connection with cash flow hedges	281	68	64	210	228	269

All instruments held at December 31, 2020 and for which payments were already contractually agreed were included. Planning data for future, new liabilities were not included. Amounts in foreign currency were each translated at the closing rate at the reporting date. The variable interest payments arising from the financial instruments were calculated using the last interest rates fixed before December 31, 2020. Financial liabilities that can be repaid at any time are always assigned to the earliest possible time period. In accordance with § 2 (4) of the German Act on the Transformation of the Deutsche Bundespost Enterprises into the Legal Structure of Stock Corporation (Stock Corporation Transformation Act – Postumwandlungsgesetz), the Federal Republic is guarantor of all Deutsche Telekom AG's liabilities that were already outstanding as at January 1, 1995. At December 31, 2020, this figure was a nominal EUR 0.1 billion (December 31, 2019: EUR 0.5 billion).

14 Trade and other payables

millions of €	Dec. 31, 2020	Dec. 31, 2019
Trade payables	9,691	9,410
Other liabilities	68	21
	9,760	**9,431**

The carrying amount of trade and other payables increased year-on-year by EUR 0.3 billion to EUR 9.8 billion. The inclusion of Sprint increased the carrying amount by EUR 2.9 billion. This was offset in particular by lower liabilities to terminal equipment vendors and declines in liabilities in connection with the acquisition of assets in the United States operating segment. Liabilities also decreased in the other operating segments. Exchange rate effects, especially from the translation from U.S. dollars into euros, also decreased the carrying amount.

Of the total of trade and other payables, EUR 9,691 million (December 31, 2019: EUR 9,410 million) is due within one year.

15 Provisions for pensions and other employee benefits

Defined benefit plans

The Group's pension obligations are based on direct and indirect pension commitments mainly in Germany, the United States, and Switzerland. Deutsche Telekom's pension obligations are as follows:

millions of €	Dec. 31, 2020	Dec. 31, 2019
Defined benefit liability	**7,684**	**5,831**
Defined benefit asset	(19)	(21)
Net defined benefit liability (asset)	**7,665**	**5,810**
Of which: provisions for direct commitments	7,042	5,775
Of which: provisions for indirect commitments	623	35

Defined benefit liabilities are disclosed under non-current liabilities in the consolidated statement of financial position. The defined benefit asset is recognized under other non-current assets in the consolidated statement of financial position.

The increase in provisions for pensions compared with the prior year was mainly due to the decline in the price of the shares in BT, which had been transferred to plan assets, as well as discount rate adjustments, which resulted in an actuarial loss of EUR 1.4 billion from the remeasurement of defined benefit plans. In addition, the carrying amount increased by EUR 0.8 billion due to the change in the composition of the Group in connection with the business combination of T-Mobile US and Sprint.

Calculation of net defined benefit liabilities/assets

millions of €	Dec. 31, 2020	Dec. 31, 2019
Present value of the obligations fully or partially funded by plan assets	12,140	9,045
Plan assets at fair value	(6,698)	(6,489)
Defined benefit obligations in excess of plan assets	**5,441**	**2,556**
Present value of the unfunded obligations	2,222	3,245
Defined benefit liability (asset) according to IAS 19.63	**7,663**	**5,801**
Effect of asset ceiling (according to IAS 19.64)	2	9
Net defined benefit liability (asset)	**7,665**	**5,810**

millions of €	2020	2019
Net defined benefit liability (asset) as of January 1	**5,810**	**5,491**
Service cost	41	245
Net interest expense (income) on the net defined benefit liability (asset)	86	87
Remeasurement effects	1,358	603
Pension benefits paid directly by the employer	(287)	(155)
Employer contributions to plan assets	(61)	(449)
Changes attributable to business combinations/transfers of operation/acquisitions and disposals	816	(12)
Reclassifications to liabilities directly associated with non-current assets and disposal groups held for sale	(10)	n.a.
Administration costs actually incurred (paid from plan assets)	0	0
Exchange rate fluctuations for plans in foreign currency	(89)	0
Net defined benefit liability (asset) as of December 31	**7,665**	**5,810**

Key assumptions for the measurement of the defined benefit obligations are the discount rate, the salary increase rate, the pension increase rate, and life expectancy. The following table shows the assumptions on which the measurement of defined benefit obligations as of December 31 of the respective year are based. The assumptions made as of December 31 of the respective prior year are used to measure the expected pension expense (defined benefit cost) of a given financial year. The discount rate as of April 1, 2020 was used for the first-time inclusion of the obligations and to measure the expected pension expense in the United States.

Assumptions for the measurement of defined benefit obligations as of December 31

%		2020	2019	2018
Discount rate	Germany	0.85	1.14	1.60
	United States	2.75	n.a.	n.a.
	Switzerland	0.07	0.29	0.82
Salary increase rate	Germany	2.50	2.50	2.50
	United States[a]	4.25	n.a.	n.a.
	Switzerland	1.00	1.00	1.00
Pension increase rate	Germany (general)	1.50	1.50	1.50
	Germany (according to articles of association)	1.00	1.00	1.00
	United States	n.a.	n.a.	n.a.
	Switzerland	0.10	0.10	0.10

[a] The salary increase rate in the United States only has a marginal impact on the amount of the pension obligations, since almost all commitments are frozen.

years		Dec. 31, 2020	Dec. 31, 2019
Duration	Germany	12.9	12.7
	United States	14.4	n.a.
	Switzerland	15.7	15.9

The following biometric assumptions were essential for the measurement of pension obligations:

Germany: Heubeck 2018G, Switzerland: BVG 2015 Generational, United States: Pri-2012 tables.

The aforementioned discount rates were used as of December 31, 2020 when calculating the present value of defined benefit obligations, taking into account future salary increases. The rates were determined in line with the average weighted duration of the respective obligation.

The discount rate is determined based on the yields of high-quality corporate bonds with AA rating, mapped in a yield curve showing the corresponding spot rates. The underlying method is routinely reviewed and refined as required (e.g., further development of the bond markets, automation of the availability of corresponding data in terms of quantity and quality).

As of March 31, 2019, Deutsche Telekom changed the method it uses to calculate the discount rate in the euro zone, Switzerland, and the United Kingdom for determining pension obligations in accordance with IAS 19. The changes resulted from a change in provider for the determination of the yield curves.

Under the new method, adjustments are made in relation to the selection of the bonds available on the market (previous data basis: Bloomberg; data basis after adjustment: Thomson Reuters) as well as in the determination of the yield curve from this data. The first step is to remove bonds with special options (e.g., put or call options) or other properties (e.g., low-volume bonds, bundled bonds) from the available portfolio. Then a regression curve is determined based on the bond market so as to identify potential outliers (calculated using the double standard deviation) and likewise remove these from the bond portfolio for determining the interest rate. The yield curve determined using this method is subsequently applied to the cash flows in the pension plans so as to determine an equivalent uniform discount rate.

In 2019, the Group's pension obligations were based on pension commitments mainly in Germany, Greece, and Switzerland. Without the change, the discount rate as of December 31, 2019 would have been 0.30 percentage points lower in Germany, 0.30 or 0.23 percentage points lower in Greece (OTE) for the plan for staff retirement indemnities and the plan for youth accounts respectively, and 0.07 percentage points lower in Switzerland. In 2019, the defined benefit obligations would have been EUR 442 million higher and the service cost for 2020 EUR 11 million higher.

Development of defined benefit obligations in the reporting year

millions of €

	2020	2019
Defined benefit obligations as of January 1	**12,290**	**11,590**
Current service cost	256	250
Interest cost	183	186
Remeasurement effects	663	656
Of which: experience-based adjustments	57	0
Of which: adjusted financial assumptions	617	664
Of which: adjusted demographic assumptions	(11)	(8)
Total benefits actually paid	(503)	(397)
Contributions by plan participants	4	4
Changes attributable to business combinations/transfers of operation/acquisitions and disposals	1,925	(12)
Past service cost (due to plan amendments/curtailments)[a]	(223)	(8)
Settlements	8	3
Reclassifications to liabilities directly associated with non-current assets and disposal groups held for sale	(10)	n.a.
Taxes to be paid as part of pensions	0	0
Exchange rate fluctuations for plans in foreign currency	(232)	18
Defined benefit obligations as of December 31	**14,362**	**12,290**
Of which: active plan participants	5,803	5,576
Of which: plan participants with vested pension rights who left the Group	3,099	2,448
Of which: benefit recipients	5,459	4,266

[a] The past service cost due to plan amendments in 2020 relates primarily to a restructuring of risk benefits in Germany (please refer to the following section "Global Pension Policy and description of the plans").

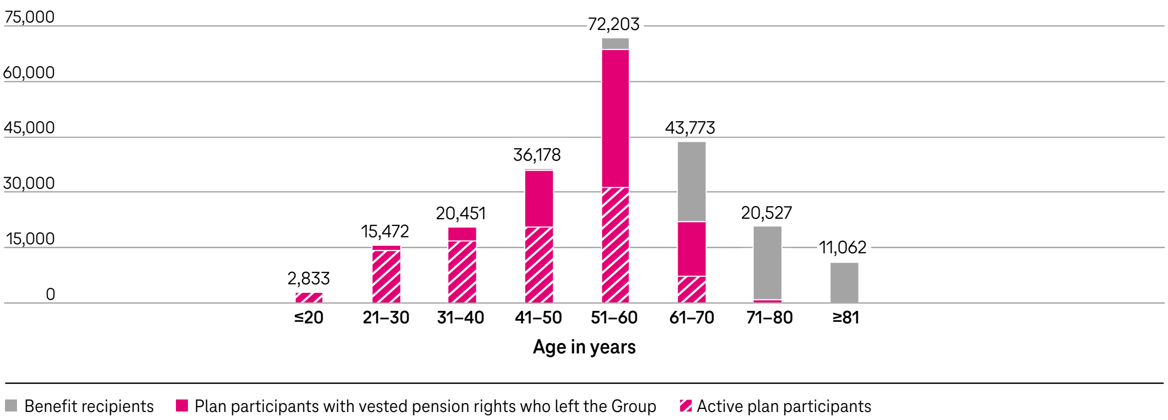
Distribution of obligations relating to Deutsche Telekom's most significant plans as of December 31, 2020 and December 31, 2019

millions of €

	Dec. 31, 2020				Dec. 31, 2019			
	Germany	United States	Switzerland	Other plans	Germany	United States	Switzerland	Other plans
Defined benefit obligations	11,763	1,846	235	518	11,530	n.a.	221	539
Plan assets at fair value	(5,013)	(1,171)	(237)	(278)	(6,007)	n.a.	(230)	(252)
Effect of asset ceiling	0	0	2	0	0	n.a.	9	0
Net defined benefit liability (asset)	**6,750**	**675**	**0**	**240**	**5,524**	**n.a.**	**0**	**286**

The following comments on the age structure and sensitivity analysis, as well as descriptions of plans and the risks associated with them, relate to the relevant pension obligations (Germany, United States, and Switzerland).

Age structure of plan participants in the most significant pension plans



Sensitivity analysis for the defined benefit obligations

The following sensitivity analysis describes the effects of possible adjustments in the material actuarial assumptions for measurement on the defined benefit obligations determined as of December 31, 2020. A change in the measurement assumptions to the extent described below, with otherwise unchanged assumptions, would have impacted the defined benefit obligations as of December 31, 2020 as follows:

millions of €	Increase (decrease) of the defined benefit obligations as of Dec. 31, 2020			Increase (decrease) of the defined benefit obligations as of Dec. 31, 2019		
	Germany	United States	Switzerland	Germany	United States	Switzerland
Increase of discount rate by 100 basis points	(1,291)	(232)	(26)	(1,284)	n.a.	(25)
Decrease of discount rate by 100 basis points	1,575	287	34	1,566	n.a.	32
Increase of salary increase rate by 50 basis points	3	0	1	6	n.a.	1
Decrease of salary increase rate by 50 basis points	(2)	0	(1)	(5)	n.a.	(1)
Increase of pension increase rate by 25 basis points	6	0	6	5	n.a.	5
Decrease of pension increase rate by 25 basis points	(6)	0	(2)	(5)	n.a.	(2)
Life expectancy increase by 1 year	299	58	6	305	n.a.	5
Life expectancy decrease by 1 year	(298)	(60)	(6)	(296)	n.a.	(5)

The sensitivity analysis was carried out separately for the discount rate, the salary increase rate, and the pension increase rate. For this purpose, further actuarial evaluations were made for both the increase and for the decrease of the assumptions. It can be assumed that the life expectancy of the plan members will not change significantly within a year. Nevertheless, the effect of a change in life expectancy on the obligations was additionally determined from a risk perspective. Evaluations were carried out based on the assumption that the life expectancy of the plan members aged 65 would increase or decrease by one year. The life expectancy of the remaining plan members was adjusted accordingly. Variations in the assumed retirement age or turnover rates would only have an immaterial effect, especially in Germany.

Global Pension Policy and description of the plans

Deutsche Telekom manages its pension commitments based on the Group-wide Global Pension Policy. It ensures on a worldwide basis that Group minimum standards regarding the granting and management of company pension benefits are complied with, plans are harmonized, and financial and other risks to the core business are avoided or reduced. In addition, the policy provides guidelines for the implementation and management of pension commitments and defines requirements for the launch, adjustment, and closure of corresponding plans. The regulations and provisions laid down in this Group policy take into account the national differences in state pension and other commitments under labor, tax, and social law and the common business practices in the area of pension commitments.

Defined benefit plans based on final salaries in the Group have largely been replaced by plans with contribution-based promises to minimize the risks involved. In addition, a corporate CTA (Deutsche Telekom Trust e.V.) is used in Germany for additional funding of pension obligations. A CTA is a legally structured trust agreement to cover unfunded pension commitments with plan assets, and to provide greater protection against insolvency for these obligations.

In **Germany** there are commitments for pension and disability benefits for a majority of employees as well as pension benefits for their surviving dependents. As part of a reorganization of the company pension plan, a capital account plan was introduced across Germany in 1997 for active employees. Furthermore, in subsequent years, commitments acquired through company acquisitions were also transferred to the capital account plan scheme. The capital account plan is an employer-financed, contribution-based benefit promise. The salary-linked contributions granted annually earn interest in advance for each year of provision up to age 60, calculated using age-based factors, converting the contribution into a guaranteed insured amount. The advance interest rate currently stands at 3.50 % p. a. (target interest rate for the capital account plan).

The period for providing contributions is initially limited to ten future contribution years. The contribution period will be extended automatically every year by a further year, unless terminated. The insured amounts accumulated over the period of active service are paid out if an insured event arises, primarily in the form of a lump sum. Hence there is only a limited longevity risk for these commitments. Based on the payment guidelines and the structure of the capital account plan, the employer can plan for this, and there is only a small risk inherent in the plan with regard to the volatility of remuneration dynamics.

In October 2020, Deutsche Telekom and the ver.di trade union agreed to restructure the collectively agreed risk benefits (death in the active phase and/or disability) in the company pension scheme for employees covered by collective agreements in Germany. Under the existing structure, the pension credit accrued through the capital account plan is paid out in the case of a risk event. The revised rules will abolish this in favor of paying out a sum equivalent to an annual target salary of the employee. This provides a better outcome than the existing structure in particular for employees with a shorter length of service with the company. Grandfather clauses have been included for employees who have worked for the company for longer periods and part-time employees. These changes will take effect in October 2021. As a result of the change from an annual (pro rata) contribution to payment of a lump sum, the employer will in future grant the risk benefit irrespective of the employee's length of service with the company. Future risk benefit payments will thus directly be recognized as expenses in the payout year. Provisions recognized according to the current rules under provisions for pensions and other employee benefits for entitlements after the restructuring takes effect were measured under the new rules using the discount rate at the transition date and reversed through profit or loss in the fourth quarter of 2020. This discount rate was also used to measure the pension expense from the remaining provisions for pensions and other employee benefits for the remainder of the financial year.

In addition, in Germany there are various closed legacy commitments, which generally provide for old-age and disability benefits as well as benefits for surviving dependents in the form of life-long pensions. The commitments predominantly comprise the overall pension of the supplementary retirement pensions institution (Versorgungsanstalt der Deutschen Bundespost – VAP) that takes into account the statutory pension. Most of the plan members of these commitments are former employees with vested rights and retirees for whom the amount of benefits has already been determined. So the VAP overall pension scheme continues to apply to former employees who were already retired or who had left with vested claims in 1997.

To the extent that defined benefit plans in Germany grant annuities, the future adjustment for these pensions, except for insignificant exceptions, is bindingly defined in the existing benefit regulations. A change in the assumptions for the general pension trend in Germany therefore only has an immaterial impact on the defined benefit obligations.

As a change in life expectancy mainly impacts on the obligations from legacy pension commitments and, since 1997, commitments have been granted in the form of capital, the significance of the risk resulting from the change in life expectancy is expected to decline for the Group over subsequent years.

To cover pension obligations over the long term, Deutsche Telekom has transferred funds to a corporate CTA and a corporate pension fund. In 2020, further subsidiaries of Deutsche Telekom AG in Germany concluded CTAs.

The main pension plans in the **United States** comprise medical plans, life insurance (for pensioners and active employees) and pension commitments which were included in Deutsche Telekom's consolidated financial statements for the first time upon the acquisition of Sprint as of April 1, 2020.

The pension commitments in the United States mainly relate to two defined contribution plans: the Sprint Retirement Pension Plan (SRPP) and the Supplemental Executive Retirement Plan (SERP). The benefit amount under the SRPP is calculated primarily on the basis of 1.5 % of the plan member's average salary up to December 31, 2005. Furthermore, the additional SERP was set up for contributions above the tax exemption limits for the relevant eligible persons. Both plans have been frozen since December 31, 2005, such that plan participants have not been able to earn any more vested rights since that date.

The SRPP is financed through a pension fund within the framework of U.S. regulations. The level of financing of the SRPP is regularly reviewed, with the company paying additional contributions into the pension fund on top of the minimum contributions if necessary, depending on the financing status.

Under the medical plans, the Company grants allowances for medical care after retirement to top up statutory benefits. In addition to the existing pensioners, there is a group of active employees who are near retirement, who can also access benefits from these plans. The commitments have been almost entirely frozen and replaced by contribution plans (401(k) plans) for future vested rights.

Under the life insurance policies, the Company pays a benefit in the event of the death of a pensioner (basic coverage for pensioners prior to 2004) of 50 % of the final allowable income drawn (taking into account a cap for the maximum amount payable) as well as other coverage for a small group of employees who are still active.

In addition, the Company grants defined benefit plans for individuals abroad. The majority of these benefits comprise benefits prescribed by law in the respective countries or also benefits under the FAP (Financial Accumulation Plan – a capital account plan). Almost all of these individual commitments have likewise been frozen.

Under the company pension system in **Switzerland**, a defined benefit plan is in place that is financed by employer and employee contributions (within the meaning of IAS 19). This plan is granted by the legally independent T-Systems pension fund. As is often the case in Switzerland, the companies grant higher benefits than legally required. The Swiss Federal Law on Occupational Retirement, Surviving Dependants' and Disability Pension (Bundesgesetz über die berufliche Alters-, Hinterlassenen- und Invalidenvorsorge – BVG) sets out minimum requirements for the pay to be insured, the age-based contributions, and a minimum annuity factor for the obligatory portion of the accrued retirement assets to be annuitized. In addition, the Swiss Federal Council defines a minimum interest rate for the obligatory retirement assets (2020: 1.00 %, 2021: 1.00 %).

The foundation board (Stiftungsrat) presides over the Swiss pension fund. It ensures the day-to-day running of the pension fund and decides on fundamental aspects, such as the amount and the structure of the pension benefits and the asset investment strategy. The foundation board is equally composed of employer and employees' representatives.

Due to the minimum yield for the obligatory retirement assets, a risk exists for the plans in Switzerland that additional resources would have to be allocated to the pension fund if it were to be underfinanced. The pension fund offers the plan members the option to choose a life-long pension instead of a one-time payment. This option gives rise to longevity and investment risks, since at the time of retirement, assumptions must be made regarding life expectancy and return on assets. As of January 1, 2018, T-Systems Schweiz decided to apply the risk-sharing method when measuring its pension obligations. The measurement of obligations was changed such that employee participation in funding a possible deficit can be taken into account when measuring the employer's obligation. The general option for employee participation in funding a deficit is covered by Art. 28 of the pension regulations.

Development of plan assets at fair value in the respective reporting year

millions of €	2020	2019
Plan assets at fair value as of January 1	**6,489**	**6,099**
Changes attributable to business combinations/transfers of operation/acquisitions and disposals	1,108	0
Interest income on plan assets (calculated using the discount rate)	98	99
Amount by which the actual return exceeds (falls short of) the interest income on plan assets (remeasurement)	(702)	62
Contributions by employer	61	449
Contributions by plan participants	4	4
Benefits actually paid from plan assets	(217)	(241)
Settlements	0	0
Administration costs	0	0
Tax payments	0	0
Exchange rate fluctuations for plans in foreign currency	(143)	18
Plan assets at fair value as of December 31	**6,698**	**6,489**

Breakdown of plan assets at fair value by investment category

millions of €	Dec. 31, 2020	Of which: price in an active market	Of which: price without an active market	Dec. 31, 2019	Of which: price in an active market	Of which: price without an active market
Equity securities	4,264	4,264	0	4,564	4,564	0
Of which: shares in BT	1,762	1,762	0	2,704	2,704	0
Debt securities	1,853	1,853	0	1,113	1,113	0
Real estate	102	38	64	64	64	0
Derivatives	0	0	0	0	0	0
Investment funds	14	14	0	11	11	0
Asset-backed securities	0	0	0	0	0	0
Structured debt instruments	0	0	0	350	350	0
Cash and cash equivalents	43	43	0	275	275	0
Other	422	378	45	112	70	42
Plan assets at fair value	**6,698**	**6,590**	**109**	**6,489**	**6,447**	**42**

The investment policy and risk management is set in line with the risk and development characteristics of the pension obligations. On the basis of a systematic, integrated asset/liability management analysis, potential results from different investment portfolios, which can cover a large number of asset classes, are compared with the stochastically simulated development of the pension obligations, thereby explicitly considering the relative development of plan assets against the pension obligations. The investment strategy is mainly characterized by the objective of satisfying future obligations from granted pension commitments on time by systematically setting up and professionally managing a suitable portfolio for the plan assets. It essentially aims to establish a widely diversified investment portfolio that generates a risk profile appropriate to the overall objective, by means of corresponding risk factors and diversification. The management of investments is subject to continuous monitoring to ensure active risk management. Cost-efficient investment management is effected by means of professional portfolio management involving external service providers.

At the reporting date, the plan assets at fair value included shares amounting to EUR 4,573 thousand (December 31, 2019: EUR 3,706 thousand) and bonds amounting to EUR 7,942 thousand (December 31, 2019: EUR 6,688 thousand) issued by Deutsche Telekom AG and its subsidiaries.

Development of the effect of the asset ceiling

millions of €

	2020	2019
Effect of asset ceiling as of January 1	**9**	**0**
Interest expense on asset ceiling (recognized in the income statement)	0	0
Changes in asset ceiling ((gains) losses recognized in equity)	(7)	9
Currency gain (loss)	0	0
Effect of asset ceiling as of December 31	**2**	**9**

Breakdown of defined benefit costs in the income statement

millions of €

	Disclosure in income statement	2020	2019	2018
Current service cost	Personnel costs	256	250	257
Past service cost (due to plan amendments/curtailments)	Personnel costs	(223)	(8)	(42)
Settlements	Personnel costs	8	3	3
Service cost		**41**	**245**	**217**
Interest cost	Other financial income (expense)	183	186	184
Interest income on plan assets (calculated using the discount rate)	Other financial income (expense)	(98)	(99)	(88)
Interest expense on the effect of the asset ceiling	Other financial income (expense)	0	0	0
Net interest expense (income) on net defined benefit liability (asset)		**86**	**87**	**96**
Defined benefit cost		**126**	**332**	**313**
Administration costs actually incurred (paid from plan assets)	Personnel costs	0	0	0
Total amounts recognized in profit or loss		**126**	**332**	**313**

Amounts recognized in the consolidated statement of comprehensive income

millions of €

	2020	2019	2018
Remeasurement ((gain) loss recognized in other comprehensive income in the financial year)	**1,358**	**603**	**(127)**
Of which: remeasurement due to a change in defined benefit obligations	663	656	51
Of which: remeasurement due to a change in plan assets	702	(62)	(179)
Of which: remeasurement due to changes in the effect of asset ceiling (according to IAS 19.64)	(7)	9	0

Total benefit payments expected

millions of €	2021	2022	2023	2024	2025
Benefits paid from pension provisions	335	513	556	614	593
Benefits paid from plan assets	118	94	98	101	102
Total benefits expected	**453**	**607**	**654**	**715**	**695**

Since 2018, benefit payments for direct pension commitments have also been funded using CTA assets. Furthermore, Deutsche Telekom reserves the right to claim reimbursement from CTA assets in the following year, as required, for payments made directly by the employer. The last time this happened was in 2018.

For 2021, Deutsche Telekom does not plan any allocations to plan assets at fair value in Germany. Deutsche Telekom is planning an international allocation of at least EUR 82 million in 2021.

Defined contribution plans
The employer's contribution paid to the statutory pension scheme (Deutsche Rentenversicherung) in Germany in the 2020 financial year totaled EUR 0.4 billion (2019: EUR 0.4 billion; 2018: EUR 0.4 billion). Group-wide, EUR 164 million (2019: EUR 145 million, 2018: EUR 120 million) from current contributions for additional defined contribution plans was recognized in the consolidated income statement in 2020.

Civil-servant retirement arrangements at Deutsche Telekom
An expense of EUR 374 million was recognized in the 2020 financial year (2019: EUR 405 million; 2018: EUR 441 million) for the annual contribution to the Civil Service Pension Fund, which generally amounts to 33 % of the pensionable gross emoluments of active civil servants and the notional pensionable gross emoluments of civil servants on leave of absence. The present value of future payment obligations was EUR 1.8 billion as of the reporting date (December 31, 2019: EUR 2.1 billion, December 31, 2018: EUR 2.5 billion) and is shown under other financial obligations.

For further information, please refer to Note 39 "Other financial obligations."

16 Other provisions

millions of €	Provisions for termination benefits	Other provisions for personnel costs	Provisions for restoration obligations	Provisions for litigation risks	Provisions for sales and procurement support	Miscellaneous other provisions	Total
At December 31, 2018	**255**	**3,010**	**1,564**	**289**	**456**	**862**	**6,435**
Of which: current	168	1,662	35	266	456	557	3,144
Transfer resulting from change in accounting standards	0	0	0	0	0	(184)	(184)
Changes in the composition of the Group	0	28	17	0	0	33	77
Currency translation adjustments	0	10	10	1	3	1	26
Addition	29	2,098	191	75	437	262	3,092
Use	(122)	(1,763)	(86)	(26)	(414)	(200)	(2,611)
Reversal	(3)	(70)	(77)	(57)	(16)	(98)	(321)
Interest effect	0	142	88	1	0	(1)	230
Other changes	1	(94)	0	0	0	12	(81)
At December 31, 2019	**160**	**3,361**	**1,707**	**284**	**466**	**685**	**6,663**
Of which: current	159	1,694	31	261	466	471	3,082
Transfer resulting from change in accounting standards	0	0	0	0	0	0	0
Changes in the composition of the Group	81	490	1,016	234	67	20	1,907
Currency translation adjustments	(21)	(99)	(170)	(24)	(24)	(9)	(348)
Addition	251	2,625	288	119	605	294	4,183
Use	(47)	(1,930)	(67)	(231)	(507)	(192)	(2,974)
Reversal	(122)	(307)	(59)	(61)	(50)	(92)	(690)
Interest effect	0	397	100	(3)	0	1	494
Other changes	0	(155)	(35)	(2)	0	(9)	(202)
At December 31, 2020	**302**	**4,382**	**2,778**	**317**	**557**	**697**	**9,033**
Of which: current	302	1,992	46	288	557	454	3,638

In the measurement of the other provisions, Deutsche Telekom is exposed to interest rate fluctuations, which is why the effect of a possible change in the interest rate on the principal non-current provisions was simulated. The other, non-staff-related provisions are discounted using maturity-related discount rates specific to the respective currency area. To this end, Deutsche Telekom determines discount rates with maturities of up to 30 years. In 2020, the discount rates ranged from 0.00 % to 1.21 % (2019: from 0.00 % to 2.41 %) in the euro currency area and from 0.78 % to 3.61 % (2019: from 2.60 % to 4.35 %) in the U.S. dollar currency area. If the discount rate were increased by 50 basis points with no other change in the assumptions, the present value of the principal other non-current provisions would decrease by EUR 123.2 million (December 31, 2019: EUR 109.0 million). If the discount rate were decreased by 50 basis points with no other change in the assumptions, the present value of the principal other non-current provisions would increase by EUR 126.2 million (December 31, 2019: EUR 111.7 million).

Provisions for termination benefits and other personnel provisions include provisions for staff restructuring. These provisions developed as follows in the 2020 financial year:

millions of €	Jan. 1, 2020	Changes in the composition of the Group	Addition	Use	Reversal	Other changes	Dec. 31, 2020
Severance and voluntary redundancy models	160	81	251	(47)	(122)	(21)	302
Phased retirement	733	0	677	(427)	0	(117)	866
	893	**81**	**928**	**(474)**	**(122)**	**(138)**	**1,168**
Of which: current	372						553

The carrying amount of current and non-current other provisions increased by EUR 2.4 billion compared with December 31, 2019 to EUR 9.0 billion. EUR 1.9 billion of this related to the business combination of T-Mobile US and Sprint.

Under other provisions for personnel costs, the provisions recognized for the Civil Service Health Insurance Fund (Postbeamtenkrankenkasse – PBeaKK) increased by EUR 0.5 billion, which is attributable to the subsequent measurement of the present value determined using actuarial principles (interest effect) and other additions. Other provisions for personnel costs also include provisions for deferred compensation and allowances, as well as for anniversary gifts.

Provisions for restoration obligations include the estimated costs for dismantling and removing an asset, and restoring the site on which it is located. The estimated costs are included in the costs of the relevant asset. The provisions for litigation risks primarily relate to possible settlements attributable to pending lawsuits. Provisions for sales and procurement support are recognized for dealer commissions, market development funds (advertising subsidies), and refunds. Miscellaneous other provisions include a large number of low-value individual items, such as provisions related to executory contracts, the disposal of businesses and site closures, in particular in prior financial years, as well as warranty and environmental damage provisions.

For further information on litigation risks from pending lawsuits, please refer to Note 37 "Contingencies."

17 Other liabilities

millions of €	Dec. 31, 2020	Of which: current	Dec. 31, 2019	Of which: current
Early retirement	1,145	411	1,097	392
Deferred revenue	105	51	153	110
Liabilities from other taxes	1,702	1,702	1,197	1,197
Other deferred revenue	386	240	316	142
Liabilities from severance payments	102	102	99	98
Liabilities – publicly funded projects	1,445	183	1,198	340
Miscellaneous other liabilities	746	524	762	571
	5,631	**3,213**	**4,822**	**2,850**

The carrying amount of current and non-current other liabilities increased by EUR 0.8 billion to EUR 5.6 billion. The inclusion of Sprint resulted in an increase of EUR 0.7 billion. Liabilities from early retirement arrangements for civil servants exist vis-à-vis the Civil Service Pension Fund and arise from payment obligations under agreements that had already been concluded. The obligations are payable in up to seven annual installments following retirement. In addition, other liabilities increased by EUR 0.2 billion due to existing build-out obligations in connection with grants receivable from funding projects for the broadband build-out in the Germany operating segment.

18 Contract liabilities

The carrying amount of current and non-current contract liabilities decreased year-on-year from EUR 2.1 billion to EUR 2.0 billion. These mainly comprise deferred revenues. The inclusion of Sprint resulted in an increase in the carrying amount of EUR 0.3 billion. Revenue of EUR 1,343 million (2019: EUR 1,277 million) from contract liabilities that were still outstanding as of December 31, 2019 was realized in the reporting year. Of the total of contract liabilities, EUR 1,625 million (December 31, 2019: EUR 1,608 million) is due within one year.

19 Shareholders' equity

Issued capital

As of December 31, 2020, the share capital of Deutsche Telekom totaled EUR 12,189 million. The share capital is divided into 4,761,458,596 no par value registered shares.

	2020		2019	
	thousands	%	thousands	%
Federal Republic of Germany – Berlin, Germany	689,601	14.5	689,601	14.5
KfW Bankengruppe – Frankfurt/Main, Germany	829,179	17.4	829,179	17.4
Free float	3,242,679	68.1	3,242,679	68.1
Of which: BlackRock, Inc. – Wilmington, DE, United States[a]	234,194		234,194	
	4,761,459	**100.0**	**4,761,459**	**100.0**

[a] According to the last notification from BlackRock published on September 22, 2017, the reporting threshold of 3 % of the voting rights was exceeded. The stake in Deutsche Telekom was thus 4.92 % of the voting rights on September 15, 2017.

Treasury shares. The amount of issued capital assigned to treasury shares was approximately EUR 46 million at December 31, 2020. This equates to 0.4 % of share capital. 18,002,303 treasury shares were held at December 31, 2020. The shareholders' meeting resolved on May 25, 2016 to authorize the Board of Management to purchase shares in the Company by May 24, 2021, with the amount of share capital accounted for by these shares totaling up to EUR 1,179,302,878.72, provided the shares to be purchased on the basis of this authorization in conjunction with the other shares of the Company that the Company has already purchased and still possesses or are to be assigned to it under § 71d and § 71e AktG do not at any time account for more than 10 % of the Company's share capital. Moreover, the requirements under § 71 (2) sentences 2 and 3 AktG must be complied with. Shares shall not be purchased for the purpose of trading in treasury shares. This authorization may be exercised in full or in part. The purchase can be carried out in partial tranches spread over various purchase dates within the authorization period until the maximum purchase volume is reached. Dependent Group companies of Deutsche Telekom AG within the meaning of § 17 AktG or third parties acting for the account of Deutsche Telekom AG or for the account of dependent Group companies of Deutsche Telekom AG within the meaning of § 17 AktG are also entitled to purchase the shares. The shares are purchased through the stock exchange in adherence to the principle of equal treatment (§ 53a AktG). Shares can instead also be purchased by means of a public purchase or share exchange offer addressed to all shareholders, which, subject to a subsequently approved exclusion of the right to offer shares, must also comply with the principle of equal treatment.

The shares may be used for one or several of the purposes permitted by the authorization granted by the shareholders' meeting on May 25, 2016 under item 6 on the agenda. The shares may also be used for purposes involving an exclusion of subscription rights. They may also be sold on the stock market or by way of an offer to all shareholders, or withdrawn. The shares may also be used to fulfill the rights of Board of Management members to receive shares in Deutsche Telekom AG, which the Supervisory Board has granted to these members as part of the arrangements governing the compensation of the Board of Management, on the basis of a decision by the Supervisory Board to this effect.

Under the resolution of the shareholders' meeting on May 25, 2016, the Board of Management is also authorized to acquire the shares through the use of equity derivatives.

On the basis of the authorization by the shareholders' meeting on May 25, 2016 described above and corresponding authorizations by the shareholders' meeting on May 12, 2011 and May 24, 2012, 110 thousand shares were acquired in June 2011, 206 thousand shares in September 2011, and 268 thousand shares in January 2013. The total volumes amounted to EUR 2,762 thousand in the 2011 financial year, and EUR 2,394 thousand in the 2013 financial year (excluding transaction costs). This increased the number of treasury shares by 316 thousand and 268 thousand, respectively. Further, 90 thousand shares and 860 thousand shares were acquired in September and October 2015, respectively, for an aggregate amount of EUR 14,787 thousand (excluding transaction costs); these acquisitions increased the number of treasury shares by 950 thousand.

No treasury shares were acquired in the reporting period.

As part of the Share Matching Plan, a total of 2 thousand treasury shares were transferred free of charge to the custody accounts of eligible participants in 2012 and 2013, respectively. A further 90 thousand treasury shares were transferred free of charge in the 2014 financial year. An additional 140 thousand treasury shares were transferred in 2015. In the 2016 financial year, 232 thousand treasury shares were transferred, 300 thousand treasury shares were transferred in the 2017 financial year, and 312 thousand in the 2018 financial year. In the 2019 financial year, 448 thousand treasury shares were transferred to the custody accounts of eligible participants. Transfers of treasury shares to the custody accounts of employees of Deutsche Telekom AG are free of charge. In cases where treasury shares are transferred to the custody accounts of employees of other Group companies, the costs have been transferred at fair value to the respective Group company since the 2016 financial year.

In all months of the reporting year with the exception of March and August, treasury shares (523 thousand in total) were reallocated and transferred to the custody accounts of eligible participants of the Share Matching Plan. As of December 31, 2020, disposals of treasury shares resulting from the transfers in the reporting period accounted for 0.01 %, or EUR 1,338 thousand, of share capital. Gains on disposal arising from transfers of treasury shares amounted to EUR 7,426 thousand. Transfers of treasury shares increased retained earnings by EUR 36 thousand and capital reserves by EUR 6,052 thousand. In the reporting year, 266 thousand treasury shares with a fair value of EUR 3,885 thousand were billed to other Group companies.

As part of the acquisition of VoiceStream Wireless Corp., Bellevue, and Powertel, Inc., Bellevue, in 2001, Deutsche Telekom AG issued new shares from authorized capital to a trustee, for the benefit of holders of warrants, options, and conversion rights, among others. These options or conversion rights expired in full in the 2013 financial year. As a result, the trustee no longer had any obligation to fulfill any claims in accordance with the purpose of the deposit. The trust relationship was terminated at the start of 2016 and the deposited shares were transferred free of charge to a custody account of Deutsche Telekom AG. The previously deposited shares are accounted for in the same way as treasury shares in accordance with § 272 (1a) HGB. On the basis of authorization by the shareholders' meeting on May 25, 2016, the treasury shares acquired free of charge may be used for the same purposes as the treasury shares acquired for a consideration. In the 2019 financial year, 61 thousand previously deposited shares were reallocated for issue to eligible participants of the Share Matching Plan. In the reporting year, 558 thousand shares were reallocated.

Voting rights. Each share entitles the holder to one vote. These voting rights are restricted, however, in relation to treasury shares (at December 31, 2020: around 18 million in total).

Authorized capital and contingent capital. Authorized capital and contingent capital comprised the following components as of December 31, 2020:

	Amount millions of €	No par value shares thousands	Purpose
2017 Authorized capital	3,600	1,406,250	Capital increase against cash contribution/contribution in kind until May 30, 2022
2018 Contingent capital	1,200	468,750	Servicing convertible bonds and/or bonds with warrants issued on or before May 16, 2023

Transactions with owners

millions of €

	2020			2019		
	Issued capital and reserves attributable to owners of the parent	Non-controlling interests	Total shareholders' equity	Issued capital and reserves attributable to owners of the parent	Non-controlling interests	Total shareholders' equity
Changes in the composition of the Group	**0**	**17,329**	**17,329**	**0**	**239**	**239**
Acquisition of Sprint	0	17,331	17,331	0	0	0
Acquisition of Tele2 Netherlands	0	0	0	0	239	239
Other effects	0	(2)	(2)	0	0	0
Transactions with owners	**7,299**	**5,967**	**13,266**	**73**	**340**	**413**
Acquisition of Sprint	7,474	5,915	13,389	0	0	0
Acquisition of Tele2 Netherlands	0	0	0	293	226	519
Magyar Telekom share buy-back	68	(83)	(15)	0	0	0
OTE share buy-back	(40)	(103)	(143)	(29)	(81)	(110)
Hrvatski Telekom share buy-back	5	(17)	(12)	0	0	0
Capital restructuring, Romania	0	0	0	(51)	51	0
Other effects	(208)	255	47	(140)	144	4

The amounts recognized in shareholders' equity as transactions with owners and as changes in the composition of the Group mainly relate to the business combination of T-Mobile US with Sprint, consummated on April 1, 2020.

For further information, please refer to the section "Summary of accounting policies – Changes in the composition of the Group and other transactions."

Non-controlling interests: total other comprehensive income
Total other comprehensive income of non-controlling interests primarily comprises remeasurement effects as part of the acquisition of the OTE group totaling EUR 0.4 billion (December 31, 2019: EUR 0.4 billion), as well as offsetting currency translation effects of EUR 3.2 billion (December 31, 2019: EUR 0.1 billion), and remeasurement losses recognized directly in equity in connection with forward-payer swaps concluded for borrowings at T-Mobile US, which were terminated prematurely in April 2020 .

Notes to the consolidated income statement

20 Net revenue

Net revenue breaks down into the following revenue categories:

millions of €	2020	2019[a, b]	2018[a, b]
Revenue from the rendering of services	**79,807**	**65,583**	**61,653**
Germany	20,013	19,816	20,075
United States	45,653	31,313	27,755
Europe	9,428	9,613	9,467
Systems Solutions	3,091	3,282	3,330
Group Development	1,545	1,487	967
Group Headquarters & Group Services	77	71	59
Revenue from the sale of goods and merchandise[c]	**16,054**	**12,907**	**12,442**
Germany	2,185	2,298	2,266
United States	11,922	8,569	8,170
Europe	1,484	1,553	1,588
Systems Solutions	74	93	96
Group Development	389	394	322
Group Headquarters & Group Services	0	0	0
Revenue from the use of entity assets by others	**5,138**	**2,041**	**1,561**
Germany	815	829	492
United States	3,631	536	596
Europe	227	229	51
Systems Solutions	78	47	9
Group Development	269	276	290
Group Headquarters & Group Services	118	124	123
Net revenue	**100,999**	**80,531**	**75,656**

[a] Prior-year figures were adjusted retrospectively on account of a change in the allocation between revenue categories. This change relates to revenue from the use of entity assets by others of EUR 290 million in 2018 in the Group Development operating segment that had been reported under revenue from the rendering of services in the 2018 Annual Report.

[b] The breakdown of revenue categories for the 2019 financial year was adjusted retrospectively in connection with the realignment of the B2B telecommunications business.

[c] Revenue from the sale of goods and merchandise includes interest income of EUR 278 million in the reporting year, calculated using the effective interest method (2019: EUR 345 million; 2018: EUR 305 million). This income is primarily attributable to accrued interest on receivables in connection with handsets sold under installment plans in the United States operating segment.

Net revenue for the reporting year was EUR 101.0 billion, up EUR 20.5 billion on the prior-year level. The United States operating segment in particular contributed to the positive revenue trend, mainly as a result of the business combination with Sprint, consummated on April 1, 2020.

For information on changes in net revenue, please refer to the section "Development of business in the Group" in the combined management report.

The total transaction price attributable to performance obligations that have not been fulfilled or, in some cases, not yet fulfilled at the end of the reporting year (hereinafter: outstanding transaction price) amounts to EUR 21,821 million (2019: EUR 19,059 million).

The portion of the outstanding transaction price attributable to performance obligations that have not been fulfilled or not yet completely fulfilled at the end of the reporting year is generally recognized as revenue over the remaining term of the service contracts concluded. Since most service contracts – unless they can be canceled at any time – have a minimum contract term of 24 months, an average remaining term of approximately 12 months can be assumed, provided the course of business in the mass business remains virtually unchanged. The disclosures only refer to transactions within the scope of IFRS 15, i.e., they do not include portions of the transaction price being allocated to performance obligations outside the scope of the standard, e.g., leases.

Deutsche Telekom generally makes use of the practical expedients in IFRS 15, according to which outstanding performance obligations under contracts with an expected original term of no more than one year and revenues recognized in accordance with the billed amounts are exempt from the disclosure requirement. Individual subsidiaries deviate from this general approach and have not made use of these practical expedients for groups of contracts with similar characteristics.

Service concession arrangements

Satellic NV, Machelen, Belgium, is a fully consolidated subsidiary of Deutsche Telekom and on July 25, 2014 signed a contractual arrangement with Viapass, the public agency responsible for toll collection in Belgium, for the set-up, operation, and financing of an electronic toll collection system. After Viapass accepted the system on March 30, 2016, the set-up phase was completed on March 31, 2016. The operation phase that follows will have a duration of twelve years, with the additional option for Viapass to extend the term three times by one year. Satellic has no entitlement to the toll revenue collected but will receive contractually agreed fees for setting up and operating the system. Viapass is authorized to terminate the arrangement giving notice of six months with payment of reasonable compensation. In the event of regular or premature termination of the agreement, Satellic has an obligation to hand over to Viapass, on request, material assets for the operation of the toll collection system that have not yet passed to the ownership of Viapass; in such an event, however, the software platform for toll collection would not be handed over to Viapass. The agreement was classified as a service concession arrangement within the meaning of IFRIC 12. Since the start of the operation phase on April 1, 2016, the separate fees for operation and maintenance services have been recognized as revenue in the respective periods, which totaled EUR 79 million in the reporting year (2019: EUR 66 million, 2018: EUR 67 million).

21 Other operating income

millions of €	2020	2019	2018
Income from the reversal of impairment losses on non-current assets	1,661	7	8
Income from the disposal of non-current assets	129	101	291
Income from reimbursements	140	144	164
Income from insurance compensation	73	122	335
Income from ancillary services	19	25	29
Miscellaneous other operating income	858	722	663
Of which: income from divestitures and from the sale of stakes accounted for using the equity method	10	145	0
	2,879	**1,121**	**1,491**

Income from the reversal of impairment losses on non-current assets of EUR 1.6 billion resulted from the partial reversal of impairment losses on spectrum licenses at T-Mobile US, which increased their carrying amount. This item also included income of EUR 50 million from reversals of impairment losses in connection with the sale of the Romanian fixed-network business. Miscellaneous other operating income includes a structuring fee from SoftBank of EUR 0.3 billion, which T-Mobile US received in return for support in the immediate sale of T-Mobile US shares by SoftBank. The prior-year period, 2019, included income from the divestitures of shares accounted for using the equity method as a result of the transfer on August 14, 2019 of the 11.34 % stake in Ströer SE & Co. KGaA to Deutsche Telekom Trust e.V. as plan assets. In addition, miscellaneous other operating income includes a large number of individual items accounting for marginal amounts.

For further information on the reversals of impairment losses, please refer to Note 6 “Intangible assets.”

22 Changes in inventories

Changes in inventories comprise both volume- and value-based increases and decreases in inventories of finished goods and merchandise, and work in process. There were no significant changes in inventories in the reporting year or in prior years.

23 Own capitalized costs

Own capitalized costs amounted to EUR 2.8 billion in the reporting year (2019: EUR 2.4 billion, 2018: EUR 2.4 billion) and mainly relate to investments in network build-out and the development of platforms for cell sites.

24 Goods and services purchased

millions of €

	2020	2019	2018
Expenses for raw materials and supplies	1,954	1,679	1,711
Expenses for merchandise	19,498	15,532	15,031
Expenses for services purchased	23,222	19,746	21,418
	44,674	**36,956**	**38,160**

25 Average number of employees and personnel costs

		2020	2019	2018
Group (total)		**223,539**	**212,846**	**216,369**
Germany		91,512	96,018	100,227
International		132,027	116,827	116,142
Non-civil servants		212,148	200,174	202,010
Civil servants (domestic, active service relationship)		11,391	12,672	14,359
Trainees and students on cooperative degree courses		4,905	6,136	5,713
Personnel costs	millions of €	**18,853**	**16,723**	**16,436**
Of which: wages and salaries	millions of €	15,929	13,655	13,507
Of which: social security contributions and pension benefit costs	millions of €	2,924	3,068	2,929

The average headcount increased by 5.0 % compared with the prior year. It decreased in Germany by 4.7 % due in particular to efficiency enhancement measures and the take-up of socially responsible instruments in connection with staff restructuring in the Germany operating segment and the domestic parts of the Group Headquarters & Group Services segment and in the Systems Solutions operating segment. By contrast, the average headcount outside Germany increased by 13.0 %, driven mainly by the integration of Sprint employees following the business combination of T-Mobile US and Sprint in the United States. Furthermore, the international share increased in most segments – with the exception of the Europe operating segment, in which the average international headcount fell by 7.7 %, and the Group Development operating segment, with a slight decline of 2.3 % in the Netherlands.

Personnel costs increased by 12.7 % year-on-year, mainly due to the business combination of T-Mobile US and Sprint in the United States operating segment, with the associated increases in headcount and the related expenses in connection with the integration. In all other segments, lower headcounts resulted in reduced personnel costs. The agreed salary increases from the collective agreements concluded in 2020 had an offsetting effect. All segments with the exception of Group Headquarters & Group Services and Group Development also recorded (in some cases substantial) increases in expenses for restructuring measures.

26 Other operating expenses

millions of €

	2020	2019	2018
Impairment losses on financial assets	862	452	394
Gains (losses) from the write-off of financial assets measured at amortized cost	188	42	120
Other	3,425	2,807	2,620
Legal and audit fees	510	328	338
Losses from asset disposals	497	213	165
Income (losses) from the measurement of factoring receivables	6	129	126
Other taxes	452	427	476
Cash and guarantee transaction costs	491	355	339
Insurance expenses	117	98	93
Miscellaneous other operating expenses	1,354	1,258	1,083
	4,476	**3,301**	**3,134**

Miscellaneous other operating expenses comprise a large number of low-value individual items, including other administrative expenses and fees totaling EUR 162 million (2019: EUR 176 million, 2018: EUR 181 million).

27 Depreciation, amortization and impairment losses

The following table provides a breakdown of depreciation, amortization and impairment losses:

millions of €	2020	2019	2018
Amortization and impairment of intangible assets	**6,997**	**4,806**	**5,021**
Of which: impairment losses	525	74	685
Of which: impairment losses on mobile licenses	152	0	19
Of which: amortization of mobile licenses	1,140	1,080	1,049
Depreciation and impairment of property, plant and equipment	**13,706**	**9,208**	**8,814**
Of which: impairment losses	210	319	38
Depreciation of right-of-use assets[a]	**5,126**	**3,649**	**n.a.**
Of which: impairment losses	63	0	n.a.
	25,829	**17,663**	**13,836**

[a] The IFRS 16 “Leases” accounting standard has been applied since January 1, 2019. Prior-year comparatives were not adjusted.

Impairment losses break down as follows:

millions of €	2020	2019	2018
Intangible assets	**525**	**74**	**685**
Of which: goodwill from the year-end impairment test	26	0	639
Of which: in connection with the ad hoc impairment test in the Systems Solutions cash-generating unit[a]	343	n.a.	n.a.
Of which: in connection with the ad hoc impairment test in the Romania cash-generating unit	126	24	n.a.
Property, plant and equipment	**210**	**319**	**38**
Of which: in connection with the ad hoc impairment test in the Systems Solutions cash-generating unit	127	0	0
Of which: in connection with the ad hoc impairment test in the Romania cash-generating unit	34	296	0
Right-of-use assets[b]	**63**	**0**	**n.a.**
	798	**393**	**722**

[a] Of the impairment losses, EUR 44 million relate to intangible assets in the Group Headquarters & Group Services segment that are subject to use by the Systems Solutions operating segment and are allocated to the Systems Solutions cash-generating unit for the purposes of impairment testing.

[b] The IFRS 16 “Leases” accounting standard has been applied since January 1, 2019. Prior-year comparatives were not adjusted.

Depreciation, amortization and impairment losses on intangible assets, property, plant and equipment, and right-of-use assets increased by EUR 8.2 billion year-on-year to EUR 25.8 billion. Depreciation of property, plant and equipment increased by EUR 4.6 billion and amortization of intangible assets by EUR 1.7 billion. Depreciation of right-of-use assets increased by EUR 1.4 billion. These increases are all largely due to the completed business combination with Sprint. In the United States operating segment, a reduction in the useful life of leased network technology for cell sites following the business combination of T-Mobile US and Sprint increased depreciation of the corresponding right-of-use assets by EUR 0.1 billion. Impairment losses increased year-on-year by EUR 0.4 billion to EUR 0.8 billion. Impairment losses on goodwill resulting from year-end impairment tests relate to the Montenegro cash-generating unit. EUR 0.5 billion of these impairment losses resulted from an ad hoc impairment test of assets assigned to the Systems Solutions cash-generating unit and relate to intangible assets and property, plant and equipment in the Systems Solutions operating segment and in the Group Headquarters & Group Services segment. EUR 0.2 billion of this is attributable to another ad hoc impairment test of the assets assigned to the Romania cash-generating unit. This also relates to intangible assets and property, plant and equipment. In 2019, these included impairment losses of EUR 0.3 billion in particular on property, plant and equipment in the Romania cash-generating unit on account of the ad hoc impairment test conducted at year-end.

For further information, please refer to Note 6 “Intangible assets,” Note 7 “Property, plant and equipment,” and Note 8 “Right-of-use assets – lessee relationships.”

28 Finance costs

millions of €	2020	2019	2018
Interest income	414	348	277
Interest expense	(4,638)	(2,712)	(2,094)
	(4,224)	**(2,364)**	**(1,817)**
Of which: from leases	(996)	(870)	n.a.
Of which: from finance leases	n.a.	n.a.	(131)
Of which: from financial instruments relating to measurement categories in accordance with IFRS 9			
Debt instruments measured at amortized cost	15	23	27
Debt instruments measured at fair value through other comprehensive income	0	0	0
Debt instruments measured at fair value through profit or loss	16	14	10
Financial liabilities measured at amortized cost[a]	(3,235)	(1,525)	(1,707)

[a] Interest expense calculated according to the effective interest method and adjusted for accrued interest from derivatives recognized in the reporting year that were used as hedging instruments against interest rate-based changes in the fair values of financial liabilities measured at amortized cost in the reporting year for hedge accounting in accordance with IFRS 9 (2020: interest income of EUR 377 million and interest expense of EUR 101 million; 2019: interest income of EUR 297 million and interest expense of EUR 54 million; 2018: interest income of EUR 223 million and interest expense of EUR 110 million).

The increase in finance costs is mainly due to the financial liabilities recognized and the restructuring begun in connection with the acquisition of Sprint, and the related increase in financing, including the handling charges incurred for a briefly utilized bridge loan facility. In connection with the premature termination of forward-payer swaps by T-Mobile US at the start of April 2020 and the associated losses recorded directly in equity, reclassifications to profit or loss of EUR 0.1 billion were made in 2020. In 2019, finance costs were mainly impacted by an effect of EUR 0.9 billion from the subsequent measurement of recognized lease liabilities since the first-time application of IFRS 16.

EUR 334 million (2019: EUR 343 million; 2018: EUR 290 million) was capitalized as part of acquisition costs in the reporting year. The amount was calculated on the basis of an interest rate in the average range between 3.2 % at the start of the year and 3.6 % at the end of the year (2019: between 3.5 % and 3.2 %; 2018: between 3.9 % and 3.5 %) applied across the Group.

Interest payments (including capitalized interest) of EUR 7.6 billion (2019: EUR 4.3 billion, 2018: EUR 3.6 billion) were made in the reporting year.

Accrued interest payments from derivatives (interest rate swaps) that were designated as hedging instruments in a fair value hedge in accordance with IFRS 9 are netted per swap contract and recognized as interest income or interest expense depending on the net amount. Finance costs are assigned to the measurement categories on the basis of the hedged item. Only financial liabilities were hedged in the reporting period.

29 Share of profit/loss of associates and joint ventures accounted for using the equity method

millions of €	2020	2019	2018
Share of profit (loss) of joint ventures	(16)	(7)	(536)
Share of profit (loss) of associates	4	93	6
	(12)	**87**	**(529)**

For further information, please refer to Note 10 "Investments accounted for using the equity method."

30 Other financial income/expense

millions of €	2020	2019	2018
Income from investments (without share of profit (loss) of associates and joint ventures accounted for using the equity method)	12	(11)	3
Gains (losses) from financial instruments	628	321	(352)
Interest component from measurement of provisions and liabilities	(531)	(229)	(178)
Gains (losses) from the write-off of other financial assets measured at amortized cost	0	0	25
	109	**81**	**(502)**

All income/expense components including interest income and expense from financial instruments classified as at fair value through profit or loss in accordance with IFRS 9 are reported under other financial income/expense.

Other financial income/expense was unchanged at EUR 0.1 billion, due on the one hand to an increase in interest expense from the measurement of provisions and liabilities. This increase was attributable in particular to the subsequent measurement using actuarial principles of the present value of the provision recognized for the Civil Service Health Insurance Fund (Postbeamtenkrankenkasse – PBeaKK). On the other hand, the gains from financial instruments increased, in particular as a result of the subsequent measurement of the stock options to buy shares in T-Mobile US received from SoftBank in June 2020. Lower measurement effects from embedded derivatives at T-Mobile US compared with the prior year had an offsetting effect.

EUR 341 million (2019: EUR -14 million, 2018: EUR 57 million) of other financial income/expense related to currency translation effects, including gains/losses from derivatives used as hedges in foreign-currency hedge accounting, and EUR 287 million (2019: EUR 335 million, 2018: EUR -409 million) to gains/losses from other derivatives as well as measurements of equity investments.

For further information on financial instruments, please refer to Note 41 “Financial instruments and risk management.”

31 Income taxes

Income taxes in the consolidated income statement

A tax expense of EUR 1.9 billion was recorded in the 2020 financial year. In addition to the shares of the different countries in profit before income taxes with their respective national tax rates, the effective tax rate of 22 % reflects actual and deferred tax benefits of EUR 0.2 billion each from the Europe and United States operating segments, mainly from changes in tax rates, inorganic developments, and taxes from previous years.

In the prior-year period, a tax expense of EUR 2.0 billion had been recorded. A higher effective tax rate in combination with lower profit before income taxes meant that the tax expense remained more or less at this level.

The following table provides a breakdown of income taxes in Germany and internationally:

millions of €	2020	2019	2018
Current taxes	**924**	**883**	**592**
Germany	391	488	217
International	533	395	375
Deferred taxes	**1,005**	**1,110**	**1,232**
Germany	145	314	334
International	860	796	898
	1,929	**1,993**	**1,824**

Deutsche Telekom’s combined income tax rate for 2020 amounts to 31.4 % (2019: 31.4 %, 2018: 31.4 %). It consists of corporate income tax at a rate of 15.0 %, the solidarity surcharge of 5.5 % on corporate income tax, and trade tax at an average multiplier of 445 % (2019: 445 %, 2018: 445 %).

Reconciliation of the effective tax rate. Income taxes of EUR -1,929 million (as expense) in the reporting year (2019: EUR -1,993 million (as expense), 2018: EUR -1,824 million (as expense)) are derived as follows from the expected income tax expense/benefit that would have arisen had the statutory income tax rate of the parent company (combined income tax rate) been applied to profit/loss before income taxes:

millions of €	2020	2019	2018
Profit (loss) before income taxes	**8,677**	**7,260**	**5,153**
Expected income tax expense (benefit) (income tax rate applicable to Deutsche Telekom AG: 2020: 31.4 %, 2019: 31.4 %, 2018: 31.4 %)	2,724	2,280	1,618
Adjustments to expected tax expense (benefit)			
Effect of changes in statutory tax rates	(139)	(41)	39
Tax effects from prior years	36	(18)	158
Tax effects from other income taxes	297	258	114
Non-taxable income	(32)	(26)	(16)
Tax effects from equity investments	8	(46)	(112)
Non-deductible expenses	192	140	170
Permanent differences	(457)	(23)	(57)
Goodwill impairment losses	(6)	(14)	186
Tax effects from loss carryforwards	1	43	22
Tax effects from additions to and reductions of local taxes	62	71	189
Adjustment of taxes to different foreign tax rates	(755)	(633)	(489)
Other tax effects	(2)	2	2
Income tax expense (benefit) according to the consolidated income statement	**1,929**	**1,993**	**1,824**
Effective income tax rate	22	27	35

Current income taxes in the consolidated income statement

The following table provides a breakdown of current income taxes:

millions of €	2020	2019	2018
Current income taxes	**924**	**883**	**592**
Of which: current tax expense	729	803	571
Of which: prior-period tax expense	195	80	21

Deferred taxes in the consolidated income statement

Deferred taxes developed as follows:

millions of €	2020	2019	2018
Deferred tax expense (benefit)	**1,005**	**1,110**	**1,232**
Of which: from temporary differences	2,819	446	1,217
Of which: from loss carryforwards	(1,891)	654	49
Of which: from tax credits	77	10	(34)

Income taxes in the consolidated statement of financial position

Current income taxes in the consolidated statement of financial position

millions of €

	Dec. 31, 2020	Dec. 31, 2019
Recoverable taxes	349	481
Tax liabilities	(690)	(463)
Current taxes recognized in other comprehensive income:		
Hedging instruments	(252)	(252)

Deferred taxes in the consolidated statement of financial position

millions of €

	Dec. 31, 2020	Dec. 31, 2019
Deferred tax assets	7,972	2,704
Deferred tax liabilities	(17,260)	(8,954)
	(9,288)	**(6,249)**
Of which: recognized in other comprehensive income:		
Gains (losses) from the remeasurement of defined benefit plans	1,582	1,440
Revaluation surplus	241	167
Hedging instruments	581	297
Recognized in other comprehensive income before non-controlling interests	**2,404**	**1,904**
Non-controlling interests	(286)	(107)
	2,118	**1,797**

Development of deferred taxes

millions of €

	Dec. 31, 2020	Dec. 31, 2019
Deferred taxes recognized in the statement of financial position	(9,288)	(6,249)
Difference to prior year	(3,039)	(959)
Of which: Recognized in income statement	(1,005)	(1,110)
Recognized in other comprehensive income	507	330
Recognized in capital reserves	74	0
Acquisitions (disposals) (including assets and disposal groups held for sale)	(3,211)	(75)
Currency translation adjustments	596	(104)

Development of deferred taxes on loss carryforwards

millions of €

	Dec. 31, 2020	Dec. 31, 2019
Deferred taxes on loss carryforwards before allowances	4,108	1,291
Difference to prior year	2,817	(626)
Of which: Recognition (derecognition)	1,869	(660)
Acquisitions (disposals) (including assets and disposal groups held for sale)	1,071	0
Currency translation adjustments	(123)	34

Deferred taxes relate to the following key items in the statement of financial position, loss carryforwards, and tax credits:

millions of €	Dec. 31, 2020		Dec. 31, 2019	
	Deferred tax assets	Deferred tax liabilities	Deferred tax assets	Deferred tax liabilities
Current assets	**1,726**	**(1,116)**	**1,623**	**(1,142)**
Trade receivables	791	(116)	881	(154)
Inventories	120	0	75	0
Other assets	808	(287)	661	(271)
Contract assets	7	(713)	6	(717)
Non-current assets	**3,636**	**(29,780)**	**2,911**	**(17,846)**
Intangible assets	675	(18,369)	567	(7,956)
Property, plant and equipment	1,379	(1,899)	811	(4,445)
Other financial assets	1,580	(9,157)	1,532	(5,096)
Capitalized contract costs	2	(355)	1	(349)
Current liabilities	**1,974**	**(733)**	**1,543**	**(790)**
Financial liabilities	698	(208)	506	(375)
Trade and other payables	60	(16)	58	(13)
Other provisions	346	(91)	274	(82)
Other liabilities	623	(337)	490	(245)
Contract liabilities	247	(81)	215	(75)
Non-current liabilities	**13,986**	**(2,953)**	**8,978**	**(2,891)**
Financial liabilities	3,301	(1,051)	1,986	(1,252)
Provisions for pensions and other employee benefits	2,159	(1,531)	1,843	(1,392)
Other provisions	992	(231)	783	(212)
Other liabilities	7,397	(111)	4,234	(22)
Contract liabilities	137	(29)	132	(13)
Retained earnings	**1**	**(67)**	**18**	**(155)**
Tax credits	**310**	**0**	**270**	**0**
Loss carryforwards	**3,404**	**0**	**1,010**	**0**
Interest carryforwards	**324**	**0**	**221**	**0**
Total	**25,361**	**(34,649)**	**16,574**	**(22,824)**
Of which: non-current	22,956	(33,247)	13,547	(20,948)
Netting	(17,389)	17,389	(13,870)	13,870
Recognition	**7,972**	**(17,260)**	**2,704**	**(8,954)**

The loss carryforwards amount to:

millions of €	Dec. 31, 2020	Dec. 31, 2019
Loss carryforwards for corporate income tax purposes	**14,954**	**3,968**
Expiry within		
1 year	179	9
2 years	18	395
3 years	8	38
4 years	11	10
5 years	176	59
After 5 years	1,538	792
Unlimited carryforward period	13,023	2,665

Loss carryforwards and temporary differences for which no deferred taxes were recorded amount to:

millions of €	Dec. 31, 2020	Dec. 31, 2019
Loss carryforwards for corporate income tax purposes	**1,757**	**968**
Expiry within		
1 year	7	6
2 years	6	6
3 years	0	8
4 years	6	1
5 years	2	35
After 5 years	950	148
Unlimited carryforward period	786	764
Temporary differences in corporate income tax	**595**	**747**

In addition, no deferred taxes are recognized on trade tax loss carryforwards of EUR 85 million (December 31, 2019: EUR 58 million) and on temporary differences for trade tax purposes in the amount of EUR 7 million (December 31, 2019: EUR 0 million). Furthermore, apart from corporate income tax loss carryforwards, no deferred taxes amounting to EUR 431 million (December 31, 2019: EUR 112 million) were recognized for other foreign income tax loss carryforwards and, apart from temporary differences for trade tax purposes, no deferred taxes amounting to EUR 10 million (December 31, 2019: EUR 0 million) were recognized for other foreign income taxes.

No deferred tax assets were recognized on the aforementioned tax loss carryforwards and temporary differences as it is not probable that taxable profit will be available in the foreseeable future against which these tax loss carryforwards can be utilized.

A positive tax effect in the amount of EUR 3 million (2019: EUR 6 million, 2018: EUR 31 million) attributable to the utilization of tax loss carryforwards on which deferred tax assets had not yet been recognized, was recorded in the reporting year.

No deferred tax liabilities were recognized on temporary differences in connection with equity interests in subsidiaries amounting to EUR 817 million (December 31, 2019: EUR 920 million) as it is unlikely that these differences will be recognized in the near future.

Disclosure of tax effects relating to each component of other comprehensive income

millions of €

	2020			2019			2018		
	Before tax amount	Tax (expense) benefit	Net of tax amount	Before tax amount	Tax (expense) benefit	Net of tax amount	Before tax amount	Tax (expense) benefit	Net of tax amount
Items not subsequently reclassified to profit or loss (not recycled)									
Gains (losses) from the remeasurement of defined benefit plans	(1,358)	142	(1,216)	(603)	134	(469)	127	37	164
Gains (losses) from the remeasurement of equity instruments	62	0	62	99	0	99	(619)	(1)	(620)
Share of profit (loss) of investments accounted for using the equity method	0	0	0	0	0	0	0	0	0
	(1,296)	**142**	**(1,154)**	**(504)**	**134**	**(369)**	**(492)**	**36**	**(456)**
Items subsequently reclassified to profit or loss (recycled), if certain reasons are given									
Exchange differences on translating foreign operations									
Recognition of other comprehensive income in income statement	0	0	0	(8)	0	(8)	(1)	0	(1)
Change in other comprehensive income (not recognized in income statement)	(6,578)	0	(6,578)	463	0	463	1,033	0	1,033
Gains (losses) from the remeasurement of debt instruments									
Recognition of other comprehensive income in income statement	491	(26)	465	(47)	0	(47)	(75)	(3)	(78)
Change in other comprehensive income (not recognized in income statement)	(481)	30	(451)	34	(9)	25	84	0	84
Gains (losses) from hedging instruments (IAS 39 until December 2017, designated risk component)									
Recognition of other comprehensive income in income statement	431	(130)	301	(148)	46	(102)	(32)	10	(22)
Change in other comprehensive income (not recognized in income statement)	(1,446)	400	(1,046)	(483)	115	(368)	(382)	61	(321)
Gains (losses) from hedging instruments (IFRS 9 from January 2018, hedging costs)									
Recognition of other comprehensive income in income statement	2	(1)	1	2	(1)	1	3	(1)	2
Change in other comprehensive income (not recognized in income statement)	(30)	10	(20)	(9)	3	(6)	56	20	76
Share of profit (loss) of investments accounted for using the equity method									
Recognition of other comprehensive income in income statement	0	0	0	(7)	0	(7)	0	0	0
Change in other comprehensive income (not recognized in income statement)	1	0	1	11	0	11	7	0	7
	(7,610)	**283**	**(7,327)**	**(192)**	**154**	**(38)**	**693**	**87**	**780**
Other comprehensive income	**(8,906)**	**425**	**(8,481)**	**(696)**	**289**	**(407)**	**201**	**123**	**323**
Profit (loss)			6,747			5,268			3,329
Total comprehensive income			**(1,734)**			**4,861**			**3,652**

32 Profit/loss attributable to non-controlling interests

millions of €

	2020	2019	2018
T-Mobile US	2,287	1,325	915
Hrvatski Telekom	26	49	69
Hellenic Telecommunications Organization (OTE)	189	(27)	119
Magyar Telekom	58	63	65
T-Mobile Netherlands Holding B.V.	39	3	0
Other	(10)	(12)	(5)
	2,589	**1,401**	**1,163**

33 Earnings per share

Basic and diluted earnings per share are calculated in accordance with IAS 33 as follows:

		2020	2019	2018
Profit attributable to the owners of the parent (net profit (loss))	millions of €	4,158	3,867	2,166
Adjustment	millions of €	0	0	0
Adjusted net profit (loss) (basic/diluted)	millions of €	**4,158**	**3,867**	**2,166**
Number of ordinary shares issued	millions	4,761	4,761	4,761
Treasury shares	millions	(18)	(19)	(19)
Adjusted weighted average number of ordinary shares outstanding (basic/diluted)	millions	**4,743**	**4,743**	**4,742**
Earnings per share (basic/diluted)	€	**0.88**	**0.82**	**0.46**

The calculation of earnings per share (basic/diluted) is based on the time-weighted number of all ordinary shares outstanding. Furthermore, the weighted average number of ordinary shares outstanding is determined by deducting the weighted average number of treasury shares held by Deutsche Telekom AG. There are currently no significant diluting effects.

34 Dividend per share

For the 2020 financial year, the Board of Management proposes a dividend of EUR 0.60 for each no par value share carrying dividend rights. On the basis of this payout volume, total dividends in the amount of EUR 2,846 million would be appropriated to the no par value shares carrying dividend rights as of February 16, 2021. The final amount of the total dividend payment depends on the number of no par value shares carrying dividend rights as of the date of the resolution on the appropriation of net income as adopted on the day of the shareholders' meeting.

A dividend of EUR 0.60 for the 2019 financial year for each no par value share carrying dividend rights was paid out in 2020.

Other disclosures

35 Notes to the consolidated statement of cash flows

Net cash from operating activities

Net cash from operating activities increased by EUR 0.7 billion year-on-year to EUR 23.7 billion. This was attributable to the sustained positive performance of the operating segments, in particular in the United States including Sprint. Negative effects on net cash from operating activities related in part to the repayment of a Deutsche Bundespost treasury note (zero-coupon bond) issued by Deutsche Telekom AG in 1990 with a nominal amount of EUR 0.2 billion, which fell due on December 31, 2019 and was repaid on that date by a bank using its own funds. The payment by Deutsche Telekom AG to this bank was made on the following bank working day of January 2, 2020. The interest portion amounted to EUR 1.2 billion. In addition, the repayment of EUR 0.4 billion in the reporting period for another zero-coupon bond also had a negative impact. The interest portion amounted to EUR 0.4 billion. Net cash from operating activities was also negatively impacted in the amount of EUR 2.2 billion in the reporting period as a result of the premature termination of forward-payer swaps for borrowings raised at T-Mobile US. Excluding these effects, higher (net) interest payments, which were up by EUR 2.1 billion, had a negative impact on net cash from operating activities, mainly due to the financial liabilities recognized and the restructuring begun in connection with the acquisition of Sprint and the related increase in financing, including the handling charges incurred for a briefly utilized bridge loan facility. Income tax payments decreased by EUR 0.1 billion compared with the prior year. Factoring agreements of EUR 0.8 billion had a negative impact on net cash from operating activities in the reporting period, mainly as a result of the contractual termination of a revolving factoring agreement in the Germany operating segment. In the prior year, factoring agreements had had negative effects of EUR 0.3 billion.

Deutsche Telekom's working capital measures are focused on improvements in the area of liabilities as well as in the management of receivables and inventories. However, they are not used for active liquidity management. The negative effect on the change in assets carried as working capital is mainly attributable to the acquisition of mobile devices in connection with the terminal equipment lease model JUMP! On Demand and the increased stockpiling of new mobile devices in the United States operating segment. In addition, higher receivables from wholesale partners and higher receivables under the Equipment Installment Plan – primarily as a result of the market launch of higher-priced devices in the fourth quarter of 2020 in the United States – had a negative effect on the change in assets carried as working capital. The negative effect on the change in liabilities carried as working capital mainly resulted from the reduction in liabilities to terminal equipment vendors and other telecommunications companies in the United States operating segment.

For further information on individual assets carried as working capital, please refer to Note 2 "Trade receivables" and Note 4 "Inventories."

For further information, please refer to Note 14 "Trade and other payables."

Net cash used in investing activities

millions of €

	2020	2019	2018
Cash capex[a]			
Germany	(4,172)	(4,414)	n.a.
United States	(10,394)	(6,369)	(4,661)
Europe	(2,216)	(1,816)	n.a.
Systems Solutions	(255)	(356)	n.a.
Group Development	(699)	(452)	(271)
Group Headquarters & Group Services	(990)	(1,010)	n.a.
Reconciliation	32	60	n.a.
	(18,694)	**(14,357)**	**(12,492)**
Payments for publicly funded investments in the broadband build-out[b]	(507)	(401)	n.a.
Proceeds from public funds for investments in the broadband build-out[b]	431	341	n.a.
Net cash flows for collateral deposited and hedging transactions	268	365	(170)
Changes in cash and cash equivalents in connection with the consummated business combination of T-Mobile US and Sprint	(4,767)	0	0
Of which: cash and cash equivalents acquired from Sprint[c]	1,997	0	0
Of which: repayment of Sprint loans pursuant to change-in-control clause	(6,764)	0	0
Cash outflows for the acquisition of shares in Simpel[d]	(255)	0	0
Cash outflows for the acquisition of shares in Tele2 Netherlands[e]	0	(195)	0
Cash outflows for the acquisition of the shares in Layer3 TV[f]	0	0	(258)
Cash outflows for the acquisition of shares in UPC Austria GmbH[g]	0	0	(1,791)
Proceeds from the disposal of property, plant and equipment, and intangible assets	236	176	525
Changes in cash and cash equivalents associated with the sale of Sprint's prepaid business to DISH[h]	1,072	0	0
Changes in cash and cash equivalents in connection with the loss of control of subsidiaries and associates	22	62	(67)
Reverse allocation under contractual trust agreement (CTA) on pension commitments[i]	0	0	225
Payment in relation to settlement reached in Toll Collect arbitration proceedings	0	(200)	(200)
Payment in relation to equity maintenance undertaking for Toll Collect GmbH	0	0	(60)
Other	(456)	(21)	(9)
	(22,649)	**(14,230)**	**(14,297)**

[a] Retrospective changes arising in connection with the realignment of the B2B telecommunications business have not been applied to the individual segment cash flows for the 2018 financial year in accordance with IFRS 8.29.

[b] For further information on the change in estimates made in 2019, please refer to the section "Changes in accounting policies, changes in estimates" in the notes to the consolidated financial statements in the 2019 Annual Report.

[c] Also includes a payment of EUR 93 million received in relation to a cost allocation from SoftBank in connection with the CPUC.

[d] Includes, in addition to the purchase price of EUR 259 million, inflows of cash and cash equivalents in the amount of EUR 4 million.

[e] Includes, in addition to the purchase price of EUR 199 million, inflows of cash and cash equivalents in the amount of EUR 4 million.

[f] Includes, in addition to the purchase price of EUR 260 million, inflows of cash and cash equivalents in the amount of EUR 2 million.

[g] Includes, in addition to the purchase price of EUR 1,792 million, inflows of cash and cash equivalents in the amount of EUR 1 million.

[h] Of the overall purchase price payment of EUR 1,208 million, EUR 136 million was recognized under net cash used in/from financing activities. This related to receivables from customers in connection with the Equipment Installment Plan in Sprint's sold prepaid business.

[i] Relates primarily to outflows of cash and cash equivalents in connection with the transfer of the stake in BT as plan assets to Deutsche Telekom Trust e.V. in March 2018.

Cash capex increased by EUR 4.3 billion to EUR 18.7 billion. In the 2020 financial year, mobile spectrum licenses were acquired for total cash of EUR 1.7 billion. EUR 1.1 billion of this related to the United States operating segment and was primarily attributable to the purchase of FCC licenses in an auction that ended in March 2020. Another EUR 0.4 billion resulted from spectrum acquisition in the Europe operating segment and EUR 0.2 billion in the Group Development operating segment. The prior-year figure had included EUR 1.2 billion for the acquisition of mobile spectrum licenses, predominantly for the United States operating segment. In the Germany operating segment, cash outflows in connection with the acquisition of 5G mobile spectrum licenses were shown in cash capex in the 2019 financial year; since 2020, they have been presented in net cash from/used in financing activities on account of the payment plan agreed with the Federal Republic of Germany. Adjusted for investments in mobile spectrum licenses, cash capex was up by EUR 3.9 billion, largely on account of the inclusion of Sprint and the ongoing 5G network build-out in the United States. Cash capex (before spectrum investment) in the Germany operating segment decreased slightly. Capital expenditure in the Germany operating segment totaled around EUR 4.2 billion in 2020, in particular for the build-out of the 5G and fiber-optic networks. In the Europe operating segment, cash capex (before spectrum investment) stood at EUR 1.8 billion, which was slightly up on the prior year. Here, we also continue to invest in the provision of broadband and fiber-optic technology and in 5G as part of our integrated network strategy.

The contractually promised government grants from publicly funded projects for the broadband build-out in Germany were recognized in full as receivables as of the start of the second half of 2019. They reduce the cost of the relevant property, plant and equipment. The grants received and payments made for the build-out continue to be recognized in net cash used in investing activities, however, they are not part of cash capex, because the payments made do not result in additions to property, plant and equipment. Since the payments are not made at the same point in time as the proceeds are received, the net amounts can be positive or negative in the individual periods.

Interest payments (including capitalized interest) of EUR 7.6 billion (2019: EUR 4.3 billion; 2018: EUR 3.6 billion) were made in the reporting period. Capitalized interest of EUR 0.3 billion (2019: EUR 0.3 billion, 2018: EUR 0.3 billion) was reported within cash capex in net cash used in investing activities, together with the associated assets.

Net cash used in financing activities

millions of €

	2020	2019	2018
Repayment of bonds	(8,958)	(2,718)	(4,604)
Dividend payments (including to other shareholders of subsidiaries)	(3,067)	(3,561)	(3,254)
Repayment of financial liabilities from financed capex and opex	(358)	(699)	(260)
Repayment of EIB loans	(193)	(660)	(159)
Net cash flows for collateral deposited and hedging transactions	(4)	112	244
Principal portion of repayment of lease liabilities	(5,371)	(3,835)	(1,174)
Repayment of financial liabilities for media broadcasting rights	(375)	(407)	(407)
Cash flows from continuing involvement factoring, net	(77)	(21)	31
Loans taken out with the EIB	425	500	150
Promissory notes, net	(202)	144	201
Issuance of bonds	9,202	5,479	7,824
Commercial paper, net	0	(467)	(623)
Overnight borrowings from banks	0	(626)	565
Repayment of liabilities from 5G spectrum acquired in Germany	(110)	0	0
Issue of senior secured notes in connection with the acquisition of Sprint	20,942	0	0
Raising of secured term loan in connection with the acquisition of Sprint	3,562	0	0
Repayment of secured term loan in connection with the acquisition of Sprint	(3,389)	0	0
Raising of bridge loan facility in connection with the acquisition of Sprint	17,405	0	0
Repayment of bridge loan facility in connection with the acquisition of Sprint	(17,493)	0	0
Repayment of Sprint loans (raised prior to acquisition by T-Mobile US)	(3,572)	0	0
Cash inflows from transactions with non-controlling entities			
T-Mobile US stock options	42	2	3
Toll4Europe capital contributions	11	10	24
Other	0	1	2
	53	**13**	**29**
Cash outflows from transactions with non-controlling entities			
T-Mobile US share buy-backs	(391)	(139)	(997)
OTE share buy-back program	(142)	(110)	(94)
Acquisition of T-Mobile US shares	0	0	(164)
Acquisition of OTE shares	0	0	(285)
Other	(32)	(12)	(17)
	(565)	**(261)**	**(1,557)**
Other	(293)	(134)	(265)
	7,561	**(7,141)**	**(3,259)**

Non-cash transactions in the consolidated statement of cash flows
In the 2020 financial year, Deutsche Telekom chose financing options totaling EUR 0.2 billion under which the payments for trade payables from operating and investing activities primarily become due at a later point in time by involving banks in the process (2019: EUR 0.7 billion). These are shown under financial liabilities in the statement of financial position. As soon as the payments have been made, they are disclosed under net cash from/used in financing activities.

In the 2020 financial year, Deutsche Telekom leased assets of EUR 14.3 billion, mainly network equipment, and land and buildings (2019: EUR 5.5 billion). These assets are now recognized in the statement of financial position under right-of-use assets and the related liabilities under lease liabilities. Future repayments of the liabilities will be recognized in net cash from/used in financing activities. The year-on-year increase is mainly attributable to the United States operating segment and relates to the inclusion of Sprint as well as to a modified agreement with American Tower concerning the lease of 20,729 cell towers, which increased the carrying amounts of the right-of-use assets and the lease liabilities by EUR 9.4 billion each.

Consideration for the acquisition of broadcasting rights is paid by Deutsche Telekom depending on the terms of the contract on the date of its conclusion or spread over the term of the contract. Financial liabilities of EUR 0.4 billion were recognized in the 2020 financial year for future consideration for acquired broadcasting rights (2019: EUR 0.3 billion). The payment of the consideration will be recognized in net cash from/used in financing activities.

In the United States operating segment, EUR 2.5 billion was recognized for mobile handsets under property, plant and equipment in the 2020 financial year (2019: EUR 0.9 billion). These relate to the equipment lease model at T-Mobile US, under which customers do not purchase the devices but lease them. The payments are presented under net cash from operating activities. The increase is mainly due to the inclusion of Sprint, whose business model had a strong focus on terminal equipment leases.

The business combination of T-Mobile US and Sprint in the United States operating segment as of April 1, 2020 was executed by means of a share exchange without a cash component (all-stock transaction). Non-current assets and disposal groups held for sale of EUR 1.6 billion and liabilities associated with assets and disposal groups held for sale of EUR 0.5 billion were divested in connection with the sale of Sprint's prepaid business to DISH.

For further information, please refer to the section "Changes in the composition of the Group and other transactions."

The carrying amounts of the financial liabilities associated with net cash from/used in financing activities, divided into carrying amount changes having and not having an effect on cash flows, developed as follows in the reporting year:

millions of €

	As of Jan. 1, 2020	Of which: payments to be disclosed in net cash from (used in) financing activities[a]	Total carrying amount changes having an effect on cash flows	Changes in the composition of the Group
Bonds and other securitized liabilities	51,644	51,295	16,754	24,631
Liabilities to banks	6,516	4,393	(1,265)	0
	58,160	**55,688**	**15,489**	**24,631**
Liabilities to non-banks from promissory note bonds	699	699	(200)	0
Liabilities with the right of creditors to priority repayment in the event of default	0	0	(148)	4,832
Other interest-bearing liabilities	4,369	3,264	(477)	9,177
Other non-interest-bearing liabilities	1,476	10	(8)	0
Derivative financial liabilities	1,645	232	(2)	0
	8,189	**4,205**	**(835)**	**14,009**
Financial liabilities	**66,349**	**59,893**	**14,654**	**38,640**
Lease liabilities	**19,835**	**20,165**	**(5,371)**	**6,819**
Derivative financial assets	**2,333**	**(306)**	**(19)**	**0**

millions of €	Carrying amount changes not having an effect on cash flows						
	Currency translation	Fair value	Carrying amount changes according to the effective interest method	Other	Total carrying amount changes not having an effect on cash flows	Carrying amount on Dec. 31, 2020 of the payments to be disclosed in net cash (used in) from financing activities[a]	As of Dec. 31, 2020
Bonds and other securitized liabilities	(6,600)	977	234	411	19,653	87,702	87,702
Liabilities to banks	0	25	32	1,396	1,453	4,581	5,257
	(6,600)	**1,002**	**266**	**1,807**	**21,106**	**92,283**	**92,959**
Liabilities to non-banks from promissory note bonds	(9)	0	0	0	(9)	490	490
Liabilities with the right of creditors to priority repayment in the event of default	(885)	0	(21)	241	4,167	4,019	3,886
Other interest-bearing liabilities	(222)	0	145	(5,852)	3,248	6,035	7,206
Other non-interest-bearing liabilities	1	0	0	0	1	3	1,703
Derivative financial liabilities	0	0	597	0	597	827	864
	(1,115)	**0**	**721**	**(5,611)**	**8,004**	**11,374**	**14,149**
Financial liabilities	**(7,715)**	**1,002**	**987**	**(3,804)**	**29,110**	**103,657**	**107,108**
Lease liabilities	**(2,295)**	**0**	**0**	**14,137**	**18,661**	**33,455**	**32,715**
Derivative financial assets	**0**	**0**	**183**	**0**	**183**	**(142)**	**4,038**

[a] Deutsche Telekom exercised the option pursuant to IAS 7.33 and presented interest paid and interest received under net cash from operating activities.

Total carrying amount changes having an effect on cash flows of EUR 9.3 billion reported in net cash from/used in financing activities deviate from net cash from/used in financing activities due in particular to the dividend entitlements of Deutsche Telekom AG's shareholders having an effect on cash flows, the changes in non-controlling interests having an effect on cash flows, and the interest paid in connection with financial liabilities reported in cash generated from operations. The other carrying amount changes in lease liabilities not having an effect on cash flows are mainly attributable to additions in connection with the recognition of right-of-use assets. The changes in the carrying amounts of financial liabilities due to changes in the composition of the Group relate, in particular, to the acquisition of Sprint. The other carrying amount changes in financial liabilities not having an effect on cash flows include additions of EUR 0.2 billion for selected financing options under which the payments become due at a later point in time by involving banks in the process, as well as additions of EUR 0.4 billion for the acquisition of broadcasting rights.

In the 2020 financial year, Deutsche Telekom made total interest payments of EUR 7.6 billion to service interest obligations. This figure includes interest payments for derivative and non-derivative financial liabilities, interest payments for lease liabilities, and interest payments recognized under intangible assets and property, plant and equipment. The above reconciliation only shows the carrying amounts of the financial liabilities, lease liabilities, and derivative financial assets allocated to net cash from/used in financing activities.

For further information, please refer to the previous section "Non-cash transactions in the consolidated statement of cash flows."

The carrying amounts of the financial liabilities disclosed in net cash from/used in financing activities, divided into carrying amount changes having and not having an effect on cash flows, developed as follows in 2019:

millions of €

	As of Jan. 1, 2019	Of which: payments to be disclosed in net cash from (used in) financing activities[a]	Total carrying amount changes having an effect on cash flows	Changes in the composition of the Group
Bonds and other securitized liabilities	49,033	49,033	2,289	0
Liabilities to banks	5,710	4,968	(526)	0
	54,743	**54,001**	**1,763**	**0**
Liabilities to non-banks from promissory note bonds	497	497	(156)	0
Liabilities with the right of creditors to priority repayment in the event of default	0	0	0	0
Other interest-bearing liabilities[b]	1,868	1,447	(1,287)	3
Other non-interest-bearing liabilities	1,609	13	(3)	0
Derivative financial liabilities	1,077	727	(30)	0
	5,051	**2,684**	**(1,476)**	**3**
Financial liabilities[b]	**59,794**	**56,685**	**287**	**3**
Lease liabilities[b]	**18,073**	**18,073**	**(3,836)**	**203**
Derivative financial assets	**870**	**34**	**(142)**	**0**

millions of €

	Carrying amount changes not having an effect on cash flows						
	Currency translation	Fair value	Carrying amount changes according to the effective interest method	Other[c]	Total carrying amount changes not having an effect on cash flows	Carrying amount on Dec. 31, 2019 of the payments to be disclosed in net cash from (used in) financing activities[a]	As of Dec. 31, 2019
Bonds and other securitized liabilities	603	1,006	136	(1,773)	(28)	51,294	51,644
Liabilities to banks	16	52	35	(151)	(48)	4,394	6,516
	619	**1,058**	**171**	**(1,924)**	**(76)**	**55,688**	**58,160**
Liabilities to non-banks from promissory note bonds	8	0	0	350	358	699	699
Liabilities with the right of creditors to priority repayment in the event of default	0	0	0	0	0	0	0
Other interest-bearing liabilities[b]	0	0	39	3,063	3,105	3,265	4,369
Other non-interest-bearing liabilities	0	0	0	0	0	10	1,476
Derivative financial liabilities	0	0	(465)	0	(465)	232	1,645
	8	**0**	**(426)**	**3,413**	**2,998**	**4,206**	**8,189**
Financial liabilities[b]	**627**	**1,058**	**(255)**	**1,489**	**2,922**	**59,894**	**66,349**
Lease liabilities[b]	**237**	**0**	**0**	**5,487**	**5,927**	**20,164**	**19,835**
Derivative financial assets	**0**	**0**	**(198)**	**0**	**(198)**	**(306)**	**2,333**

[a] Deutsche Telekom exercised the option pursuant to IAS 7.33 and presented interest paid and interest received under net cash from operating activities.
[b] The opening balances were adjusted on account of the first-time application of the IFRS 16 "Leases" accounting standard. Financial liabilities included finance lease liabilities in accordance with IAS 17 for the last time as of December 31, 2018. For further information, please refer to the section "Initial application of standards, interpretations, and amendments in the financial year" in the notes to the consolidated financial statements in the 2019 Annual Report.
[c] Other carrying amount changes not having an effect on cash flows relate, among other effects, to bonds and other securitized liabilities in the amount of EUR 365 million and interest in connection with zero-coupon bonds recognized as liabilities to banks in the amount of EUR 1,208 million. Interest payments resulting from this in the future will be recognized in net cash from operating activities.

36 Segment reporting

Deutsche Telekom reports on five operating segments, as well as on the Group Headquarters & Group Services segment. Three operating segments are distinguished by region (Germany, United States, Europe), one by customers and products (Systems Solutions), and another by tasks (Group Development). For three operating segments, business activities are assigned by customer and product (Germany, Systems Solutions, United States), while one operating segment allocates its activities on a regional basis (Europe) and another allocates them by equity investment (Group Development).

The **Germany** operating segment comprises all fixed-network and mobile business activities for consumers and business customers, including separate sales entities in Germany to allow a customer-centric sales approach. Consistent with our efforts to implement our Group strategy pillar “Lead in business productivity,” the business-to-business (B2B) telecommunications services were realigned in the course of the year. To this end, TC Services and Classified ICT (with the exception of a few activities in the area of Classified IT project business), portfolio units previously assigned to the Systems Solutions operating segment, as well as Telekom Global Carrier (TGC) and Network Infrastructure, (NWI) – which were previously reported under the Europe operating segment and the Group Headquarters & Group Services segment and which together form the business area designated as Deutsche Telekom Global Carrier (DTGC) – have been combined under the Germany operating segment. Effective the start of the third quarter of 2020, the management of the Deutsche Telekom Group and hence also the reporting structure were both based on this new segment allocation. As part of these transactions, the assets and liabilities assigned to the business areas were transferred to the Germany operating segment. Prior-year comparatives in the segments affected have been adjusted retrospectively in segment reporting. The transactions were consummated under company law on July 1, 2020 (TC Services and Classified ICT) and on October 1, 2020 (DTGC). Another focus is on the wholesale business providing telecommunications services for carriers and the Group’s other operating segments. The **United States** operating segment comprises all mobile activities in the U.S. market. The business combination of T-Mobile US and Sprint was completed on April 1, 2020, forming the all-new, larger T-Mobile US. The **Europe** operating segment comprises all fixed-network and mobile operations of the national companies in Greece, Romania, Hungary, Poland, the Czech Republic, Croatia, Slovakia, Austria, North Macedonia, and Montenegro. On November 6, 2020, OTE concluded an agreement with Orange Romania concerning the sale of the 54 % stake in Telekom Romania Communications, which operates the Romanian fixed-network business. The national company in Albania was sold as of May 7, 2019. In addition to consumer business, most of the national companies also offer ICT solutions for business customers. The **Systems Solutions** operating segment offers business customers an integrated product and solution portfolio. With offerings for connectivity, digital solutions, cloud and infrastructure, and security, in addition to strategic partnerships, the segment offers its customers help and guidance to implement digital business models. The goal of the **Group Development** operating segment is to actively manage entities and equity investments to grow their value. This approach led to the creation of GD Towers – comprising Deutsche Funkturm (DFMG) and the Dutch cell tower business – within the Group Development segment. Following the integration of Tele2 Netherlands as of the start of 2019, the Dutch MVNO and SIM provider, Simpel, was taken over effective December 1, 2020. Deutsche Telekom Capital Partners (DTCP) and the Group functions of Mergers & Acquisitions and Strategic Portfolio Management have also been assigned to Group Development. The stake in Ströer SE & Co. KGaA was transferred to Deutsche Telekom Trust e.V. in August 2019 as plan assets to cover Deutsche Telekom’s existing pension obligations. The Group Development operating segment also included the 12 % financial stake in BT until March 23, 2018, when it was transferred to Deutsche Telekom Trust e.V. as plan assets. The **Group Headquarters & Group Services** segment comprises all Group units that cannot be allocated directly to one of the operating segments and also reports on the Board of Management department Technology and Innovation. It unites the cross-segment functions of technology, innovation, IT, and Security of the Germany, Europe, and Systems Solutions operating segments. Group Services provides services to the entire Group; in addition to typical services provided by Deutsche Telekom Services Europe, such as financial accounting, human resources services, and operational procurement, Group Services also includes the placement services of personnel services provider Vivento. Further units are Group Supply Services (GSUS) for real estate management and strategic procurement, and MobilitySolutions, which is a full-service provider for fleet management and mobility services.

The business segments shown are reviewed at regular intervals by the Deutsche Telekom Board of Management in terms of the allocation of resources and their earnings performance.

The measurement principles for Deutsche Telekom’s segment reporting structure are based primarily on the IFRSs adopted in the consolidated financial statements. Deutsche Telekom evaluates the segments’ performance based on revenue and profit or loss from operations (EBIT), among other factors. Revenue generated and goods and services exchanged between segments are calculated on the basis of market prices. Services provided by Deutsche Telekom IT are generally charged at cost. Development services are not charged, but capitalized at segment level in accordance with the internal control logic. In accordance with the segments’ control logic, intragroup leases are not capitalized by the lessee, but instead recognized as periodic expenses. Segment assets and liabilities include all assets and liabilities that are carried in the financial statements prepared by the segments and included in the consolidated financial statements. Segment investments include additions to intangible assets, property, plant and equipment, and right-of-use assets. Where entities accounted for using the equity method are directly allocable to a segment, their shares of profit or loss after income taxes and their carrying amounts are reported in that segment’s accounts. All of the performance indicators shown in the following tables are presented exclusively from the segments’ perspective: The effects of intersegment transactions are eliminated and presented in aggregate form in the reconciliation line. The following table shows the performance indicators used by Deutsche Telekom to evaluate the operating segments’ performance as well as additional segment-related indicators:

millions of €

		Net revenue	Intersegment revenue	Total revenue	Profit (loss) from operations (EBIT)	Depreciation and amortization	Impairment losses	Interest income
Germany	2020	23,013	766	23,779	4,085	(4,435)	(5)	4
	2019	22,942	788	23,730	4,327	(4,337)	(4)	6
	2018	22,833	829	23,662	4,215	(4,109)	(6)	3
United States	2020	61,206	2	61,208	9,187	(15,574)	(91)	24
	2019	40,418	2	40,420	5,488	(7,777)	0	19
	2018	36,521	1	36,522	4,634	(5,294)	0	14
Europe	2020	11,139	196	11,335	1,278	(2,648)	(227)	23
	2019	11,395	192	11,587	1,109	(2,773)	(341)	29
	2018	11,106	206	11,312	650	(2,319)	(679)	8
Systems Solutions	2020	3,242	936	4,178	(650)	(360)	(430)	7
	2019	3,423	1,001	4,424	(425)	(450)	(29)	11
	2018	3,435	1,039	4,474	(453)	(353)	(56)	12
Group Development	2020	2,202	681	2,883	562	(780)	0	1
	2019	2,158	639	2,797	615	(812)	0	0
	2018	1,579	606	2,185	560	(334)	0	0
Group Headquarters & Group Services	2020	196	2,360	2,556	(1,655)	(1,259)	(45)	1,237
	2019	195	2,432	2,627	(1,631)	(1,141)	(2)	1,330
	2018	182	2,553	2,735	(1,646)	(803)	(10)	1,018
Total	**2020**	**100,999**	**4,941**	**105,939**	**12,807**	**(25,057)**	**(798)**	**1,296**
	2019	**80,531**	**5,055**	**85,585**	**9,483**	**(17,290)**	**(376)**	**1,395**
	2018	**75,656**	**5,234**	**80,890**	**7,960**	**(13,212)**	**(750)**	**1,055**
Reconciliation	2020	0	(4,941)	(4,941)	(3)	26	0	(882)
	2019	0	(5,055)	(5,055)	(26)	24	(21)	(1,047)
	2018	0	(5,234)	(5,234)	41	99	28	(778)
Group	**2020**	**100,999**	**0**	**100,999**	**12,804**	**(25,031)**	**(798)**	**414**
	2019	**80,531**	**0**	**80,531**	**9,457**	**(17,266)**	**(397)**	**348**
	2018	**75,656**	**0**	**75,656**	**8,001**	**(13,113)**	**(722)**	**277**

[a] Retrospective changes in segment reporting have not been applied to the individual segment cash flows for the 2018 financial year in accordance with IFRS 8.29 since the amount of work required to do so would have been excessive.

[b] Cash outflows for investments in intangible assets (excluding goodwill) and property, plant and equipment, as shown in the statement of cash flows.

Interest expense	Share of profit (loss) of associates and joint ventures accounted for using the equity method	Income taxes	Segment assets	Segment liabilities	Segment investments	Investments accounted for using the equity method	Net cash from operating activities[a]	Net cash (used in) from investing activities[a]	Of which: cash capex[a, b]	Net cash from (used in) financing activities[a]	Average number of employees
(283)	(6)	(6)	45,015	32,680	4,247	34	8,057	(4,214)	(4,172)	(4,098)	67,547
(209)	0	(5)	44,274	32,222	6,237	12	7,682	(4,584)	(4,414)	7,082	70,353
(145)	0	0	40,347	28,735	4,799	12	n.a.	n.a.	n.a.	n.a.	72,773
(3,384)	13	(1,292)	176,765	117,681	13,566	296	13,501	(14,001)	(10,394)	8,469	65,015
(1,623)	116	(1,224)	84,413	54,087	7,240	289	11,438	(6,997)	(6,369)	(4,135)	46,544
(993)	(1)	(882)	69,223	43,326	6,699	159	7,567	(4,936)	(4,661)	(2,606)	45,729
(189)	0	(210)	27,034	9,172	2,502	54	3,725	(3,244)	(2,216)	(655)	42,359
(251)	1	(258)	26,878	10,527	1,974	59	3,503	(1,741)	(1,816)	(1,748)	45,895
(205)	3	(281)	26,359	9,742	2,089	60	n.a.	n.a.	n.a.	n.a.	47,894
(26)	1	(32)	4,190	3,798	257	23	54	(411)	(255)	656	29,025
(25)	0	(36)	4,517	3,967	362	25	153	(251)	(356)	112	29,517
(7)	(535)	0	3,811	3,155	436	24	n.a.	n.a.	n.a.	n.a.	29,314
(271)	(21)	33	9,212	11,220	1,018	122	1,101	(1,020)	(699)	(215)	2,664
(140)	(30)	9	8,395	10,571	558	96	1,142	(610)	(452)	4,937	2,708
(13)	4	(114)	6,037	8,553	303	311	1,008	(391)	(271)	(3,064)	1,965
(1,364)	0	(424)	48,047	63,188	1,013	14	1,727	5,227	(990)	(6,035)	16,928
(1,510)	(1)	(491)	54,339	65,244	998	9	4,112	(16,669)	(1,010)	(1,727)	17,829
(1,508)	(1)	(487)	50,327	59,207	1,058	10	n.a.	n.a.	n.a.	n.a.	18,693
(5,517)	**(12)**	**(1,931)**	**310,263**	**237,739**	**22,603**	**543**	**28,165**	**(17,663)**	**(18,726)**	**(1,878)**	**223,539**
(3,758)	**87**	**(2,005)**	**222,816**	**176,618**	**17,369**	**489**	**28,030**	**(30,852)**	**(14,417)**	**4,521**	**212,846**
(2,871)	**(529)**	**(1,764)**	**196,104**	**152,719**	**15,384**	**576**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**216,369**
879	0	2	(45,346)	(45,372)	(33)	0	(4,422)	(4,986)	32	9,439	0
1,046	0	12	(52,144)	(52,177)	(75)	0	(4,956)	16,622	60	(11,662)	0
777	0	(60)	(50,729)	(50,781)	(129)	0	n.a.	n.a.	n.a.	n.a.	0
(4,638)	**(12)**	**(1,929)**	**264,917**	**192,367**	**22,570**	**543**	**23,743**	**(22,649)**	**(18,694)**	**7,561**	**223,539**
(2,712)	**87**	**(1,993)**	**170,672**	**124,441**	**17,294**	**489**	**23,074**	**(14,230)**	**(14,357)**	**(7,141)**	**212,846**
(2,094)	**(529)**	**(1,824)**	**145,375**	**101,938**	**15,255**	**576**	**17,948**	**(14,297)**	**(12,492)**	**(3,259)**	**216,369**

Information on geographic areas. The Group's non-current assets and net revenue are shown by region: Germany, Europe (excluding Germany), North America, and other countries. The North America region comprises the United States and Canada. The Europe (excluding Germany) region covers the entire European Union (excluding Germany) and the other countries in Europe. Other countries include all countries that are not Germany or in Europe (excluding Germany) or North America. Non-current assets are allocated to the regions according to the location of the assets in question. Non-current assets encompass intangible assets; property, plant and equipment; right-of-use assets, capitalized contract costs; investments accounted for using the equity method; as well as other non-current assets. Net revenue is allocated according to the location of the respective customers' operations.

millions of €	Non-current assets			Net revenue		
	Dec. 31, 2020	Dec. 31, 2019	Dec. 31, 2018	2020	2019	2018[a]
Germany	42,941	43,431	39,012	24,730	24,600	24,358
International	170,295	95,852	79,959	76,269	55,930	51,298
Europe (excluding Germany)	23,075	23,858	21,521	14,517	14,858	14,065
North America	147,115	71,886	58,380	61,288	40,445	36,667
Other countries	106	108	58	463	628	566
Group	**213,236**	**139,283**	**118,971**	**100,999**	**80,531**	**75,656**

[a] Due to a change in allocation between the geographical segments, the value of net revenue for the comparative period 2018 was adjusted retrospectively in 2019.

Information on products and services. Revenue generated with external customers for groups of comparable products and services developed as follows:

millions of €	Net revenue		
	2020	2019	2018
Telecommunications	95,628	74,991	70,303
ICT solutions	4,915	5,086	4,896
Other	455	454	457
	100,999	**80,531**	**75,656**

37 Contingencies

As part of its ordinary business activities, Deutsche Telekom is involved in various proceedings both in and out of court with government agencies, competitors, and other parties, the outcome of which often cannot be reliably anticipated. As of the reporting date, the Group was exposed to contingent liabilities amounting to EUR 0.1 billion (December 31, 2019: EUR 0.6 billion) and to contingent assets amounting to EUR 0.0 billion (December 31, 2019: EUR 0.0 billion) that, on the basis of the information and estimates available, do not fulfill the requirements for recognition as liabilities or assets in the statement of financial position. Litigation provisions include the costs of legal counsel services and any probable losses. Deutsche Telekom does not believe that any additional costs arising from legal counsel services or the results of proceedings will have a material adverse effect on the results of operations and financial position of the Group. In addition to individual cases that do not have any significant impact on their own, the aforementioned total contingent liabilities include the following items, the sequence of which does not imply an evaluation of their probability of occurrence or potential damage. In the event that in extremely rare cases disclosures required by IAS 37 are not made, Deutsche Telekom comes to the conclusion that these disclosures could seriously undermine the outcome of the relevant proceedings.

Contingent liabilities

Prospectus liability proceedings (third public offering, or DT3). This relates to initially around 2,600 ongoing lawsuits from some 16,000 alleged buyers of T-Shares sold on the basis of the prospectus published on May 26, 2000. The plaintiffs assert that individual figures given in this prospectus were inaccurate or incomplete. The amount in dispute currently totals approximately EUR 78 million plus interest. Some of the actions are also directed at KfW and/or the Federal Republic of Germany as well as the banks that handled the issuances. The Frankfurt/Main Regional Court had issued orders for reference to the Frankfurt/Main Higher Regional Court in accordance with the German Capital Investor Model Proceedings Act (Kapitalanleger-Musterverfahrensgesetz – KapMuG) and has temporarily suspended the initial proceedings. On May 16, 2012, the Frankfurt/Main Higher Regional Court had ruled that there were no material errors in Deutsche Telekom AG's prospectus. In its decision on October 21, 2014, the Federal Court of Justice partly revoked this ruling, determined that there was a mistake in the prospectus, and referred the case back to the Frankfurt/Main Higher Regional Court. On November 30, 2016, the Frankfurt/Main Higher Regional Court ruled that the mistake in the prospectus identified by the Federal Court of Justice could result in liability on the part of Deutsche Telekom AG, although the details of that liability would have to be established in the initial proceedings. Both Deutsche Telekom AG and some of the individual plaintiffs in the model proceedings have brought an appeal before the Federal Court of Justice against this decision. We continue to hold the opinion that there are compelling reasons why Deutsche Telekom AG should not be liable for damages.

Likewise, on the basis of the information and estimates available, the following issues do not fulfill the requirements for recognition as liabilities in the statement of financial position. As it is not possible to estimate the amount of the contingent liabilities or the group of contingent liabilities with sufficient reliability in each case due to the uncertainties described below, they have not been included in the aforementioned total contingent liabilities.

Claims relating to charges for the shared use of cable ducts. In 2012, Kabel Deutschland Vertrieb und Service GmbH (today Vodafone Kabel Deutschland GmbH (VKDG)) filed a claim against Telekom Deutschland GmbH to reduce the annual charge for the rights to use cable duct capacities in the future and gain a partial refund of the payments made in this connection since 2004. According to VKDG's latest estimates, its claims amounted to around EUR 624 million along with around EUR 9 million for the alleged benefit from additional interest, plus interest in each case. Claims prior to 2009 are now no longer being asserted by VKDG. After the Frankfurt/Main Regional Court had dismissed the complaint in 2013, the Frankfurt/Main Higher Regional Court also rejected the appeal in December 2014. In the ruling dated January 24, 2017, the Federal Court of Justice reversed the appeal ruling and referred the case back to the Frankfurt/Main Higher Regional Court for further consideration. In its ruling dated December 20, 2018, the Frankfurt/Main Higher Regional Court again rejected the appeal and disallowed a further appeal. In similar proceedings, Unitymedia Hessen GmbH & Co. KG, Unitymedia NRW GmbH, and Kabel BW GmbH filed claims against Telekom Deutschland GmbH in January 2013, demanding that it cease charging the plaintiffs more than a specific and precisely stated amount for the shared use of cable ducts. In addition, the plaintiffs are demanding a refund of currently around EUR 570 million plus interest. The claim was dismissed in the first instance by the Cologne Regional Court on October 11, 2016. In its ruling dated March 14, 2018, the Düsseldorf Higher Regional Court rejected the appeal against this decision. In both proceedings, the plaintiffs have lodged a complaint against the non-allowance of appeal with the Federal Court of Justice.

Patents and licenses. Like many other large telecommunications and internet providers, Deutsche Telekom is exposed to a growing number of intellectual property rights disputes. There is a risk that Deutsche Telekom may have to pay license fees and/or compensation; Deutsche Telekom is also exposed to a risk of cease-and-desist orders, for example relating to the sale of a product or the use of a technology.

Anti-trust and consumer protection proceedings. Deutsche Telekom and its subsidiaries are subject to proceedings under competition law in various jurisdictions, which may also lead to civil follow-on claims. Taken individually, none of the proceedings have a material impact. Deutsche Telekom believes the respective allegations and claims for damages are unfounded. The outcome of the proceedings cannot be foreseen at this point in time.

Claims for damages against Slovak Telekom following a European Commission decision to impose fines. The European Commission decided on October 15, 2014 that Slovak Telekom had abused its market power on the Slovak broadband market and as a result imposed fines on Slovak Telekom and Deutsche Telekom, which were paid in full in January 2015. Slovak Telekom and Deutsche Telekom challenged the European Commission's decision on December 29, 2014 before the General Court of the European Union. On December 13, 2018, the court partially overturned the European Commission's decision and reduced the fines by a total of EUR 13 million. Despite this positive judgment, on February 21, 2019, Slovak Telekom and Deutsche Telekom filed an appeal with the European Court of Justice against the ruling by the General Court. With this appeal, Slovak Telekom and Deutsche Telekom are seeking, inter alia, to overturn the findings of the European Commission determining Slovak Telekom's behavior as abusive. Following the decision of the European Commission, competitors filed damage actions against Slovak Telekom with the civil court in Bratislava. These claims seek compensation for alleged damages due to Slovak Telekom's abuse of a dominant market position, as determined by the European Commission. At present, two claims totaling EUR 112 million plus interest are still pending.

Tax risks. In many countries, Deutsche Telekom is subject to the applicable tax regulations. Risks can arise from changes in local taxation laws or case law and different interpretations of existing provisions. As a result, they can affect Deutsche Telekom's tax expense and benefits as well as tax receivables and liabilities.

38 Lessor relationships

Finance leases. Deutsche Telekom is a lessor in connection with finance leases. Essentially, these relate to the leasing of routers and other hardware, which Deutsche Telekom provides to its customers for data and telephone network solutions.

The following table shows how the amount of the net investment in a finance lease is determined:

millions of €	Dec. 31, 2020	Dec. 31, 2019
Minimum lease payments	260	213
Unguaranteed residual value	3	4
Gross investment	262	218
Unearned finance income	(15)	(21)
Net investment (present value of the minimum lease payments)	**248**	**197**

The following table presents the gross investment amounts and the present value of payable minimum lease payments:

millions of €	Dec. 31, 2020		Dec. 31, 2019	
Maturity	Gross investment	Present value of minimum lease payments	Gross investment	Present value of minimum lease payments
Within 1 year	93	87	79	74
In 1 to 2 years	74	69	65	53
In 2 to 3 years	46	44	34	31
In 3 to 4 years	35	34	19	18
In 4 to 5 years	9	8	15	15
After 5 years	5	4	6	6
	262	**248**	**218**	**197**

Operating leases. Deutsche Telekom is a lessor in connection with operating leases. The underlying leases mainly relate to mobile terminal equipment in the United States operating segment, cell sites, building and co-location space, and unbundled local loop lines. By contrast, contracts on the provision of the latest generation of modems/routers to consumers in the fixed-network mass-market – where modem and router features are incorporated in one device – are not defined as leases.

Where terminal equipment is leased in the United States operating segment, customers are entitled to receive a new device once per month during the term of the lease. On receipt of the new device or at the end of the contract, the customer either returns or purchases the equipment. The purchase price at the end of the lease is set at the commencement of the lease and is equal to the estimated residual value of the equipment. This value is based on the type of equipment and the advance payment. The contracts do not contain any residual value guarantees or variable lease payments, nor do they contain any restrictions or covenants. Terminal equipment returned by customers is prepared for sale in the secondary market or for use as a replacement for defective devices. This reduces the residual value risk of the returned equipment.

The leasing of local loop lines and space to wholesale fixed-network customers (e.g., co-location space) is also classified as a lease. The regulator requires Deutsche Telekom to make co-location space and unbundled local loop lines available to competitors. In contrast to unregulated products, the residual value risk for these assets is rather low because competitors are economically dependent on the use of these assets. In the unlikely event that co-location space and unbundled local loop lines are not leased, Deutsche Telekom will try to find new tenants for the vacant space or unleased lines. In the case of its own cell sites, Deutsche Telekom will also strive to continue leasing – where possible – all of the free space that it does not itself occupy. The aim here is to reduce the vacancy rate of unused space as far as possible by re-letting and to spread the cost.

Operating leases exist for the following items of property, plant and equipment:

millions of €	Land and buildings	Technical equipment and machinery	Total
Cost			
At December 31, 2018	**99**	**1,599**	**1,697**
Currency translation	(2)	14	11
Changes in the composition of the Group	0	0	0
Additions	0	978	978
Disposals	(18)	(1,027)	(1,045)
Change from non-current assets and disposal groups held for sale	0	0	0
Reclassifications	1	15	16
At December 31, 2019	**80**	**1,578**	**1,657**
Currency translation	(1)	(710)	(712)
Changes in the composition of the Group	0	5,124	5,124
Additions	0	2,600	2,600
Disposals	(14)	(2,490)	(2,505)
Change from non-current assets and disposal groups held for sale	(61)	0	(61)
Reclassifications	(1)	218	219
At December 31, 2020	**2**	**6,318**	**6,322**
Accumulated depreciation and impairment losses			
At December 31, 2018	**(76)**	**(984)**	**(1,060)**
Currency translation	2	(10)	(9)
Changes in the composition of the Group	0	0	0
Additions (depreciation)	(3)	(555)	(558)
Additions (impairment)	0	0	0
Disposals	17	787	804
Change from non-current assets and disposal groups held for sale	0	0	0
Reclassifications	1	1	2
Reversal of impairment losses	0	0	0
At December 31, 2019	**(59)**	**(762)**	**(821)**
Currency translation	1	129	130
Changes in the composition of the Group	0	0	0
Additions (depreciation)	(1)	(2,642)	(2,644)
Additions (impairment)	0	0	0
Disposals	12	1,215	1,227
Change from non-current assets and disposal groups held for sale	44	0	44
Reclassifications	3	(96)	(94)
Reversal of impairment losses	0	0	0
At December 31, 2020	**(1)**	**(2,156)**	**(2,157)**
Net carrying amounts			
At December 31, 2019	21	816	837
At December 31, 2020	**1**	**4,163**	**4,164**

The future minimum lease payments arising from non-cancelable operating leases are as follows:

millions of € Maturity	Dec. 31, 2020	Dec. 31, 2019
Within 1 year	1,822	876
In 1 to 2 years	393	589
In 2 to 3 years	232	32
In 3 to 4 years	241	365
In 4 to 5 years	203	21
After 5 years	751	697
	3,641	**2,581**

The increase in future minimum lease payments is mainly due to the leases taken over from Sprint.

39 Other financial obligations

The following table provides an overview of Deutsche Telekom's other financial obligations:

millions of €	Dec. 31, 2020			
	Total	Due within 1 year	Due > 1 year ≤ 5 years	Due > 5 years
Purchase commitments regarding property, plant and equipment	6,980	6,109	522	349
Purchase commitments regarding intangible assets	1,099	566	532	1
Firm purchase commitments for inventories	3,023	2,988	35	0
Other purchase commitments and similar obligations	16,697	9,106	6,398	1,193
Payment obligations to the Civil Service Pension Fund	1,783	296	932	555
Obligations from the acquisition of interests in other companies	29	29	0	0
Miscellaneous other obligations	44	3	15	26
	29,655	**19,097**	**8,434**	**2,124**

40 Share-based payment

Share Matching Plan

Since the 2011 financial year, specific executives have been contractually obligated to invest a minimum of 10 % of their short-term variable remuneration component, which is based on the achievement of targets set for each person for the financial year (Short-Term Incentive/Variable I), in Deutsche Telekom AG shares. In the 2019 financial year, the upper limit for personal investment was raised from 33.3 % to 50 % of the short-term variable remuneration component. Deutsche Telekom AG will award one additional share for every share acquired as part of this executive's aforementioned personal investment (Share Matching Plan). These shares will be allotted to the beneficiaries of this plan on expiration of the four-year lock-up period.

Since the 2015 financial year, further executives who are not contractually obligated to participate in the Share Matching Plan have been given the opportunity to participate on a voluntary basis. This offer is only made when the Group's free cash flow target for the preceding year has been achieved. The conditions of participation in the voluntary Share Matching Plan were updated in the 2019 financial year. Since then, participation has been open to all executives in certain management groups. To participate, the executives invest at least 10 % and – since the 2019 financial year – a maximum of 50 % of the target amount (100 %) of the short-term remuneration component (Short-Term Incentive) in shares of Deutsche Telekom AG. Deutsche Telekom AG will award additional shares for every share acquired as part of this executive's aforementioned personal investment (Share Matching Plan). The number of additional shares granted will depend on the management group to which the executive is assigned. The additional shares will be allotted to the beneficiaries of this plan on expiration of the four-year lock-up period.

The individual Share Matching Plans are each recognized for the first time at fair value on the grant date. To determine the fair value, the expected dividend entitlements are deducted from Deutsche Telekom AG's share price, as there are no dividend entitlements until the matching shares have been allocated. In the 2020 financial year, a total of 1.0 million (2019: 0.9 million) matching shares were allocated to beneficiaries of the plan at a weighted average fair value of EUR 12.22 (2019: EUR 12.06). The cost is to be recognized against the capital reserves pro rata temporis until the end of the service period and amounted to EUR 9.0 million in total for all tranches as of December 31, 2020 (December 31, 2019: EUR 7.7 million). In the reporting year, reserves were reduced by transfers of shares to plan participants in a total value of EUR 7.0 million (2019: EUR 5.5 million). The capital reserves recognized for the Share Matching Plan as of December 31, 2020 amounted to EUR 19.1 million (December 31, 2019: EUR 17.2 million).

For the compensation system of Board of Management members who also participate in the Share Matching Plan, please refer to the "Compensation report" in the combined management report.

Long-term incentive plan

Executives from the Deutsche Telekom AG Group can participate in a long-term incentive plan provided they meet certain eligibility requirements or have an individual contractual commitment. At the inception of the plan, the participating executives receive a package of virtual shares with a value between 10 % and 43 % of the participant's annual target salary depending on the extent to which defined criteria are fulfilled. The number of virtual shares is contingent on the participant's annual target salary, management group assignment, and, since the 2019 financial year, on the achievement of the collective targets (financial and strategic targets) of the organizational unit to which the executive is assigned.

Over the term of the four-year plan, the value of the virtual shares changes in line with Deutsche Telekom AG's share price development. The number of virtual shares will change on achievement of the targets for four equally weighted performance indicators (return on capital employed, adjusted earnings per share, employee satisfaction, and customer satisfaction), to be determined at the end of each year. In addition, a dividend is granted for the virtual shares over the term of the plan. This dividend is reinvested in virtual shares, increasing the number of virtual shares held by each plan participant. At the end of the four-year plan term, the final number of virtual shares will be converted on the basis of a share price calculated in a reference period at the end of the plan and paid out in cash together with the dividend for the last year of the plan, which is not converted into virtual shares.

The individual long-term incentive plans are each recognized for the first time at fair value on the grant date. The fair value of a plan is calculated by multiplying the number of virtual shares by Deutsche Telekom AG's share price discounted to the reporting date. In the 2020 financial year, a total of 3.91 million (2019: 3.88 million) virtual shares were granted at a weighted average fair value of EUR 14.76 (2019: EUR 15.07). A plan must be remeasured at every reporting date until the end of the service period and expensed pro rata temporis. The cost of the long-term incentive plans amounted to EUR 77 million for all tranches in the reporting year (2019: EUR 50 million). In 2020, the provision was utilized in the amount of EUR 47 million (2019: EUR 76 million). Following a reclassification of EUR 2 million to liabilities directly associated with non-current assets and disposal groups held for sale, the provision amounted to EUR 152 million as of December 31, 2020 (December 31, 2019: EUR 125 million).

Share-based remuneration at T-Mobile US

Under T-Mobile US' Omnibus Incentive Plan, the company may grant stock options, stock appreciation rights, restricted stock, restricted stock units (RSUs), and performance awards to employees, consultants, advisors and non-employee directors. As of December 31, 2020, there were 25 million T-Mobile US shares of common stock (December 31, 2019: 19 million shares) available for future grants under the incentive plan.

T-Mobile US grants RSUs to eligible employees and certain non-employee directors, and performance-based restricted stock units (PRSUs) to eligible key executives of the company. RSUs entitle the grantee to receive shares of T-Mobile US' common stock at the end of a vesting period of up to three years. PRSUs entitle the holder to receive shares of T-Mobile' US common stock at the end of a vesting period of up to three years if a specific performance goal is achieved. The number of shares ultimately received is dependent on the actual performance of T-Mobile US measured against a defined performance target.

The RSU and PRSU plans resulted in the following share-related development:

Time-based restricted stock units and restricted stock awards (RSUs)

	Number of shares	Weighted average fair value at grant date USD
Non-vested as of January 1, 2020	**10,503,211**	**67.31**
Transferred through Sprint acquisition	1,852,527	83.90
Granted	5,891,303	97.18
Vested	(7,112,552)	69.32
Forfeited	(1,033,267)	84.52
Non-vested as of December 31, 2020	**10,101,222**	**84.61**

Performance-based restricted stock units (PRSUs)

	Number of shares	Weighted average fair value at grant date USD
Non-vested as of January 1, 2020	**3,803,539**	**69.78**
Transferred through Sprint acquisition	3,535,384	83.90
Granted	2,079,118	106.26
Vested	(6,127,838)	77.11
Forfeited	(138,034)	83.90
Non-vested as of December 31, 2020	**3,152,169**	**85.01**

The program is measured at fair value on the grant date and recognized as expense, net of expected forfeitures, following a graded vesting schedule over the related service period. The fair value of stock awards for the RSUs is based on the closing price of T-Mobile US' common stock on the date of grant. The fair value of stock awards for the PRSUs was determined using the Monte Carlo model. Stock-based compensation expense was EUR 628 million as of December 31, 2020 (December 31, 2019: EUR 495 million).

The outstanding stock options mainly relate to the stock option plans of MetroPCS and Sprint, both of which were set up prior to the business combinations with T- Mobile US. No new awards may be granted under these plans.

The plans resulted in the following development of the T-Mobile US stock options:

	Number of shares	Weighted average exercise price USD	Weighted average remaining contractual life (years)
Stock options outstanding at January 1, 2020	**194,942**	**13.80**	**2.9**
Transferred through Sprint acquisition	1,635,518	33.37	
Exercised	(906,295)	53.02	
Forfeited/canceled	(5,470)	49.75	
Stock options outstanding at December 31, 2020	**918,695**	**51.77**	**4.0**
Stock options exercisable at December 31, 2020	917,955	51.79	4.0

The exercise of stock options generated cash inflows of EUR 42 million (USD 48 million) in the 2020 financial year (2019: EUR 1 million (USD 1 million)).

41 Financial instruments and risk management

For further information on financial instruments, please refer in particular to Note 2 "Trade receivables," Note 11 "Other financial assets," Note 13 "Financial liabilities and lease liabilities," Note 28 "Finance costs," and Note 30 "Other financial income/ expense."

Carrying amounts, amounts recognized, and fair values by class and measurement category

millions of €

			Amounts recognized in the statement of financial position in accordance with IFRS 9			
	Measurement category in accordance with IFRS 9	**Carrying amount Dec. 31, 2020**	Amortized cost	Fair value through other comprehensive income without recycling to profit or loss	Fair value through other comprehensive income with recycling to profit or loss	Fair value through profit or loss[a]
Assets						
Cash and cash equivalents	AC	12,939	12,939			
Trade receivables						
At amortized cost	AC	6,007	6,007			
At fair value through other comprehensive income	FVOCI	7,516			7,516	
At fair value through profit or loss	FVTPL	0				0
Other financial assets						
Originated loans and other receivables						
At amortized cost	AC	4,722	4,722			
Of which: collateral paid	AC	543	543			
Of which: publicly funded projects	AC	1,676	1,676			
At fair value through other comprehensive income	FVOCI	0			0	
At fair value through profit or loss	FVTPL	203				203
Equity instruments						
At fair value through other comprehensive income	FVOCI	425		425		
At fair value through profit or loss	FVTPL	3				3
Derivative financial assets						

millions of €

			Amounts recognized in the statement of financial position in accordance with IFRS 9			
	Measurement category in accordance with IFRS 9	**Carrying amount Dec. 31, 2020**	Amortized cost	Fair value through other comprehensive income without recycling to profit or loss	Fair value through other comprehensive income with recycling to profit or loss	Fair value through profit or loss[a]
Derivatives without a hedging relationship	FVTPL	1,992				1,992
Of which: termination rights embedded in bonds issued	FVTPL	889				889
Of which: energy forward agreements embedded in contracts	FVTPL	77				77
Of which: options received by third parties for the purchase of shares in subsidiaries and associates	FVTPL	819				819
Derivatives with a hedging relationship	n.a.	2,047			21	2,026
Lease assets	n.a.	248				
Cash and cash equivalents, trade receivables and other financial assets directly associated with non-current assets and disposal groups held for sale	AC	206	206			
Equity instruments within non-current assets and disposal groups held for sale	FVOCI	32		32		
Liabilities						
Trade payables	AC	9,760	9,760			
Bonds and other securitized liabilities	AC	87,702	87,702			
Liabilities to banks	AC	5,257	5,257			
Liabilities to non-banks from promissory note bonds	AC	490	490			
Liabilities with the right of creditors to priority repayment in the event of default	AC	3,886	3,886			
Other interest-bearing liabilities	AC	7,206	7,206			
Of which: collateral received	AC	1,530	1,530			
Other non-interest-bearing liabilities	AC	1,703	1,703			
Lease liabilities	n.a.	32,715				
Derivative financial liabilities						
Derivatives without a hedging relationship	FVTPL	478				478
Of which: options granted to third parties for the purchase of shares in subsidiaries and associates	FVTPL	8				8
Of which: energy forward agreements embedded in contracts	FVTPL	129				129
Derivatives with a hedging relationship	n.a.	386			334	52
Trade payables and other financial liabilities directly associated with non-current assets and disposal groups held for sale	AC	398	398			
Of which: aggregated by measurement category in accordance with IFRS 9						
Assets						
Financial assets at amortized cost	AC	23,874	23,874			
Financial assets at fair value through other comprehensive income with recycling to profit or loss	FVOCI	7,516			7,516	
Financial assets at fair value through other comprehensive income without recycling to profit or loss	FVOCI	457		457		
Financial assets at fair value through profit or loss	FVTPL	2,198				2,198
Liabilities						
Financial liabilities at amortized cost	AC	116,402	116,402			
Financial liabilities at fair value through profit or loss	FVTPL	478				478

millions of €

	Amounts recognized in the statement of financial position in accordance with IFRS 16	Fair value Dec. 31, 2020[b]	Measurement category in accordance with IFRS 9	Carrying amount Dec. 31, 2019	Amounts recognized in the statement of financial position in accordance with IFRS 9				Amounts recognized in the statement of financial position in accordance with IFRS 16	Fair value Dec. 31, 2019[b]
					Amortized cost	Fair value through other comprehensive income without recycling to profit or loss	Fair value through other comprehensive income with recycling to profit or loss	Fair value through profit or loss		
Assets										
Cash and cash equivalents			AC	5,393	5,393					
Trade receivables										
At amortized cost			AC	5,452	5,452					
At fair value through other comprehensive income		7,516	FVOCI	5,390			5,390			5,390
At fair value through profit or loss		0	FVTPL	4				4		4
Other financial assets										
Originated loans and other receivables										
At amortized cost		4,758	AC	4,282	4,282					4,317
Of which: collateral paid			AC	637	637					
Of which: publicly funded projects			AC	1,350	1,350					
At fair value through other comprehensive income			FVOCI	0			0			
At fair value through profit or loss		203	FVTPL	121				121		121
Equity instruments										
At fair value through other comprehensive income		425	FVOCI	293		293				293
At fair value through profit or loss		3	FVTPL	22				22		22
Derivative financial assets										
Derivatives without a hedging relationship		1,992	FVTPL	893				893		893
Of which: termination rights embedded in bonds issued		889	FVTPL	630				630		630
Of which: energy forward agreements embedded in contracts		77	FVTPL	0				0		0
Of which: options received by third parties for the purchase of shares in subsidiaries and associates		819	FVTPL							
Derivatives with a hedging relationship		2,047	n.a.	1,439			287	1,152		1,439
Lease assets	248		n.a.	197					197	
Cash and cash equivalents, trade receivables and other financial assets directly associated with non-current assets and disposal groups held for sale			AC	0	0					
Equity instruments within non-current assets and disposal groups held for sale		32	FVOCI	35		35				35
Liabilities										
Trade payables			AC	9,431	9,431					

[a] For energy forward agreements embedded in contracts and options received from third parties for the purchase of shares in subsidiaries and associates, please refer to the detailed comments in the following section.
[b] The practical expedient under IFRS 7.29a was applied for information on specific fair values.

millions of €

	Amounts recognized in the statement of financial position in accordance with IFRS 16	Fair value Dec. 31, 2020[b]	Measurement category in accordance with IFRS 9	Carrying amount Dec. 31, 2019	Amounts recognized in the statement of financial position in accordance with IFRS 9: Amortized cost	Fair value through other comprehensive income without recycling to profit or loss	Fair value through other comprehensive income with recycling to profit or loss	Fair value through profit or loss	Amounts recognized in the statement of financial position in accordance with IFRS 16	Fair value Dec. 31, 2019[b]
Bonds and other securitized liabilities		97,655	AC	51,644	51,644					56,357
Liabilities to banks		5,393	AC	6,516	6,516					6,572
Liabilities to non-banks from promissory note bonds		586	AC	699	699					799
Liabilities with the right of creditors to priority repayment in the event of default		4,167	AC	0	0					0
Other interest-bearing liabilities		7,270	AC	4,369	4,369					4,506
Of which: collateral received			AC	1,273	1,273					
Other non-interest-bearing liabilities			AC	1,476	1,476					
Lease liabilities	32,715		n.a.	19,835					19,835	
Derivative financial liabilities										
Derivatives without a hedging relationship		478	FVTPL	325				325		325
Of which: options granted to third parties for the purchase of shares in subsidiaries and associates		8	FVTPL	7				7		7
Of which: energy forward agreements embedded in contracts		129	FVTPL	146				146		146
Derivatives with a hedging relationship		386	n.a.	1,319			1,253	66		1,319
Trade payables and other financial liabilities directly associated with non-current assets and disposal groups held for sale			AC	29	29					
Of which: aggregated by measurement category in accordance with IFRS 9										
Assets										
Financial assets at amortized cost		4,758	AC	15,127	15,127					4,317
Financial assets at fair value through other comprehensive income with recycling to profit or loss		7,516	FVOCI	5,390			5,390			5,390
Financial assets at fair value through other comprehensive income without recycling to profit or loss		457	FVOCI	328		328				328
Financial assets at fair value through profit or loss		2,198	FVTPL	1,040				1,040		1,040
Liabilities										
Financial liabilities at amortized cost		115,071	AC	74,164	74,164					68,234
Financial liabilities at fair value through profit or loss		478	FVTPL	325				325		325

[a] For energy forward agreements embedded in contracts and options received from third parties for the purchase of shares in subsidiaries and associates, please refer to the detailed comments in the following section.
[b] The practical expedient under IFRS 7.29a was applied for information on specific fair values.

Trade receivables include receivables amounting to EUR 2.0 billion (December 31, 2019: EUR 1.8 billion) due in more than one year. The fair value generally equals the carrying amount.

Disclosures on fair value

When determining the fair value, it is important to maximize the use of current inputs observable in liquid markets for the financial instrument in question and minimize the use of other inputs (e.g., historical prices, prices for similar instruments, prices on illiquid markets). A three-level measurement hierarchy is defined for these purposes. If prices quoted in liquid markets are available at the reporting date for the respective financial instrument, these will be used unadjusted for the measurement (Level 1 measurement). Other input parameters are then irrelevant for the measurement. One such example is shares and bonds that are actively traded on a stock exchange. If quoted prices on liquid markets are not available at the reporting date for the respective financial instrument, but the instrument can be measured using other inputs that are observable on the market at the reporting date, a Level 2 measurement will be applied. The conditions for this are that no major adjustments have been made to the observable inputs and no unobservable inputs are used. Examples of Level 2 measurements are collateralized interest rate swaps, currency forwards, and cross-currency swaps that can be measured using current interest rates or exchange rates. If the conditions for a Level 1 or Level 2 measurement are not met, a Level 3 measurement is applied. In such cases, major adjustments must be made to observable inputs or unobservable inputs must be used.

Financial instruments not measured at fair value, the fair values of which are disclosed nevertheless

millions of €

	Dec. 31, 2020				Dec. 31, 2019			
	Level 1	Level 2	Level 3[a]	Total	Level 1	Level 2	Level 3[a]	Total
Assets								
Originated loans and receivables		4,758		**4,758**		4,317		**4,317**
Liabilities								
Financial liabilities measured at amortized cost	87,384	26,798	889	**115,071**	40,460	27,144	630	**68,234**
Of which: bonds and other securitized liabilities	83,238	13,549	868	**97,655**	40,460	15,267	630	**56,357**
Of which: liabilities to banks		5,393		**5,393**		6,572		**6,572**
Of which: liabilities to non-banks from promissory notes		586		**586**		799		**799**
Of which: liabilities with the right of creditors to priority repayment in the event of default	4,146	0	21	**4,167**		0		**0**
Of which: other interest-bearing liabilities		7,270		**7,270**		4,506		**4,506**

[a] Separation of embedded derivatives; the fair value of the entire instrument must be categorized as Level 1.

Financial instruments measured at fair value

millions of €

	Dec. 31, 2020				Dec. 31, 2019			
	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
Assets								
Trade receivables								
At fair value through other comprehensive income			7,516	**7,516**			5,390	**5,390**
At fair value through profit or loss			0	**0**			4	**4**
Other financial assets – Originated loans and other receivables								
At fair value through other comprehensive income				**0**				**0**
At fair value through profit or loss	133	62	8	**203**	114		7	**121**
Equity instruments								
At fair value through other comprehensive income			457	**457**			328	**328**
At fair value through profit or loss			3	**3**	22			**22**
Derivative financial assets								
Derivatives without a hedging relationship		207	1,785	**1,992**		263	630	**893**
Derivatives with a hedging relationship		2,047		**2,047**		1,439		**1,439**
Liabilities								
Derivative financial liabilities								
Derivatives without a hedging relationship		341	137	**478**		172	153	**325**
Derivatives with a hedging relationship		386		**386**		1,319		**1,319**

Of the equity instruments measured at fair value through other comprehensive income and recognized under other financial assets, the instruments presented in the different levels constitute separate classes of financial instruments. In each case, the fair values of the total volume of equity instruments recognized as Level 1 are the price quotations at the reporting date.

The listed bonds and other securitized liabilities are assigned to Level 1 or Level 2 depending on the market liquidity of the relevant instrument. Consequently, issues denominated in euros or U.S. dollars with relatively large nominal amounts are to be classified as Level 1, the rest as Level 2. The fair values of the instruments assigned to Level 1 equal the nominal amounts multiplied by the price quotations at the reporting date. The fair values of the instruments assigned to Level 2 are calculated as the present values of the payments associated with the debts, based on the applicable yield curve and Deutsche Telekom's credit spread curve for specific currencies.

The fair values of liabilities to banks, liabilities to non-banks from promissory notes, and other interest-bearing liabilities are calculated as the present values of the payments associated with the debts, based on the applicable yield curve and Deutsche Telekom's credit spread curve for specific currencies.

Since there are no market prices available for the derivative financial instruments in the portfolio assigned to Level 2 due to the fact that they are not listed on the market, the fair values are calculated using standard financial valuation models, based entirely on observable inputs. The fair value of derivatives is the price that Deutsche Telekom would receive or have to pay if the financial instrument were transferred at the reporting date. Interest rates of contractual partners relevant as of the reporting date are used in this respect. The middle rates applicable as of the reporting date are used as exchange rates. In the case of interest-bearing derivatives, a distinction is made between the clean price and the dirty price. In contrast to the clean price, the dirty price also includes the interest accrued. The fair values carried correspond to the full fair value or the dirty price.

In April 2020, forward-payer swaps with a nominal value of EUR 8.8 billion when translated into euros, were terminated prematurely. These transactions were concluded for borrowings at T-Mobile US and designated as cash flow hedges in effective hedging relationships. In the reporting period, the measurement resulted in a loss from hedging instruments of EUR 924 million recognized under other comprehensive income. The secured term loan was originated on April 1, 2020. The measurement results of the forward-payer swaps between April 1, 2020 and their termination in the course of the following days amounted to EUR 39 million (expense) and were recognized in other financial income/expense.

The equity instruments measured at fair value through other comprehensive income comprise a large number of investments in strategic, unlisted individual positions. Deutsche Telekom considers the chosen measurement through other comprehensive income without recycling to profit or loss to be appropriate because there are no plans to use the investments for short-term profit-taking. At the date of disposal of an investment, the total cumulative gain or loss is reclassified to retained earnings. Acquisitions and disposals are based on business policy investment decisions.

Investments in equity instruments at fair value through other comprehensive income

millions of €

	2020	2019
Fair value as of December 31	**457**	**328**
Dividends recognized in profit/loss	1	0
on investments divested in the reporting period	0	0
on investments still held at the reporting date	0	0
Fair value at the derecognition date of instruments divested in the reporting period	52	225
Cumulative gains reclassified in the reporting period from other comprehensive income to retained earnings	7	82
Of which: from the disposal of investments	7	60
Of which: from the conversion of preference shares into common shares	0	22
Cumulative losses reclassified in the reporting period from other comprehensive income to retained earnings	0	0
Of which: from the disposal of investments	0	0

Development of the carrying amounts of the financial assets and financial liabilities assigned to Level 3

millions of €

	Equity instruments at fair value through other comprehensive income	Derivative financial assets at fair value through profit or loss: termination rights embedded in bonds issued	Derivative financial assets at fair value through profit or loss: stock options	Derivative financial assets at fair value through profit or loss: energy forward agreements embedded in contracts	Derivative financial liabilities at fair value through profit or loss: energy forward agreements embedded in contracts
Carrying amount as of January 1, 2020	**328**	**630**	**0**	**0**	**(146)**
Additions (including first-time categorization as Level 3)	116	335	0	43	0
Decreases in fair value recognized in profit/loss (including losses on disposal)	n.a.	(905)	0	(15)	(54)
Increases in fair value recognized in profit/loss (including gains on disposal)	n.a.	908	805	58	57
Decreases in fair value recognized directly in equity	(32)	n.a.	n.a.	n.a.	n.a.
Increases in fair value recognized directly in equity	99	n.a.	n.a.	n.a.	n.a.
Disposals	(52)	0	0	0	4
Currency translation effects recognized directly in equity	(2)	(79)	0	(9)	10
Carrying amount as of December 31, 2020	**457**	**889**	**805**	**77**	**(129)**

The equity instruments assigned to Level 3 that are measured at fair value through other comprehensive income and carried under other financial assets are equity investments with a carrying amount of EUR 431 million measured using the best information available at the reporting date. As a rule, Deutsche Telekom considers transactions involving shares in those companies to have the greatest relevance. Transactions involving shares in comparable companies are also considered. The proximity of the relevant transaction to the reporting date, and the question of whether it was conducted at arm's length, are relevant for deciding which information is used for the measurement. Furthermore, the degree of similarity between the object being measured and comparable companies must be taken into consideration. Based on Deutsche Telekom's own assessment, the fair values of the equity investments at the reporting date could be determined with sufficient reliability. For the development of the carrying amounts in the reporting period, please refer to the table above. At the reporting date, investments with a carrying amount of EUR 32 million were held for sale, while there were no plans to sell the remaining investments. In the case of investments with a carrying amount of EUR 330 million, transactions involving shares in these companies took place at arm's length sufficiently close to the reporting date, which is why the share prices agreed in the transactions were to be used without adjustment for the measurement as of December 31, 2020. In the case of investments with a carrying amount of EUR 6 million, an analysis of operational indicators (especially revenue, EBIT, and liquidity) revealed that the carrying amounts were equivalent to current fair values. Due to better comparability, previous arm's length transactions involving shares in these companies are preferable to more recent transactions involving shares in similar companies. In the case of investments with a carrying amount of EUR 95 million, for which the last arm's length transactions relating to shares in these companies took place some time ago, a measurement performed more recently relating to shares in similar companies provides the most reliable representation of the fair values. Here, multiples to the reference variable of expected revenue (ranging between 3.0 and 12.7) were taken. The 25 % quantile, the median, or the 75 % quantile was used for the multiples depending on the specific circumstances. If other values had been used for the multiples and for the expected revenue amounts, the fair values calculated would have been different. These hypothetical deviations (sensitivities) are shown in the table "Sensitivities of the carrying amounts of the financial assets and financial liabilities assigned to Level 3 depending on unobservable inputs." In addition, non-material individual items with a carrying amount of EUR 26 million (when translated into euros) are included with differences in value of minor relevance.

For the development of the carrying amounts in the reporting year, please refer to the table above.

The derivatives without a hedging relationship assigned to Level 3 and carried under derivative financial assets relate to options embedded in bonds issued by T-Mobile US with a carrying amount of EUR 889 million when translated into euros. The options, which can be exercised by T-Mobile US at any time, allow early redemption of the bonds at fixed exercise prices. Observable market prices are available regularly and also at the reporting date for the bonds as entire instruments, but not for the options embedded therein. The termination rights are measured using an option pricing model. Historical interest rate volatilities of bonds issued by T-Mobile US and comparable issuers are used for the measurement because these provide a more reliable estimate at the reporting date than current market interest rate volatilities. The spread curve, which is also unobservable, was derived on the basis of current market prices of bonds issued by T-Mobile US and debt instruments of comparable issuers. Because of the substantial increase in the volumes and liquidity of bonds issued and the ongoing phase of negative interest rates, the measurement model was recalibrated in the reporting period. Unlike previously, risk-free interest rates and spread are now simulated separately from each other. For the mean reversion unobservable input, 3 % is now used instead of 10 %. At the current reporting date, the following interest rate volatility and spreads were used for the various rating levels of the bonds:

For the development of the carrying amounts in the reporting year, please refer to the table above.

Interest rate volatilities and spreads used by rating level

%	Interest volatility (absolute figure)	Spread
BBB+	0.2 %–0.3 %	0.2 %–1.2 %
BBB-	0.6 %–0.8 %	0.4 %–1.8 %
BB	1.0 %–1.3 %	0.6 %–2.8 %

In our opinion, the values used constitute the best estimate in each case. If other values had been used for interest rate volatility, spread curve or mean reversion, the fair values calculated would have been different. These hypothetical deviations (sensitivities) are shown in the table below. If the risk-free interest rate had been 50 basis points higher (lower) at the reporting date, the fair value of the options would have been EUR 181 million lower (EUR 198 million higher). In the reporting period, net income of EUR 321 million when translated into euros was recognized under Level 3 in other financial income/expense for unrealized gains for the options in the portfolio at the reporting date. In the reporting period, three options were exercised and the relevant bonds canceled prematurely. At the time of termination, the options and their total carrying amount of EUR 358 million when translated into euros were expensed and derecognized. Please refer to the table above for the development of the carrying amounts in the reporting period. The changes in value recognized in profit or loss in the reporting period were mainly attributable to fluctuations in the interest rates and historical interest rate volatilities in absolute terms that are relevant for measurement. Due to their distinctiveness, these instruments constitute a separate class of financial instruments.

Sensitivities[a] of the carrying amounts of the financial assets and financial liabilities assigned to Level 3 depending on unobservable inputs

millions of €

	Equity instruments at fair value through other comprehensive income	Derivative financial assets at fair value through profit or loss: termination rights embedded in bonds issued	Derivative financial assets at fair value through profit or loss: stock options	Derivative financial assets at fair value through profit or loss: energy forward agreements embedded in contracts	Derivative financial liabilities at fair value through profit or loss: energy forward agreements embedded in contracts
Multiple next-level-up quantile	25				
Multiple next-level-down quantile	(6)				
Expected revenues +10 %	2				
Expected revenues -10 %	(2)				
Interest rate volatility[b] +10 %		46			
Interest rate volatility[b] -10 %		(39)			
Spread curve[c] +50 basis points		(251)			
Spread curve[c] -50 basis points		315			
Mean reversion[d] +100 basis points		(29)			
Mean reversion[d] -100 basis points		34			
Future energy prices +10 %				44	28
Future energy prices -10 %				(45)	(28)
Future energy output +5 %				16	(2)
Future energy output -5 %				(17)	2
Future prices for renewable energy credits[e] +100 %				29	24
Future prices for renewable energy credits[e] from zero				(30)	(24)
Share price volatility[f] +10 %			76		
Share price volatility[f] -10 %			(76)		

[a] Change in the relevant input parameter assuming all other input parameters are unchanged.

[b] Interest rate volatility shows the magnitude of fluctuations in interest rates over time (relative change). The larger the fluctuations, the higher the interest rate volatility.

[c] The spread curve shows, for the respective maturities, the difference between the interest rates payable by T-Mobile US and the interest rates on U.S. government bonds. A minimum of zero was set for the spread curve for the sensitivity calculation, i.e., negative spreads are excluded.

[d] Mean reversion describes the assumption that, after a change, an interest rate will revert to its average over time. The higher the selected value (mean reversion speed), the faster the interest rate will revert to its average in the measurement model.

[e] Renewable energy credits is the term used for U.S. emission certificates.

[f] The share price volatility shows the expected range of variation of the basic value over the remaining term of an option.

With a carrying amount of EUR -109 million when translated into euros, the derivatives without a hedging relationship assigned to Level 3 and carried under derivative financial liabilities relate to energy forward agreements embedded in contracts entered into by T-Mobile US. The same applies to derivative financial assets with a carrying amount of EUR 77 million when translated into euros. These agreements consist of two components: the energy forward agreement and the acquisition of renewable energy credits by T-Mobile US. The contracts have been entered into with energy producers since 2017 and run for terms of between 12 and 15 years from the commencement of commercial operation. In the case of five energy forward agreements, commercial operations have already begun; with the others, commercial operations are set to begin between 2021 and 2022. The respective settlement period of the energy forward agreements, which are accounted for separately as derivatives, also starts when the facility begins commercial operation. Under the energy forward agreements, T-Mobile US receives variable amounts based on the facility's actual energy output and the then current energy prices, and pays fixed amounts per unit of energy generated throughout the term of the contract. The energy forward agreements are measured using valuation models because no observable market prices are available. The value of the derivatives is materially influenced by the facility's future energy output, for which T-Mobile US estimated a value of 4,057 gigawatt hours per year at the reporting date. The value of the derivatives is also significantly influenced by future energy prices. Only transactions with terms of up to approximately five years are routinely traded on the energy markets and, consequently, energy prices for years that lie further in the future constitute unobservable inputs. Further, the value of the derivatives is materially influenced by the future prices for renewable energy credits, which are also not observable. For the unobservable portion of the term, T-Mobile US used on-peak energy prices of between EUR 13.53/MWh and EUR 49.58/MWh when translated into euros and off-peak prices of between EUR 6.94/MWh and EUR 37.78/MWh when translated into euros. An average on-peak/off-peak ratio of 51 % was used. In our opinion, the values used constitute the best estimate in each case. At the reporting date, the calculated fair value for the assets amounted to EUR 123 million when translated into euros and EUR -30 million for the liabilities. If other values had been used for future energy prices, future energy output, or future prices of renewable energy credits, the fair values calculated would have been different. These hypothetical deviations (sensitivities) are shown in the table above. In the reporting period, net income of EUR 50 million (when translated into euros) was recognized under the Level 3 measurement in other operating income/expense for unrealized gains for the derivatives. Please refer to the corresponding table for the development of the carrying amounts in the reporting period. The market-price changes in the reporting period were largely attributable to changes in observable and unobservable energy prices and to interest rate effects. As part of the business combination with Sprint two agreements concluded by Sprint in 2019 with a carrying amount of EUR 43 million when translated into euros were recognized as financial assets, increasing the carrying amount. One agreement was terminated prematurely in the current reporting period. Due to their distinctiveness, these instruments constitute a separate class of financial instruments. In the view of T-Mobile US, the contracts were entered into at current market conditions, and the most appropriate parameters for the unobservable inputs were used for measurement purposes. The transaction price at inception was zero in each case. Since the unobservable inputs have a material influence on the measurement of the derivatives, the respective amount resulting from initial measurement – with the exception of the agreements concluded by Sprint that are explained below – was not carried on initial recognition. Instead, these amounts are amortized in profit or loss on a straight-line basis over the period of commercial energy generation (for a total amount of EUR 11 million per year when translated into euros). This amortization adjusts the effects from measuring the derivatives in each accounting period using the respective valuation models and updated parameters. All amounts from the measurement of the derivatives are presented in net terms per contract in the statement of financial position (derivative financial assets/liabilities) and in the income statement (other operating income/expenses). The development of the amount yet to be amortized in the income statement in the reporting period is shown in the following table. Unobservable inputs also have a material influence on the measurement of the derivatives for the agreements concluded by Sprint. However, under the requirements for business combinations, the respective amounts resulting from the measurement were recognized as derivative financial assets as of April 1, 2020, as a result of which there are no amounts yet to be amortized for these agreements. On the following reporting dates, the effects from the periodic measurement of the derivatives will be recorded in full in the income statement (other operating expenses or other operating income).

The financial assets assigned to Level 3 include derivative financial assets with a carrying amount of EUR 805 million when translated into euros, resulting from the stock options to buy shares in T-Mobile US received from SoftBank in June 2020. The stock options, which can be exercised at any time, mature in 2024, can be exercised partially at fixed and partially at variable purchase prices, and are measured using an option pricing model. In addition to the share price observable on the market and the risk-free interest rates, average share price volatilities of T-Mobile US and comparable companies are calculated based on historic and current figures, since these provide a more reliable estimate for these inputs at the reporting date than exclusively using the current market volatilities. The absolute figure used for the share price volatility at the current reporting date was 27.5 % which, in our opinion, constitutes the best estimate. At the reporting date, the calculated fair value for the stock option amounted to EUR 1,600 million. If another value had been used for the share price volatility, the fair value calculated would have been different. These hypothetical deviations (sensitivities) are shown in the table above. Due to their distinctiveness, these instruments constitute a separate class of financial instruments. The transaction price at inception was zero. Since the unobservable inputs have a material influence on the measurement of the options, the fair value resulting from initial measurement of EUR 1,005 million when translated into euros (before deduction of transaction costs) was not immediately recognized. Instead, this amount will be amortized in profit or loss over the lifetime of the options. This amortization adjusts the effects from measuring the options on an ongoing basis using the valuation model and updated parameters. All amounts from the measurement of the options are presented in net terms in the statement of financial position (other derivative financial assets) and in the income statement (other financial income/expense). The market-price changes in the reporting period are largely attributable to fluctuations in the share price and the risk-free interest rate. The development of the amount yet to be amortized in the income statement in the reporting period is shown in the following table.

Development of the not yet amortized amounts

millions of €

	Energy forward agreements	Stock options
Measurement amounts on initial recognition	**178**	**1,005**
Measurement amounts on initial recognition (additions during the reporting period)	0	0
Measurement amounts amortized in profit or loss in prior periods	(9)	0
Measurement amounts amortized in profit or loss in the current reporting period	(9)	(127)
Currency translation adjustments	(8)	(49)
Disposals in the current reporting period	(5)	0
Measurement amounts not amortized as of December 31, 2020	**147**	**829**

For the trade receivables, loans issued, and other receivables assigned to Level 3, which are measured either at fair value through other comprehensive income or at fair value through profit or loss, the main factor in determining fair value is the credit risk of the relevant counterparties. If the default rates applied as of the reporting date had been 1 % higher (lower) with no change in the reference variables, the fair values of the instruments would have been 1 % lower (higher).

The financial assets and financial liabilities measured at fair value through profit or loss and assigned to Level 3 include derivative financial assets with a carrying amount of EUR 14 million when translated into euros and derivative financial liabilities with a carrying amount of EUR -8 million, resulting from options purchased from or granted to third parties for the purchase of company shares. No notable fluctuations in value are expected from these individual items. Due to their distinctiveness, these instruments each constitute a separate class of financial instruments.

Net gain/loss by measurement category

millions of €

		Recognized in profit or loss from interest and dividends	Recognized in profit or loss from subsequent measurement			Recognized directly in equity from subsequent measurement	Recognized in profit or loss from derecognition	Net gain (loss)
			At fair value	Currency trans-lation	Impair-ments/ allowances	At fair value[a]		
Debt instruments measured at amortized cost	2020	15	n.a.	(1,207)	(418)	n.a.	(188)	**(1,798)**
	2019	23	n.a.	662	(165)	n.a.	(41)	**479**
Debt instruments measured at fair value through profit or loss	2020	16	0	n.a.	n.a.	n.a.	10	**26**
	2019	14	1	n.a.	n.a.	n.a.	6	**21**
Debt instruments measured at fair value through other comprehensive income	2020	0	n.a.	n.a.	(435)	(19)	(64)	**(518)**
	2019	0	n.a.	n.a.	(257)	(26)	0	**(283)**
Equity instruments measured at fair value through profit or loss	2020	0	0	n.a.	n.a.	n.a.	8	**8**
	2019	0	(6)	n.a.	n.a.	n.a.	(2)	**(8)**
Equity instruments measured at fair value through other comprehensive income	2020	1	n.a.	n.a.	n.a.	62	n.a.	**63**
	2019	1	n.a.	n.a.	n.a.	99	n.a.	**100**
Derivatives measured at fair value through profit or loss	2020	n.a.	297	n.a.	n.a.	n.a.	n.a.	**297**
	2019	n.a.	363	n.a.	n.a.	n.a.	n.a.	**363**
Financial liabilities measured at amortized cost	2020	(3,510)	n.a.	1,462	n.a.	n.a.	n.a.	**(2,048)**
	2019	(1,768)	n.a.	(678)	n.a.	n.a.	n.a.	**(2,446)**
	2020	**(3,477)**	**296**	**255**	**(853)**	**43**	**(234)**	**(3,970)**
	2019	**(1,729)**	**358**	**(16)**	**(422)**	**73**	**(37)**	**(1,774)**

[a] The amount reported under debt instruments measured at fair value through other comprehensive income is the net amount after deduction of the effects recognized in profit or loss for impairment losses in the amount of EUR -435 million.

Interest from financial instruments is recognized in finance costs, dividends in other financial income/expense (income from investments).

For further information, please refer to Note 28 “Finance costs” and Note 30 “Other financial income/expense.”

The other components of the net gain/loss are recognized in other financial income/expense, except for allowances on trade receivables that are classified as debt instruments measured at amortized cost and debt instruments measured at fair value through other comprehensive income, which are reported under other operating expenses.

For further information, please refer to Note 2 “Trade receivables.”

The net gain from the subsequent measurement for financial instruments allocated to the measurement category at fair value through profit or loss (EUR 297 million) also includes interest and currency translation effects. The net currency translation losses on financial assets classified as debt instruments measured at amortized cost (EUR 1,207 million) are primarily attributable to the Group-internal transfer of foreign-currency loans taken out by Deutsche Telekom's financing company, Deutsche Telekom International Finance B.V., on the capital market. These were offset by corresponding currency translation gains on capital market liabilities of EUR 1,462 million. These include currency translation losses from derivatives that Deutsche Telekom used as hedging instruments for hedge accounting in foreign currency (EUR 452 million; 2019: gains of EUR 179 million). Finance costs from financial liabilities measured at amortized cost (expense of EUR 3,510 million) primarily consist of interest expense on bonds and other (securitized) financial liabilities. The item also includes interest expenses from the addition of accrued interest and interest income from interest discounted from trade payables. However, it does not include the interest expense and interest income from interest rate derivatives Deutsche Telekom used in the reporting year to hedge the fair value risk of financial liabilities.

For further information, please refer to Note 28 "Finance costs."

Principles of risk management. Deutsche Telekom is exposed in particular to risks from changes in exchange rates, interest rates, and market prices that affect its assets, liabilities, and forecast transactions. Financial risk management aims to limit these market risks through ongoing operational and finance activities. Selected derivative and non-derivative hedging instruments are used for this purpose, depending on the risk assessment. However, Deutsche Telekom only hedges the risks that affect the Group's cash flow. Derivatives are exclusively used as hedging instruments, i.e., not for trading or other speculative purposes. To reduce the credit risk, hedging instruments are generally only concluded with leading financial institutions whose credit rating is at least BBB+/Baa1. In addition, the credit risk for derivatives with a positive market value is generally minimized through collateral agreements with all core banks. Furthermore, the limits for deposits are also set and monitored on a daily basis depending on the rating, share price performance, and credit default swap level of the respective counterparty.

The fundamentals of Deutsche Telekom's financial policy are established by the Board of Management and overseen by the Supervisory Board. Group Treasury is responsible for implementing the financial policy and for ongoing risk management. Certain transactions require the prior approval of the Board of Management, which is also regularly briefed on the severity and amount of the current risk exposure.

Group Treasury regards effective management of the market risk as one of its main tasks. The main risks relate to foreign currencies and interest rates.

Currency risks. Deutsche Telekom is exposed to currency risks from its investing, financing, and operating activities. Risks from foreign currencies are hedged to the extent that they influence the Group's cash flows. Foreign-currency risks that do not influence the Group's cash flows (i.e., the risks resulting from the translation of assets and liabilities of foreign operations into the Group's reporting currency) are generally not hedged, however. Deutsche Telekom may nevertheless also hedge this foreign-currency risk under certain circumstances.

Foreign-currency risks in the area of investment result, for example, from the acquisition and disposal of investments in foreign companies. Deutsche Telekom hedges these risks. If the risk position exceeds EUR 100 million, the Board of Management must make a special decision on how the risk shall be hedged. If the risk position is below EUR 100 million, Group Treasury performs the currency hedging itself. At the reporting date, Deutsche Telekom was not exposed to any significant risks from foreign-currency transactions in the field of investments.

Foreign-currency risks in the financing area are caused by financial liabilities in foreign currency and loans in foreign currency that are issued to Group entities for financing purposes. Group Treasury hedges these risks in full. Cross-currency swaps and currency derivatives are used to convert financial obligations and intragroup loans denominated in foreign currencies into the Group entities' functional currencies.

At the reporting date, the foreign-currency liabilities for which currency risks were hedged mainly consisted of bonds in U.S. dollars and pounds sterling. On account of these hedging activities, Deutsche Telekom was not exposed to any significant currency risks in the area of financing at the reporting date.

The Group entities predominantly execute their operating activities in their respective functional currencies. Payments made in a currency other than the respective functional currency result in foreign-currency risks in the Group. These mainly relate to payments for telecommunications services (procurement of network technology and mobile communications equipment as well as payments to international telecommunications companies and for the provision of connection services) and IT services (procurement of IT hardware, software, and services). Deutsche Telekom generally uses currency derivatives for hedging purposes. On account of these hedging activities, Deutsche Telekom was not exposed to any significant exchange rate risks from its operating activities at the reporting date.

For the presentation of market risks, IFRS 7 requires sensitivity analyses that show the effects of hypothetical changes of relevant risk variables on profit or loss and shareholders' equity. In addition to currency risks, Deutsche Telekom is exposed to interest rate risks and price risks in its investments. The periodic effects are determined by relating the hypothetical changes in the risk variables to the balance of financial instruments at the reporting date. It is assumed that the balance at the reporting date is representative for the year as a whole.

Currency risks as defined by IFRS 7 arise on account of financial instruments being denominated in a currency that is not the functional currency and being of a monetary nature; differences resulting from the translation of financial statements into the Group's presentation currency are not taken into consideration. Relevant risk variables are generally all non-functional currencies in which Deutsche Telekom has contracted financial instruments.

The currency sensitivity analyses are based on the following assumptions: Major non-derivative monetary financial instruments (liquid assets, receivables, interest-bearing securities and/or debt instruments held, interest-bearing liabilities, lease liabilities, non-interest-bearing liabilities) are either directly denominated in the functional currency or are transferred to the functional currency through the use of derivatives. Exchange rate fluctuations therefore have no effects on profit or loss, or shareholders' equity.

Equity instruments held are of a non-monetary nature and therefore are not exposed to a currency risk as defined by IFRS 7.

Interest income and interest expense from financial instruments are also either recorded directly in the functional currency or transferred to the functional currency using derivatives. For this reason, there can be no effects on the variables considered in this connection.

In the case of fair value hedges designated to hedge currency risks, the changes in the fair values of the hedged item and the hedging instrument attributable to changes in exchange rates balance out almost completely in the income statement in the same period. As a consequence, these financial instruments are not exposed to currency risks with an effect on profit or loss, or shareholders' equity, either.

Cross-currency swaps are always assigned to non-derivative hedged items, so these instruments do not have any currency effects, either.

Deutsche Telekom is therefore only exposed to currency risks from specific currency derivatives. Some of these are currency derivatives that are part of an effective cash flow hedge for hedging payment variability resulting from changes in exchange rates in accordance with IFRS 9. Volatility of exchange rates of the currencies on which these transactions are based affects the hedging reserves in shareholders' equity and the fair value of these hedging instruments. Others are currency derivatives that are neither part of one of the hedges defined in IFRS 9 nor part of a natural hedge. These derivatives are used to hedge planned transactions. Changes in exchange rates of the currencies on which such financial instruments are based affect other financial income or expense (net gain/loss from remeasurement of financial assets and liabilities to fair value).

If the euro had gained (lost) 10 % against all currencies at December 31, 2020, the hedging reserves in shareholders' equity and the fair values of the hedging instruments before taxes would have been EUR 23 million higher (lower) (December 31, 2019: EUR 4 million higher (lower)). The hypothetical effect of EUR 23 million on profit or loss primarily results from the currency sensitivities EUR/USD: EUR 26 million, EUR/GBP: EUR -7 million, and EUR/CHF: EUR 4 million. If the euro had gained (lost) 10 % against all currencies at December 31, 2020, other financial income and the fair value of the hedging instruments before taxes would have been EUR 137 million higher (lower) (December 31, 2019: EUR 52 million higher (lower)). The hypothetical effect of EUR 137 million on profit or loss primarily results from the currency sensitivities EUR/USD: EUR 107 million and EUR/GBP: EUR 33 million.

Interest rate risks. Deutsche Telekom is exposed to interest rate risks, mainly in the euro zone and in the United States. The interest rate risks are managed as part of the interest rate management activities. For the debt position in euros a maximum variable percentage is set on an annual basis. The debt position of T-Mobile US in U.S. dollars is primarily determined through fixed-income securities, largely with issuer cancellation rights. The composition of the liabilities portfolio (ratio of fixed to variable) is managed by issuing non-derivative financial instruments and, where necessary, also deploying derivative financial instruments. Regular reports are submitted to the Board of Management and Supervisory Board.

Including derivative hedging instruments, an average of 44 % (2019: 57 %) of the debt position denominated in euros had a variable rate of interest in 2020. There were no significant fluctuations in the course of the reporting year. In U.S. dollars, – compared to 2019 – the average variable share decreased from 16 % to 8 %, mainly due to the business combination of T-Mobile US and Sprint and the issuing of new fixed-interest bonds.

Interest rate risks are presented by way of sensitivity analyses in accordance with IFRS 7. These show the effects of changes in market interest rates on interest payments, interest income and expense, other income components, and, if appropriate, shareholders' equity. The interest rate sensitivity analyses are based on the following assumptions: Changes in the market interest rates of non-derivative financial instruments with fixed interest rates only affect income if these are measured at their fair value. As such, all financial instruments with fixed interest rates that are carried at amortized cost are not subject to interest rate risk as defined in IFRS 7.

In the case of fair value hedges designated for hedging interest rate risks, the changes in the fair values of the hedged item and the hedging instrument attributable to changes in interest rates balance out almost completely in the income statement in the same period. This means that interest-rate-based changes in the measurement of the hedged item and the hedging instrument largely do not affect income and are therefore not subject to interest rate risk.

In the case of interest rate derivatives in fair value hedges, however, changes in market interest rates affect the amount of interest payments. As a consequence, they have an effect on interest income and are therefore included in the calculation of income-related sensitivities.

Changes in the market interest rate regarding financial instruments that were designated as hedging instruments in a cash flow hedge to hedge payment variability resulting from changes in interest rates affect the hedging reserve in shareholders' equity and are therefore taken into consideration in the equity-related sensitivity calculations.

Changes in market interest rates affect the interest income or expense of non-derivative variable-interest financial instruments, the interest payments of which are not designated as hedged items of cash flow hedges against interest rate risks. As a consequence, they are included in the calculation of income-related sensitivities.

In addition, changes in the market interest rate had an impact on the carrying amount of trade receivables recognized at fair value and originated loans and other receivables. However, this variability is not managed.

Changes in the market interest rate regarding interest rate derivatives (interest rate swaps, cross-currency swaps) that are not part of a hedging relationship as set out in IFRS 9 affect other financial income or expense and are therefore taken into consideration in the income-related sensitivity calculations. Currency derivatives are not exposed to interest rate risks and therefore do not affect the interest rate sensitivities.

If the market interest rates had been 100 basis points higher at December 31, 2020, profit or loss before taxes would have been EUR 199 million lower (December 31, 2019: EUR 553 million). If the market interest rates had been 100 basis points lower at December 31, 2020, profit or loss before taxes would have been EUR 198 million higher (December 31, 2019: EUR 617 million). The hypothetical effect of EUR 198 million/EUR -199 million on income primarily results from potential effects of EUR 259 million/EUR -259 million from interest rate derivatives, and EUR 11 million/EUR -11 million from non-derivative financial liabilities. In addition, potential effects of EUR -75 million/EUR 75 million result from the stock options received from SoftBank and of EUR -4 million/EUR -5 million from the energy forward agreements entered into by T-Mobile US. Potential effects from interest rate derivatives are partially balanced out by the contrasting performance of non-derivative financial instruments, which cannot, however, be shown as a result of applicable accounting standards. The effects from the options embedded in the bonds issued by T-Mobile US are not included in this simulation. The resulting sensitivities are set out in the above table "Sensitivities of the carrying amounts of the financial assets and financial liabilities assigned to Level 3 depending on unobservable inputs." However, the effects from the other financial instruments assigned to Level 3 described above are included. If the market interest rates had been 100 basis points higher (lower) at December 31, 2020, the hedging and revaluation reserves in equity before taxes would have been EUR 271 million higher (EUR 271 million lower) (December 31, 2019: EUR 1,201 million higher (EUR 1,272 million lower)).

Other price risks. As part of the presentation of market risks, IFRS 7 also requires disclosures on how hypothetical changes in risk variables affect the price of financial instruments. Important risk variables are stock exchange prices or indexes.

Aside from the value-creating factors in the financial instruments assigned to Level 3 described above, there were no other price risks at the reporting date. If the share price of T-Mobile US had been 10 % higher (lower) at December 31, 2020, the fair value of the stock options to buy shares in T-Mobile US received from SoftBank would have been EUR 384 million higher (EUR 359 million lower).

Deutsche Telekom is exposed to a credit risk from its operating activities and certain financing activities. As a rule, transactions with regard to financing activities are only concluded with counterparties that have at least a credit rating of BBB+/Baa1, in connection with an operational credit management system. At the level of operations, the outstanding debts are continuously monitored in each area, i.e., locally. Credit risks are taken into account through individual allowances and allowances calculated at portfolio level. The solvency of the business with corporate customers, especially international carriers, is monitored separately. In terms of the overall risk exposure from the credit risk, however, the receivables from these counterparties are not so extensive as to justify extraordinary concentrations of risk.

Maximum credit risk of financial assets

millions of €

Classes of financial instruments (IFRS 7)	Measurement category (IFRS 9)	2020	2019
Originated loans and other receivables	AC	4,733	4,282
	FVOCI	0	0
	FVTPL	203	121
Cash and cash equivalents	AC	13,012	5,392
Trade receivables	AC	6,128	5,452
	FVOCI	7,516	5,390
	FVTPL	0	4
Contract assets (IFRS 15)	n.a.	1,966	1,874
Lease receivables	n.a.	248	196

Development of allowances

millions of €

	General approach									Simplified approach			
	12-month expected credit losses			Lifetime expected credit losses									
	Stage 1 – No change in credit risk since initial recognition			Stage 2 – Significant increase in credit risk since initial recognition, not credit-impaired			Stage 3 – Credit-impaired at the reporting date (not purchased or originated credit-impaired)						
	Cash and cash equivalents	Originated loans and other receivables		Cash and cash equivalents	Originated loans and other receivables		Cash and cash equivalents	Originated loans and other receivables		Trade receivables		Contract assets	Lease assets
	AC	AC	FVOCI	AC	AC	FVOCI	AC	AC	FVOCI	AC	FVOCI	n.a.	n.a.
Jan. 1, 2020	**0**	**(4)**	**0**	**0**	**0**	**0**	**0**	**(8)**	**0**	**(1,314)**	**(552)**	**(36)**	**0**
Reclassification due to a change in business model										9		2	
Additions								(3)		(824)	(453)	(20)	
Use										596	707	5	
Reversal								1		166		10	
Other										54	18	1	
Foreign currency effect													
Dec. 31, 2020	**0**	**(4)**	**0**	**0**	**0**	**0**	**0**	**(10)**	**0**	**(1,313)**	**(280)**	**(38)**	**0**

There were no material transfers in the general approach.

Credit rating of financial assets measured at amortized cost or at fair value through other comprehensive income

millions of €

	Dec. 31, 2020				Dec. 31, 2019			
	Contractual obligations fulfilled to date	Disruptions in performance already occurred	Non-performing	Total	Contractual obligations fulfilled to date	Disruptions in performance already occurred	Non-performing	Total
General approach (short term)								
12-month expected credit losses (stage 1)	15,909			**15,909**	8,224			**8,224**
Lifetime expected credit losses								
Significant increase in credit risk, but not credit-impaired (stage 2)		158		**158**		103		**103**
Credit-impaired at the reporting date, but not purchased or originated credit-impaired (stage 3)			42	**42**			28	**28**
	15,909	**158**	**42**	**16,109**	**8,224**	**103**	**28**	**8,355**
General approach (long term)								
12-month expected credit losses (stage 1)	1,650			**1,650**	1,326			**1,326**
Lifetime expected credit losses								
Significant increase in credit risk, but not credit-impaired (stage 2)		1		**1**		1		**1**
Credit-impaired at the reporting date, but not purchased or originated credit-impaired (stage 3)			0	**0**			0	**0**
	1,650	**1**	**0**	**1,651**	**1,326**	**1**	**0**	**1,327**
Simplified approach								
Trade receivables	13,379	489	1,080	**14,948**	11,083	434	1,159	**12,676**
Contract assets	1,994	8	8	**2,010**	1,901	1	7	**1,909**
Lease receivables	239	0	8	**247**	197			**197**
	15,612	**497**	**1,096**	**17,205**	**13,181**	**435**	**1,166**	**14,782**
Financial assets that are purchased or originated credit-impaired								
Receivables	11			**11**	4			**4**
	33,182	**656**	**1,138**	**34,976**	**22,735**	**539**	**1,194**	**24,468**

Offsetting of financial instruments

millions of €

	Dec. 31, 2020				Dec. 31, 2019			
	Trade receivables	Trade payables	Derivative financial assets	Derivative financial liabilities	Trade receivables	Trade payables	Derivative financial assets	Derivative financial liabilities
Gross amounts subject to enforceable master netting arrangements or similar agreements	465	441	2,254	727	202	208	1,702	1,491
Amounts set off in the statement of financial position in accordance with IAS 32.42	(119)	(119)			(98)	(98)		
Net amounts presented in the statement of financial position	**346**	**322**	**2,254**	**727**	**104**	**110**	**1,702**	**1,491**
Amounts subject to enforceable master netting arrangements or similar agreements and not meeting all offsetting requirements in accordance with IAS 32.42	**(28)**	**(28)**	**(2,210)**	**(727)**	**(37)**	**(37)**	**(1,653)**	**(1,000)**
Of which: amounts related to recognized financial instruments	(28)	(28)	(693)	(693)	(37)	(37)	(446)	(446)
Of which: amounts related to financial collateral (including cash collateral)			(1,517)	(34)			(1,207)	(554)
Net amounts	**318**	**294**	**44**	**0**	**67**	**73**	**49**	**491**

Offsetting is applied in particular to receivables and liabilities at Deutsche Telekom AG and Telekom Deutschland GmbH for the routing of international calls via the fixed network and for roaming fees in the mobile network.

In line with the contractual provisions, in the event of insolvency all derivatives with a positive or negative fair value that exist with the respective counterparty are offset against each other, leaving a net receivable or liability. The net amounts are normally recalculated every bank working day and offset against each other. When the netting of the positive and negative fair values of all derivatives was positive from Deutsche Telekom's perspective, the counterparty provided Deutsche Telekom with cash pursuant to the collateral contracts mentioned in Note 1 "Cash and cash equivalents." The credit risk was thus further reduced.

When the netting of the positive and negative fair values of all derivatives was negative from Deutsche Telekom's perspective, Deutsche Telekom provided cash collateral to counterparties pursuant to collateral agreements. The net amounts are normally recalculated every bank working day and offset against each other. The cash collateral paid is offset by corresponding negative net derivative positions of EUR 34 million at the reporting date, which is why it was not exposed to any credit risks in this amount at the reporting date.

For further information, please refer to Note 11 "Other financial assets."

The collateral paid is reported under originated loans and other receivables within other financial assets. On account of its close connection to the corresponding derivatives, the collateral paid constitutes a separate class of financial assets. Likewise, the collateral received, which is reported as other interest-bearing liabilities under financial liabilities, constitutes a separate class of financial liabilities on account of its close connection to the corresponding derivatives. There were no other significant agreements reducing the maximum exposure to the credit risk of financial assets. The maximum exposure to the credit risk of the other financial assets thus corresponds to their carrying amounts.

In accordance with the terms of the bonds issued by T-Mobile US, T-Mobile US has the right to terminate the majority of bonds prematurely under specific conditions. The rights of early termination constitute embedded derivatives and are presented separately as derivative financial assets in the consolidated statement of financial position. Since they are not exposed to any credit risk, they constitute a separate class of financial instruments. Please refer to the explanations above for more information on the energy forward agreements for which no collateral is provided. There is also no credit risk on embedded derivatives held.

No collateral is provided for the options acquired from third parties for shares in a subsidiary of Deutsche Telekom or shares in other companies (see above).

In connection with auctions for the planned acquisition of spectrum licenses, subsidiaries of Deutsche Telekom have deposited additional cash collateral of EUR 446 million when translated into euros. At the reporting date, cash and cash equivalents of EUR 63 million when translated into euros were pledged as collateral for liabilities issued by Sprint with right of creditors to priority repayment in the event of default. For further information, please refer to Note 13 "Financial liabilities and lease liabilities." This cash collateral is not exposed to any significant credit risk.

Liquidity risk. For further information, please refer to Note 13 "Financial liabilities and lease liabilities."

Hedge accounting

Fair value hedges. To hedge the fair value risk of fixed-interest liabilities, Deutsche Telekom primarily uses interest rate swaps and forward interest rate swaps (pay variable, receive fixed) denominated in EUR, GBP, and USD. Fixed-income bonds denominated in EUR, GBP, and USD were designated as hedged items. The changes in the fair values of the hedged items resulting from changes in the EURIBOR, GBP LIBOR, or USD LIBOR swap rate are offset against the changes in the value of these interest rate swaps. In addition, cross-currency swaps mainly in the EUR/USD and EUR/GBP currency pairs, are designated as fair value hedges, which convert fixed-income foreign currency bonds into variable-interest EUR bonds to hedge the interest rate and currency risk. The changes in the fair value of the hedged items resulting from changes in the USD LIBOR and the GBP LIBOR swap rate as well as the USD and GBP exchange rate are offset against the changes in the fair value of these cross-currency swaps. The aim of the fair value hedges is thus to transform the fixed-income bonds into variable-interest debt, thus hedging the fair value (interest rate risk and currency risk) of these financial liabilities. Credit risks are not part of the hedging.

Cash flow hedges – interest rate risks. Deutsche Telekom mainly uses payer interest rate swaps and forward-payer interest rate swaps (pay fixed, receive variable) to hedge the cash flow risk of existing and future debt. The interest payments to be made in the hedging period are the hedged items and are recognized in profit or loss in the same period. Hedged items may be individual liabilities, portfolios of liabilities, or combinations of liabilities and derivatives (aggregate risk exposure). The changes in the cash flows of the hedged items resulting from changes in the USD LIBOR rate and the EURIBOR rate are offset against the changes in the cash flows of the interest rate swaps. The aim of this hedging is to transform the variable-interest bonds into fixed-income debt, thus hedging the cash flows of the financial liabilities. Credit risks are not part of the hedging.

Cash flow hedges – currency risks. Deutsche Telekom entered into currency derivative and cross-currency swaps (pay fixed, receive variable) to hedge cash flows not denominated in a functional currency. The payments in foreign currency to be made in the hedging period are the hedged items and are recognized in profit or loss in the same period. The terms of the hedging relationships will end in the years 2021 through 2033. In the case of rolling cash flow hedges for hedging currency risks, short-term currency forwards are entered into, which are then extended by means of follow-up transactions.

At each reporting date, the effectiveness of the fair value and cash flow hedges is reviewed prospectively based on the main contractual features and determined retrospectively in the form of a statistical regression analysis; for rolling foreign currency hedges the effectiveness is reviewed using the dollar offset test. All hedging relationships were sufficiently effective as of the reporting date.

Hedging of a net investment. The hedges of the net investment in T-Mobile US against fluctuations in the U.S. dollar spot rate de-designated in prior periods did not generate any effects in 2020. The amounts recognized in total other comprehensive income would be reclassified in the event of the disposal of T-Mobile US.

Conditions of derivative financial instruments in hedging relationships

millions of €

	2021					
	Nominal amount	Average hedge rate	Average swap rate received	Average swap rate paid	Average margin paid	Average margin received
Fair value hedges						
Interest rate risk						
EURIBOR	638		0.4528 %	6M EURIBOR	0.2819 %	
USD LIBOR	230		1.9840 %	3M USD LIBOR	0.7430 %	
GBP LIBOR						
Cross-currency risk						
USD/EUR						
GBP/EUR						
Other						
Cash flow hedges						
Currency risk						
Buy						
USD/EUR	290	1.1414				
GBP/EUR	70	1.3156				
Other	17					
Sell						
USD/EUR	201	1.0967				
Other	3	1.0578				
Interest rate risk						
EURIBOR	610		6M EURIBOR	-0.2873 %		0.2678 %
USD LIBOR						

millions of €

	2022–2025					
	Nominal amount	Average hedge rate	Average swap rate received	Average swap rate paid	Average margin paid	Average margin received
Fair value hedges						
Interest rate risk						
EURIBOR	6,575		0.7798 %	6M EURIBOR	0.3727 %	
USD LIBOR	835		2.5755 %	3M USD LIBOR	1.0465 %	
GBP LIBOR	334		1.2500 %	3M GBP LIBOR	0.7870 %	
Cross-currency risk						
USD/EUR						
GBP/EUR	339	0.8853	2.5000 %	3M EURIBOR	0.6485 %	
Other	79					
Cash flow hedges						
Currency risk						
Buy						
USD/EUR	207	1.1859				
GBP/EUR	770	0.9072	6.5000 %	6.5718 %		
Other	3					
Sell						
USD/EUR	408	1.2350				
Other	36	1.0578				
Interest rate risk						
EURIBOR	7,178		6M EURIBOR	-0.1543 %		0.3721 %
USD LIBOR	1,834		3M USD LIBOR	4.9861 %		2.3938 %

millions of €

	2026 and thereafter					
	Nominal amount	Average hedge rate	Average swap rate received	Average swap rate paid	Average margin paid	Average margin received
Fair value hedges						
Interest rate risk						
EURIBOR	8,250		1.4714 %	6M EURIBOR	0.8146 %	
USD LIBOR	4,373		4.1460 %	3M USD LIBOR	1.6014 %	
GBP LIBOR	445		2.5590 %	6M GBP LIBOR	0.6477 %	
Cross-currency risk						
USD/EUR	1,557	1.1221	8.7500 %	3M EURIBOR	5.8751 %	
GBP/EUR	457	0.8758	3.1250 %	3M EURIBOR	1.2716 %	
Other	760					
Cash flow hedges						
Currency risk						
Buy						
USD/EUR	1,758	1.3566	8.7849 %	7.7858 %		
GBP/EUR	441	0.9122	7.9388 %	7.5811 %		
Other						
Sell						
USD/EUR	123	1.2359				
Other						
Interest rate risk						
EURIBOR						
USD LIBOR	1,223		3M USD LIBOR	4.7500 %		2.0707 %

Nominal and carrying amounts of derivative financial instruments in hedging relationships

millions of €

	2020					2019					
	Nominal amount of the hedging instruments		Carrying amount of the hedging instruments			Nominal amount of the hedging instruments		Carrying amount of the hedging instruments			
	in foreign currencies	in euros	Financial assets	Financial liabilities	Change in value of the hedging instruments in the reporting period for determining ineffectiveness	in foreign currencies	in euros	Financial assets	Financial liabilities	Change in value of the hedging instruments in the reporting period for determining ineffectiveness	Disclosure of the hedging instruments in the statement of financial position
Fair value hedges											
Interest rate risk		21,680	1,902	0	1,058		27,204	1,029	(39)	783	Other financial assets/ financial liabilities
Of which: EUR		15,463					20,268				
Of which: USD	6,671	5,438				6,865	6,114				
Of which: GPB	700	779				700	822				
Cross-currency risk		3,191	123	(52)	173		2,912	124	(26)	257	Other financial assets/ financial liabilities
Of which: USD	1,747	1,557				1,747	1,557				
Of which: GPB	700	796				700	796				
Of which: other		839					560				
Cash flow hedges											
Currency risk		4,326	12	(73)	(183)		3,725	166	(18)	251	Other financial assets/ financial liabilities
Buy											
USD/EUR	2,880	2,255				2,580	2,008				
GBP/EUR	1,163	1,282				1,171	1,294				
Other		19					52				
Sell											
USD/EUR	895	732				416	371				
Other		38									
Interest rate risk		10,845	9	(261)	(1,307)		22,739	120	(1,235)	(747)	Other financial assets/ financial liabilities
USD LIBOR	3,750	3,057				16,350	14,561				
EURIBOR		7,788					8,178				

In this and the following tables on hedging relationships, losses are shown as negative amounts unless explicitly stated otherwise.

Disclosures on hedged items in hedging relationships

millions of €

		Carrying amount of the hedged items (including cumulative fair value hedge adjustments)	Cumulative adjustments to the carrying amount of the designated fair value hedges	Change in the fair value of the hedged items for determining ineffectiveness in the reporting period	Remaining balance of cumulative adjustments to the carrying amount of the de-designated fair value hedges	Balance of amounts recognized in other comprehensive income relating to hedged risk (existing hedging relationships)[a]	Balance of amounts recognized in other comprehensive income relating to hedged risk (terminated hedging relationships)[a]	Presentation of the hedged items in the statement of financial position
Fair value hedges								Financial liabilities
Interest rate risk	**2020**	23,417	1,741	(1,044)	258	n.a.	n.a.	
	2019	28,019	857	(774)	304	n.a.	n.a.	
Cross-currency risk	**2020**	3,219	188	(164)	0	n.a.	n.a.	
	2019	2,981	24	(299)	0	n.a.	n.a.	
Cash flow hedges								n.a.
Currency risk	**2020**	n.a.	n.a.	179	n.a.	132	8	
	2019	n.a.	n.a.	(244)	n.a.	83	8	
Interest rate risk	**2020**	n.a.	n.a.	1,267	n.a.	(198)	(2,008)	
	2019	n.a.	n.a.	727	n.a.	(1,140)	0	
Hedges of net investment								n.a.
Currency risk	**2020**	n.a.	n.a.	0	n.a.	794	n.a.	
	2019	n.a.	n.a.	0	n.a.	794	n.a.	

[a] Figures include non-controlling interests.

Gains/losses from hedge accounting

millions of €

		Hedge ineffectiveness of existing hedging relationships recognized in profit or loss	Changes in fair value recognized directly in other comprehensive income	Amounts reclassified to profit or loss from other comprehensive income due to occurrence of the hedged items (designated hedging relationships)[a]	Amounts reclassified to profit or loss from other comprehensive income due to occurrence of the hedged items (de-designated hedging relationships)[a]	Total change in other comprehensive income	Presentation of the reclassified effective amounts in profit or loss	Presentation of the ineffectiveness in profit or loss
Fair value hedges							n.a.	Other financial income (expense)
Interest rate risk	**2020**	14	n.a.	n.a.	n.a.	n.a.		
	2019	9	n.a.	n.a.	n.a.	n.a.		
Cross-currency risk	**2020**	9	n.a.	n.a.	n.a.	n.a.		
	2019	(42)	n.a.	n.a.	n.a.	n.a.		
Cash flow hedges								Other financial income (expense)
Currency risk	**2020**	(4)	(179)	229	0	50	Net revenue/goods and services purchased/other financial income (expense)	
	2019	7	244	(143)	0	101		
Interest rate risk	**2020**	(40)	(1,267)	38	163	(1,066)	Interest expense	
	2019	(20)	(727)	(21)	16	(732)		

[a] Negative amounts represent gains in the income statement.

The recorded ineffectiveness in the income statement mainly results from the different discount rates of the hedged items (fixed-income) and designated hedging instruments (fixed-income and variable-interest). Furthermore, cross-currency interest rate hedges are impacted by effects from cross currency basis spreads, which are included in the hedging instruments, but not in the hedged items. For some hedges, the characteristics of hedging instruments and hedged items differ, resulting in ineffectiveness. In the case of interest rate hedges on highly probable future borrowings, ineffectiveness could arise if time shifts occur. The relative amounts of the ineffectiveness are not expected to increase significantly in the future. Furthermore, there are no other potential sources of ineffectiveness.

Reconciliation of total other comprehensive income from hedging relationships[a]

millions of €

	Designated risk components (effective portion)					
	Cash flow hedges		Hedges of net investment			
	Currency risk	Interest rate risk	Currency risk	Total designated risk components	Hedging costs[b]	Total other comprehensive income
Balance at January 1, 2020	91	(1,141)	794	(256)	51	(205)
Changes recognized directly in equity	(179)	(1,267)	0	(1,446)	(29)	(1,475)
Reclassification to profit or loss due to occurrence of the hedged item	229	202	0	431	2	433
Balance at December 31, 2020	**141**	**(2,206)**	**794**	**(1,271)**	**24**	**(1,247)**

[a] Figures include non-controlling interests.

[b] The hedging costs relate entirely to cross-currency basis spreads.

Derivatives. The following table shows the fair values of the various derivatives. A distinction is made depending on whether these are part of an effective hedging relationship as set out in IFRS 9 (fair value hedge, cash flow hedge, net investment hedge) or not. Other derivatives can also be embedded, i.e., a component of a composite instrument that contains a non-derivative host contract.

millions of €

	Net carrying amounts Dec. 31, 2020	Net carrying amounts Dec. 31, 2019
Assets		
Interest rate swaps		
Without a hedging relationship	22	6
In connection with fair value hedges	1,902	1,029
In connection with cash flow hedges	9	120
Currency forwards/currency swaps		
Without a hedging relationship	15	49
In connection with cash flow hedges	8	5
Cross-currency swaps		
Without a hedging relationship	169	206
In connection with fair value hedges	123	124
In connection with cash flow hedges	3	161
Other derivatives in connection with cash flow hedges	0	0
Other derivatives without a hedging relationship	819	3
Embedded derivatives	966	630
Liabilities		
Interest rate swaps		
Without a hedging relationship	31	34
In connection with fair value hedges	0	39
In connection with cash flow hedges	261	1,235
Currency forwards/currency swaps		
Without a hedging relationship	41	59
In connection with cash flow hedges	28	4
In connection with net investment hedges	0	0
Cross-currency swaps		
Without a hedging relationship	264	78
In connection with fair value hedges	52	26
In connection with cash flow hedges	46	14
Other derivatives in connection with cash flow hedges	0	0
Other derivatives without a hedging relationship	13	7
Embedded derivatives	129	146

Transfer of financial assets

Factoring transactions with substantially all risks and rewards being transferred

Deutsche Telekom is party to several factoring agreements under which it sells current trade receivables on a revolving basis Under these agreements, Deutsche Telekom has the right to decide on a case-by-case basis whether and to what extent the revolving nominal volume will be used. Sales exceeding this amount must be agreed on a case-by-case basis. The risks relevant for the risk assessment with respect to the receivables sold are the credit risk and the late-payment risk, which are transferred to the buyer of the receivables in full in return for payment of a fixed purchase price discount. Losses relating to certain receivables are reimbursed up to a maximum amount under a credit insurance policy, which reduces the credit risk. The receivables sold until the reporting date were derecognized in full. At the derecognition date, the fixed purchase price discount is expensed. Deutsche Telekom continues to perform receivables credit management against payment for the receivables sold. For the disclosures on the receivables sold, please refer to the table below.

Factoring transactions involving the splitting of significant risks and rewards as well as the transfer of control

There is also a revolving factoring transaction in place under which a bank is required to purchase trade receivables from charges from sales of handsets payable over a period of up to two years. Deutsche Telekom has the right to decide on a case-by-case basis whether the revolving nominal volume will be used and to what extent. The risks relevant for the risk assessment with respect to the receivables sold are the credit risk and the late-payment risk. Deutsche Telekom bears credit risk-related losses from the various tranches up to a certain amount in each case; the other credit risk-related losses are borne by the bank. The late-payment risk is borne in full by Deutsche Telekom. Due to the allocation of the material risks between Deutsche Telekom and the bank, substantially all the risks and rewards of ownership of the receivables were neither transferred nor retained. Control of the receivables sold was transferred to the bank because it has the practical ability to resell the receivables. The bank has the right to sell all receivables overdue back to Deutsche Telekom. The purchase price corresponds to the nominal amount and is payable in the month following the buy-back. This does not affect the allocation of the credit risk-related losses, as the losses would be passed back to the bank in line with the agreed risk allocation. All receivables sold have been derecognized. At the derecognition date, the fair value of the expected losses is expensed as financial liabilities. Please refer to the table below for the disclosures on the continuing involvement resulting from the receivables sold.

Factoring transactions involving the splitting of significant risks and rewards with control remaining at Deutsche Telekom

In addition, there are several factoring agreements in place under which Deutsche Telekom sells – on a revolving basis – trade receivables from consumers and business customers relating to both charges already due and charges from sales of handsets payable over a period of up to two years.

In two transactions, subsidiaries of Deutsche Telekom sell receivables to structured entities that are also subsidiaries of Deutsche Telekom and were established for the sole purpose of these factoring agreements. The required funding is provided to these structured entities in the context of Deutsche Telekom's general Group financing. These structured entities have no assets and liabilities other than those resulting from the purchase and sale of the receivables under factoring agreements. They resell the receivables to a second structured entity in each case. Deutsche Telekom does not consolidate the two second structured entities because it has no control over these entities' relevant activities. In one of the transactions, the second structured entity resells the ownership interests in the receivables to two banks and a third structured entity on a pro rata basis. Deutsche Telekom does not consolidate this third structured entity either because it likewise does not control this entity's relevant activities. The structured entities not consolidated by Deutsche Telekom are financed by the external buyers of the receivables. In the other transaction, the second structured entity transfers the legal role of ownership of the receivables to a bank that performs this role on behalf of the investors who have beneficial ownership of the receivables (administrative agent). These investors are four banks and three other structured entities. Deutsche Telekom does not consolidate these three other structured entities either because it likewise has no control over these entities' relevant activities. The three other structured entities are financed through the issue of commercial paper to third parties outside the Group or, alternatively, through a credit facility provided by a bank.

In a third transaction, receivables are sold directly to a structured entity. This structured entity holds the receivables and allocates the risks and rewards resulting from these to Deutsche Telekom and a bank on the basis of contractual arrangements. It is financed through the issue of commercial paper to third parties outside the Group or, alternatively, through a credit facility provided by a bank. Deutsche Telekom does not consolidate the structured entity because it does not control the relevant activities.

The receivables being sold are selected from the relevant portfolios, either in an automated process in compliance with the eligibility criteria set out in the receivables purchase agreement or based on the decision of the relevant structured entity taking an obligatory minimum volume into account. Receivables are sold on a daily basis and billed on a monthly basis. The purchase price up to a specific amount will be paid out immediately upon sale; remaining portions of the purchase price will only be paid to the extent that the volume of receivables sold in the relevant portfolio decreases further accordingly or the characteristics of the receivables change. In all transactions, Deutsche Telekom is obligated to buy back aged receivables and receivables for which a write-off is imminent at nominal value. Such buy-backs would not affect the allocation of the credit risk-related losses in any way, as the latter would be passed back to the buyers in line with the agreed risk allocation. The cash flows resulting from the buy-backs normally occur in the month following the buy-back. None of the structured entities has business activities other than the purchase or sale of trade receivables or other investments. In none of the transactions is Deutsche Telekom exposed to risks other than the credit risk and late-payment risk resulting from the sold receivables agreed in the respective agreement.

In other transactions, receivables are sold directly to buyers outside the Group without the involvement of structured entities. If more receivables are purchased in individual portfolios, the purchase price payment is deferred until the maximum program volume decreases further accordingly. In all those transactions, Deutsche Telekom has the right to decide whether receivables are sold and in which volume. In individual portfolios, receivables for which a write-off is imminent are sold back to Deutsche Telekom. Here the purchase price corresponds to the actual proceeds from collection or disposal and is payable after Deutsche Telekom receives these proceeds from collection or disposal. These buy-backs would affect neither the allocation of the credit risk-related losses nor Deutsche Telekom's liquidity situation. In one portfolio, the existing credit insurance reimburses losses relating to certain receivables to a specific maximum amount and thus reduces the exposure to loss.

The risks relevant for the risk assessment with respect to the sold receivables are based on the credit risk and the late-payment risk. Deutsche Telekom bears certain portions of the credit risk in the individual transactions. The other credit risk-related losses are borne by the respective buyers. The late-payment risk in all transactions continues to be borne in full by Deutsche Telekom. Substantially all the risks and rewards of ownership of the receivables were neither transferred nor retained (allocation of the material risks and rewards between Deutsche Telekom and the buyers). Deutsche Telekom continues to perform servicing for the receivables sold. Under the factoring agreements in which structured entities are engaged, buyers have the unilateral right to transfer the servicing to third parties for no specific reason. Although Deutsche Telekom is not authorized to use the receivables sold other than in its capacity as servicer, it retains control over the receivables sold because the buyers and the structured entities do not have the practical ability to resell the purchased receivables. At the time the receivables are sold, the fair value of the expected losses is expensed. Expected future payments are presented as a component of the associated liability. In transactions with structured entities, certain portions of the purchase price are initially held back and, depending on the amount of the actual defaults, are only paid to Deutsche Telekom at a later date. To the extent that such portions of the purchase price are expected to be received in the future, they are recognized at fair value. Deutsche Telekom continues to recognize the trade receivables sold to the extent of its continuing involvement, i.e., in the maximum amount with which it is still liable for the credit risk and late-payment risk inherent in the receivables sold, and recognizes a corresponding associated liability presented in liabilities to banks. The receivables and the associated liability are then derecognized in the extent to which Deutsche Telekom's continuing involvement is reduced (particularly when payment is made by the customer). The carrying amount of the receivables is subsequently reduced by the extent to which the actual losses to be borne by Deutsche Telekom resulting from the credit risk and the late-payment risk exceed the losses initially expected. This amount is recognized as an expense. Please refer to the table below for the disclosures on the continuing involvement resulting from the receivables sold. Expenses of EUR 348 million on a cumulative basis since commencement of the agreement were recognized for a factoring agreement terminated in the financial year.

Transfer of financial assets

millions of €

	2020				
	Transfer of substantially all risks and rewards	**Allocation of substantially all risks and rewards**			
		Transfer of control	Retention of control		
			Partial or full transfer of the credit risk and full retention of the late-payment risk		
	Full transfer of the credit and late-payment risk	Partial transfer of the credit risk and retention of most of the late-payment risk	With the involvement of structured entities	Without the involvement of structured entities	Total
End of contract terms	2021–2022	2021	2021–2024	2022	
Contractual maximum volume	180	90	4,637	324	**5,231**
Purchase prices to be paid immediately	180	80	1,984	324	**2,568**
Volume of receivables sold as of the reporting date	94	61	2,677	297	**3,129**
Scope of volume of receivables sold in the reporting year	36–116	22–57	1,703–2,147	185–306	
Provision for receivables management	0	0	0	0	**0**
Continuing involvement					
Maximum credit risk (before credit insurance)	0	14	819	0	**833**
Credit insurance	27	0	0	23	**50**
Maximum late-payment risk	0	0	6	1	**7**
Carrying amount of the continuing involvement (asset side)	0	0	816	1	**817**
Carrying amount of the associated liability	0	0	825	1	**826**
Fair value of the associated liability	0	0	9	0	**9**
Buy-back agreements					
Nominal value of receivables that can be bought back at the nominal amount	0	61	2,562	0	**2,623**
Nominal value of receivables that can be bought back at the collected amount	0	0	116	0	**116**
Purchase price discounts recognized in profit or loss, program fees, and pro rata loss allocations					
Current reporting year	0	1	114	1	**116**
Cumulative since commencement of the agreement	4	6	1,178	3	**1,191**

millions of €

	2019				
	Transfer of substantially all risks and rewards	**Allocation of substantially all risks and rewards**			
		Transfer of control	Retention of control		
			Partial transfer of the credit risk and full retention of the late-payment risk		
	Full transfer of the credit and late-payment risk	Partial transfer of the credit risk and retention of most of the late-payment risk	With the involvement of structured entities	Without the involvement of structured entities	**Total**
End of contract terms	2021–2022	2021	2020–2023	2020–2022	
Contractual maximum volume	184	90	4,959	1,040	**6,273**
Purchase prices to be paid immediately	184	80	2,154	1,040	**3,458**
Volume of receivables sold as of the reporting date	91	42	3,007	1,101	**4,241**
Scope of volume of receivables sold in the reporting year	71–127	24–30	1,889–2,337	992–1,133	
Provision for receivables management	0	0	0	4	**4**
Continuing involvement					
Maximum credit risk (before credit insurance)		14	600	80	**694**
Credit insurance	27			23	**50**
Maximum late-payment risk		0	82	4	**86**
Carrying amount of the continuing involvement (asset side)		0	682	84	**766**
Carrying amount of the associated liability		0	733	118	**851**
Fair value of the associated liability		0	51	34	**85**
Buy-back agreements					
Nominal value of receivables that can be bought back at the nominal amount		42	2,887		**2,929**
Nominal value of receivables that can be bought back at the collected amount			120	840	**960**
Purchase price discounts recognized in profit or loss, program fees, and pro rata loss allocations					
Current reporting year	1	1	240	62	**304**
Cumulative since commencement of the agreement	4	5	1,064	350	**1,423**

42 Capital management

The overriding aim of Deutsche Telekom's capital management is to strike a balance between the contrasting expectations of the following stakeholders:

- **Shareholders** expect an appropriate, reliable return on their capital employed.
- **Providers of debt capital** expect an appropriate return and that Deutsche Telekom is able to repay its debts.
- **Employees** expect jobs that are secure, prospects for the future, and that any necessary staff restructuring will be done in a responsible manner.
- **"Entrepreneurs within the enterprise"** expect sufficient investment funding to be able to shape Deutsche Telekom's future business and develop products, innovations, and services for the customer.
- **Society** expects Deutsche Telekom to do everything within its power to protect the environment, encourage fair and democratic co-existence, and shape the digital transformation in a responsible manner.

An important key performance indicator for the capital market communication with investors, analysts, and rating agencies is relative debt, i.e., net debt to adjusted EBITDA. This ratio stood at 2.78x at December 31, 2020 (December 31, 2019: 2.65x). Deutsche Telekom briefly exceeded the target corridor for relative debt of 2.25x to 2.75x on account of the business combination of T-Mobile US and Sprint. As announced in 2018, rating agency Standard & Poor's downgraded Deutsche Telekom AG's rating from BBB+ to BBB with a stable outlook on completion of the business combination of T-Mobile US and Sprint. We are therefore still a solid investment-grade company with access to the international capital markets. Adjusted EBITDA and net debt are non-GAAP figures not governed by International Financial Reporting Standards, and their definition and calculation may vary from one company to another. A further essential key performance indicator is the equity ratio, i.e., the ratio of shareholders' equity to total assets as shown in the consolidated statement of financial position. The equity ratio was 27.4 % as of December 31, 2020 (December 31, 2019: 27.1 %). The target corridor remains unchanged between 25 % and 35 %. In addition, Deutsche Telekom maintains a liquidity reserve covering all maturities of the next 24 months.

For further information, please refer to the sections "Management of the Group" and "Development of business in the Group," in the combined management report.

millions of €

	Dec. 31, 2020	Dec. 31, 2019	Change	Change %
Bonds and other securitized liabilities	87,702	51,644	36,058	69.8
Liabilities to banks	5,257	6,516	(1,259)	(19.3)
Other financial liabilities	14,149	8,189	5,960	72.8
Lease liabilities	32,715	19,835	12,880	64.9
Financial liabilities and lease liabilities	**139,823**	**86,184**	**53,639**	**62.2**
Accrued interest	(1,035)	(748)	(287)	(38.4)
Other	(703)	(739)	36	4.9
Gross debt	**138,085**	**84,697**	**53,388**	**63.0**
Cash and cash equivalents	12,939	5,393	7,546	n.a.
Derivative financial assets	4,038	2,333	1,705	73.1
Other financial assets	881	940	(59)	(6.3)
Net debt	**120,227**	**76,031**	**44,196**	**58.1**

43 Related-party disclosures

Federal Republic of Germany and other related parties. The Federal Republic of Germany is both a direct and an indirect shareholder (via KfW Bankengruppe) and holds 31.9 % (December 31, 2019: 31.9 %) of the share capital of Deutsche Telekom AG. In previous years, this resulted in the Federal Republic of Germany representing a solid majority at the shareholders' meetings of Deutsche Telekom AG due to its level of attendance, giving it control over Deutsche Telekom. Thanks to higher levels of attendance, the Federal Republic has not had a majority of the voting rights at the shareholders' meetings of Deutsche Telekom AG since 2016. As such, it is no longer deemed to have control over Deutsche Telekom, but rather only a significant influence. Therefore, the Federal Republic and the companies controlled and jointly controlled by the Federal Republic, but not the companies over which the Federal Republic can exercise a significant influence are classified as related parties of Deutsche Telekom. In the course of business, Deutsche Telekom deals directly with these companies, and with authorities and other government agencies as an independent party. Deutsche Telekom participates in the spectrum auctions of the Bundesnetzagentur. The acquisition of mobile spectrum through licenses may result in build-out requirements.

The Federal Posts and Telecommunications Agency (Bundesanstalt für Post und Telekommunikation; Federal Agency) has been assigned certain tasks by law that affect cross-company issues at Deutsche Telekom AG, Deutsche Post AG, and Deutsche Postbank AG. The Federal Agency's responsibilities include the continuation of the Civil Service Health Insurance Fund (Postbeamtenkrankenkasse), the Recreation Service (Erholungswerk), the Deutsche Bundespost Institution for Supplementary Retirement Pensions for Salaried Employees and Wage Earners (Versorgungsanstalt der Deutschen Bundespost), and the Welfare Service (Betreuungswerk) for Deutsche Telekom AG, Deutsche Post AG, and Deutsche Bank AG, Frankfurt am Main, Germany (as legal successor of Deutsche Postbank AG). The coordination and administrative tasks are performed on the basis of agency agreements. Up to and including the 2012 reporting year, Deutsche Telekom AG maintained a joint pension fund, Bundes-Pensions-Service für Post und Telekommunikation e.V., Bonn (Federal Pension Service for Post and Telecommunications – BPS-PT), together with Deutsche Post AG and Deutsche Postbank AG for civil-servant pension plans. The German Act on the Reorganization of the Civil Service Pension Fund (Gesetz zur Neuordnung der Postbeamtenversorgungskasse – PVKNeuG) transferred the functions of BPS-PT relating to civil-servant pensions (organized within the Civil Service Pension Fund) to the existing Federal Agency effective January 1, 2013. The civil-servant pension functions are therefore performed by the Civil Service Pension Fund as an integral part of the Federal Agency. This joint Civil Service Pension Fund works for the funds of all three companies and also handles the financial administration of the pension plan for the Federal Republic on a trust basis. For the 2020 financial year, Deutsche Telekom made payments in the amount of EUR 121 million (2019: EUR 146 million; 2018: EUR 123 million). Furthermore, payments are made to the Civil Service Pension Fund in accordance with the provisions of the Act on the Reorganization of the Civil Service Pension Fund.

For further information, please refer to Note 15 "Provisions for pensions and other employee benefits."

The Federal Republic and the companies controlled and jointly controlled by the Federal Republic are customers or suppliers of Deutsche Telekom and as such have mutual contractual relationships with Deutsche Telekom.

There are no material revenue, receivables, or liabilities from or to **joint ventures** and **associates**.

Related individuals. In the reporting period, expenses for short-term benefits payable to members of the Board of Management and the Supervisory Board amounted to EUR 20.5 million (2019: EUR 19.9 million) and expenses for other long-term benefits amounted to EUR 7.3 million (2019: EUR 4.4 million). Service cost of EUR 2.3 million (2019: EUR 2.4 million) was recorded for Board of Management benefits. In addition, expenses for share-based payment for Board of Management members were incurred in the amount of EUR 2.0 million (2019: EUR 2.0 million). No termination benefits were expensed in 2020 or 2019.

As of December 31, 2020, Deutsche Telekom recognized provisions for Board of Management and Supervisory Board compensation from short-term benefits of EUR 11.6 million (2019: EUR 11.4 million) and from other long-term benefits of EUR 14.3 million (2019: EUR 10.3 million). Furthermore, the present value of the defined benefit obligation (DBO) from the Board of Management pension amounts to EUR 28.0 million (2019: EUR 27.1 million).

The compensation of the Board of Management and the Supervisory Board totaled EUR 32.2 million in the reporting year (2019: EUR 29.0 million).

For further information, please refer to the "Compensation report" in the combined management report and Note 44 "Compensation of the Board of Management and the Supervisory Board."

Employees elected to the Supervisory Board of Deutsche Telekom AG continue to be entitled to a regular salary as part of their employment contract. The amount of the salary is the adequate compensation for their job or activity within the Company. Besides this, no major transactions took place with related individuals.

The members of the Board of Management and Supervisory Board of Deutsche Telekom AG are members of supervisory boards or management boards of other companies or are shareholders of other companies with which Deutsche Telekom AG maintains relations in the ordinary course of business. All related party transactions are performed on an arm's length basis.

44 Compensation of the Board of Management and the Supervisory Board

Compensation of the Board of Management

The presentation of the system used for compensation of the Board of Management and the disclosures required in accordance with § 314 (1) No. 6a sentences 5–8 HGB are a component of the combined management report.

Board of Management compensation for the 2020 financial year

Total compensation of the members of the Board of Management for the 2020 financial year amounted to EUR 24.1 million (2019: EUR 23.3 million). This includes a total of 189,315 entitlements to matching shares with a fair value of EUR 2.5 million on the date granted (2019: EUR 2.7 million).

Former members of the Board of Management

A total of EUR 8.5 million (2019: EUR 8.8 million) was included for payments to and entitlements for former members of the Board of Management as well as any surviving dependents. Provisions (measured in accordance with IAS 19) totaling EUR 223.9 million (2019: EUR 213.4 million) were recognized for current pensions and vested rights to pensions for this group of persons and their surviving dependents.

Other

The Company has not granted any advances or loans to current or former Board of Management members, nor were any other financial obligations to the benefit of this group of people entered into.

Compensation of the Supervisory Board

The main features of the compensation system and the disclosure of the compensation of the individual members of the Supervisory Board are a component of the combined management report.

Total compensation of the members of the Supervisory Board for 2020 amounted to EUR 3,043,250 (plus VAT) and is comprised of fixed annual remuneration plus meeting attendance fees.

The Company has not granted any advances or loans to current or former Supervisory Board members, nor were any other financial obligations to the benefit of this group of people entered into.

45 Declaration of conformity with the German Corporate Governance Code in accordance with § 161 AktG

In accordance with § 161 AktG, the Board of Management and the Supervisory Board of Deutsche Telekom AG have submitted the mandatory declaration of conformity and made it available to shareholders on Deutsche Telekom AG's website. The full text of the Declaration of Conformity is available on the Deutsche Telekom website.

Declaration of Conformity

46 Events after the reporting period

Issue of USD bonds by T-Mobile US. On January 14, 2021, T-Mobile US issued three senior notes with a total volume of USD 3.0 billion (EUR 2.4 billion) with terms ending between 2026 and 2031 and bearing interest of between 2.250 % and 2.875 %. T-Mobile US intends to use the proceeds from the issuance of the senior notes for general business purposes, including the acquisition of additional spectrum and the ongoing refinancing of existing debt.

Agreed sale of T-Mobile Infra B.V. Deutsche Telekom and Cellnex Telecom S.A. signed a deal on January 21, 2021 to combine their respective Dutch mobile infrastructure subsidiaries. Under the deal, the Dutch cell tower company T-Mobile Infra B.V. will be sold to Digital Infrastructure Vehicle (DIV), a newly established investment company, which will be managed independently under the envisaged structure. The assets and liabilities of T-Mobile Infra B.V. are reported in Deutsche Telekom's consolidated financial statements as of December 31, 2020 under non-current assets and disposal groups held for sale and liabilities directly associated with non-current assets and disposal groups held for sale.

For further information on the transaction, please refer to the section "Changes in the composition of the Group and other transactions."

Acquisition of wireless assets in the United States. On February 1, 2021, the valuation process was completed of the wireless telecommunication assets of Shentel for which Sprint previously exercised an option to purchase.

For further information on the transaction, please refer to the section "Changes in the composition of the Group and other transactions."

47 Auditor's fees and services in accordance with § 314 HGB

PricewaterhouseCoopers Gesellschaft mit beschränkter Haftung, Wirtschaftsprüfungsgesellschaft (PwC) Frankfurt/Main, member of the German Chamber of Public Accountants in Berlin, has audited the consolidated financial statements of Deutsche Telekom AG since the Company's listing in 1996. Following a change within PwC in 2015, Thomas Tandetzki has been the responsible auditor in charge at PwC.

The following table provides a breakdown of the auditor's professional fees recognized as expenses in the 2020 financial year:

millions of €	2020
Auditing services	15
Other assurance services	1
Tax advisory services	0
Other non-audit services	1
	17

Professional fees for auditing services include in particular fees for the statutory auditing of annual and consolidated financial statements and the subsidiaries included in the consolidated financial statements, fees for the review of the interim financial statements, and fees for other auditing services.

The fees recognized under other assurance services relate primarily to the auditing of information systems and processes, as well as the issuing of comfort letters.

Other non-audit services mainly consist of professional services in connection with strategic projects.

Responsibility statement

To the best of our knowledge, and in accordance with the applicable reporting principles, the consolidated financial statements give a true and fair view of the assets, liabilities, financial position, and profit or loss of the Group, and the Group management report, which is combined with the management report of Deutsche Telekom AG, includes a fair review of the development and performance of the business and the position of the Group, together with a description of the principal opportunities and risks associated with the expected development of the Group.

Bonn, February 16, 2021

Deutsche Telekom AG
The Board of Management

Timotheus Höttges

Adel Al-Saleh	Birgit Bohle	Srini Gopalan	Dr. Christian P. Illek
Thorsten Langheim	Dominique Leroy	Claudia Nemat	

The following copy of the auditor's report also includes a "Report on the audit of the electronic renderings of the financial statements and the management report prepared for disclosure purposes in accordance with § 317 Abs. 3b HGB" ("Separate report on ESEF conformity"). The subject matter (ESEF documents to be audited) to which the separate report on ESEF conformity relates is not attached. The audited ESEF documents can be inspected in or retrieved from the Federal Gazette.

INDEPENDENT AUDITOR'S REPORT

To Deutsche Telekom Aktiengesellschaft, Bonn

REPORT ON THE AUDIT OF THE CONSOLIDATED FINANCIAL STATEMENTS AND OF THE GROUP MANAGEMENT REPORT

Audit Opinions

We have audited the consolidated financial statements of Deutsche Telekom Aktiengesellschaft, Bonn, and its subsidiaries (the Group), which comprise the consolidated statement as at December 31, 2020, the consolidated income statement, the consolidated statement of comprehensive income, the consolidated statement of changes in equity and the consolidated cash flow statement for the financial year from January 1 to December 31, 2020, and notes to the consolidated financial statements, including a summary of significant accounting policies. In addition, we have audited the group management report of Deutsche Telekom Aktiengesellschaft, which is combined with the Company's management report, for the financial year from January 1 to December 31, 2020. In accordance with the German legal requirements, we have not audited the content of those parts of the group management report listed in the "Other Information" section of our auditor's report.

In our opinion, on the basis of the knowledge obtained in the audit,

- the accompanying consolidated financial statements comply, in all material respects, with the IFRSs as adopted by the EU, and the additional requirements of German commercial law pursuant to § [Article] 315e Abs. [paragraph] 1 HGB [Handelsgesetzbuch: German Commercial Code] and, in compliance with these requirements, give a true and fair view of the assets, liabilities, and financial position of the Group as at December 31, 2020, and of its financial performance for the financial year from January 1 to December 31, 2020, and
- the accompanying group management report as a whole provides an appropriate view of the Group's position. In all material respects, this group management report is consistent with the consolidated financial statements, complies with German legal requirements and appropriately presents the opportunities and risks of future development. Our audit opinion on the group management report does not cover the content of those parts of the group management report listed in the "Other Information" section of our auditor's report.

Pursuant to § [Article] 322 Abs. [paragraph] 3 Satz [sentence] 1 HGB [Handelsgesetzbuch: German Commercial Code], we declare that our audit has not led to any reservations relating to the legal compliance of the consolidated financial statements and of the group management report.

Basis for the Audit Opinions

We conducted our audit of the consolidated financial statements and of the group management report in accordance with § 317 HGB and the EU Audit Regulation (No. 537/2014, referred to subsequently as "EU Audit Regulation") in compliance with German Generally Accepted Standards for Financial Statement Audits promulgated by the Institut der Wirtschaftsprüfer [Institute of Public Auditors in Germany] (IDW). We performed the audit of the consolidated financial statements in supplementary compliance with the International Standards on Auditing (ISAs). Our responsibilities under those requirements, principles and standards are further described in the "Auditor's Responsibilities for the Audit of the Consolidated Financial Statements and of the Group Management Report" section of our auditor's report. We are independent of the group entities in accordance with the requirements of European law and German commercial and professional law, and we have fulfilled our other German professional responsibilities in accordance with these requirements. In addition, in accordance with Article 10 (2) point (f) of the EU Audit Regulation, we declare that we have not provided non-audit services prohibited under Article 5 (1) of the EU Audit Regulation. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions on the consolidated financial statements and on the group management report.

Key Audit Matters in the Audit of the Consolidated Financial Statements

Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the consolidated financial statements for the financial year from January 1 to December 31, 2020. These matters were addressed in the context of our audit of the consolidated financial statements as a whole, and in forming our audit opinion thereon; we do not provide a separate audit opinion on these matters.

In our view, the matters of most significance in our audit were as follows:

1 | Recoverability of goodwill and other non-current assets

2 | Appropriateness of revenue recognition

3 | Business combination of T-Mobile US, Inc. and Sprint Corp.

4 | Reversal of impairment losses recognized on intangible assets of the cash-generating unit "USA"

Our presentation of these key audit matters has been structured in each case as follows:

1 | Matter and issue

2 | Audit approach and findings

3 | Reference to further information

Hereinafter we present the key audit matters:

1 | Recoverability of goodwill and other non-current assets
1 | Non-current assets totaling EUR 227.6 billion are reported in the consolidated financial statements of Deutsche Telekom Aktiengesellschaft (the "Company"). Goodwill amounting to EUR 19.8 billion (7.5% of consolidated total assets) is reported under the line item "Intangible assets" in the consolidated statement of financial position.

The Company tests goodwill for impairment (impairment test) at least once per financial year and when there are indications that goodwill may be impaired. The carrying amount of the relevant cash-generating unit or group of cash-generating units (hereinafter "unit" or "units"), in each case including the allocated goodwill, is compared with the corresponding recoverable amount in the context of the impairment test. These measurements are generally based on the present value of future cash flows of the unit to which the respective goodwill is allocated. The recoverability of the unit "USA" (operating segment United States) is determined on the basis of the listed share price of T-Mobile US, Inc. ("T-Mobile US"). The other measurements are based on budget projections for the individual units, which in turn are based on the financial budgets approved by the executive directors. The discount rate used for future cash flows is the weighted average cost of capital for the respective unit. As of December 31, 2020, the impairment test carried out on the unit "Montenegro" (operating segment Europe) resulted in an impairment loss of EUR 26 million recognized on the goodwill allocated to that unit.

With respect to other non-current assets and units to which no goodwill is allocated, a regular review is carried out to determine whether there are indications that an impairment test is required.

In the course of reorganizing the telecommunications business for business customers, the goodwill allocated to the unit "Systems Solutions" (operating segment Systems Solutions) up to and including June 30, 2020 was fully allocated (based on the relative carrying amounts) to the telecommunications business for business customers transferred to the unit "Germany" (operating segment Germany), meaning that there was no longer any goodwill allocated to the unit "Systems Solutions" as at July 1, 2020. This reorganization and the business outlook for the remaining unit "Systems Solutions", which due among other things to the impact of the COVID-19 pandemic was worse than expected, triggered an impairment test being carried out on this unit in the third quarter of 2020. The budget projections prepared by the executive directors of this unit and the discount rate applied for it were used to calculate the recoverable amount of the unit on the basis of fair value less costs to of disposal.

An impairment test was carried out on the units "Romania – Fixed-network" and "Romania – Mobile communications" (both operating segment Europe) due to the agreed sale of Telekom Romania Communications S.A. ("TKR"), which operates the Romanian fixed network business. The recoverable amounts for the units "Romania – Fixed-network" and "Romania – Mobile communications" were also calculated on the basis of fair value less costs of disposal. For the unit "Romania – Fixed-network", this was determined based on the current purchase price for TKR. For the unit "Romania – Mobile communications", the recoverable amount was calculated based on the budget projections prepared by the executive directors of this unit and the discount rate applied for it.

The impairment losses for the units "Systems Solutions" and "Romania – Mobile communications" calculated by comparing the recoverable amounts of the units to their carrying amounts were allocated to the tested assets of the units pro rata based on the carrying amounts of those assets, with their respective fair values serving as a floor. This resulted in the need to recognize EUR 299 million in impairment of intangible assets and EUR 127 million in impairment of property, plant and equipment in the unit "Systems Solutions". A further EUR 44 million was attributable to the intangible assets recognized in the operating segment Group Headquarters & Group Services, which for the purposes of impairment testing were allocated to the unit "Systems Solutions". In the unit "Romania – Mobile communications", the impairment losses amounted to EUR 126 million on intangible assets and EUR 34 million on property, plant and equipment. For the unit "Romania – Fixed-network", the purchase price for TKR resulting from the bid currently received led to a EUR 50 million reversal of impairment losses previously recognized on property, plant and equipment.

The result of the impairment tests depends in particular on the executive directors' assumptions of future cash inflows and the discount rate used. The measurements are therefore subject to uncertainty. Against this background and due to the complex nature of the valuation, this matter was of particular significance in the context of our audit.

2 | We assessed whether the future cash inflows underlying the measurements and the discount rates used on the whole provide a proper basis for the impairment tests of the individual units. As part of our assessment, we relied, among other things, on a comparison with general and sector-specific market expectations as well as the executive directors' detailed explanations regarding key value drivers and their recognition in the budget projections. In this context, we also assessed whether the expenses for Group functions were properly included in the impairment tests of the respective units. With the knowledge that even relatively small changes in the discount rate can have significant effects on values, we also focused our testing on the parameters used to determine the discount rate applied and evaluated the measurement model. When testing goodwill for impairment, we also conducted our own sensitivity analyses for the units with a low carrying amount to present value ratio in order to estimate any potential impairment risk related to any potential changes in key assumptions of the measurement. In our view, the measurement inputs and assumptions used by the executive directors were properly derived for the purposes of conducting impairment tests.

3 | The Company's disclosures relating to impairment tests of goodwill and other non-current assets are contained in the notes on the accounting policies found in the "Accounting policies" section of the "Summary of accounting policies" chapter and in sections "6 – Intangible assets" and "7 – Property, plant and equipment" of the notes to the consolidated financial statements.

2 | Appropriateness of revenue recognition
1 | In the consolidated financial statements of Deutsche Telekom Aktiengesellschaft, revenue of EUR 101.0 billion is recognized in the consolidated income statement. This significant item in terms of its amount is subject to particular risk due to the complexity of the processes and controls necessary for accurate recognition and deferral, the impact of ever-changing business, price and tariff models (including tariff structures, customer discounts, incentives), and the existence of multiple-element arrangements.

In addition, the accounting standard applicable to revenue recognition, International Financial Reporting Standard 15 – Revenue from contracts with customers (IFRS 15), requires for certain areas estimates and judgments – such as determining the transaction price and allocating it to the performance obligations identified in multiple-element arrangements based on the relative stand-alone selling prices – that had to be assessed for appropriateness in the context of our audit.

Against this background, the accounting treatment of revenue was of particular significance in the context of our audit.

2 | In the knowledge that the complexity and the need to make estimates and assumptions give rise to an increased risk of accounting misstatements, as part of our audit we initially assessed the processes and controls put in place by the Group, including the IT systems used for the purposes of revenue recognition. In particular, we assessed the IT system environment for invoicing and measurement, other relevant systems supporting the accounting treatment of revenue, and the invoicing and measurement systems up to entries in the general ledger.

Furthermore, we inspected contracts with customers, assessed the determination of the transaction price and its allocation to the performance obligations identified in multiple-element arrangements based on the relative stand-alone selling prices, and evaluated whether these obligations were satisfied over time or at a point in time. In this context, we also assessed the appropriateness of the procedure used to allocate revenue to the correct period, and the estimates and judgments made by the executive directors with respect to revenue recognition and deferral. Furthermore, we assessed the accounting consequences of new business and price models and, on a sample basis, examined customer invoices and the related contracts, as well as payments received. We applied consistent audit procedures for the audit of the operating subsidiaries to ensure that we responded appropriately throughout the Group to the audit risk inherent in the audit field.

We were able to satisfy ourselves that the systems, processes and controls in place are appropriate and that the estimates and assumptions made by the executive directors are sufficiently documented and substantiated to ensure that revenue is properly accounted for.

3 | The Company's disclosures relating to revenue in the consolidated financial statements of Deutsche Telekom Aktiengesellschaft are contained in the notes on the accounting policies found in the "Accounting policies" and "Judgments and estimates" sections of the "Summary of accounting policies" chapter and in section "20 – Net revenue" in the "Notes to the consolidated income statement" chapter of the notes to the consolidated financial statements.

3 | Business combination of T-Mobile US, Inc. and Sprint Corp.
1 | As of April 1, 2020, T-Mobile US (a fully consolidated subsidiary included in the consolidated financial statements of Deutsche Telekom Aktiengesellschaft) acquired all of the shares of the listed company Sprint Corp. ("Sprint") by means of a stock swap with no cash component and thus obtained control over Sprint. As of the acquisition date, the former majority shareholder of Sprint, SoftBank K.K., obtained new T-Mobile US shares at an effective ratio of one for every 11.31 Sprint shares, while the other shareholders each received one T-Mobile US share for every 9.75 Sprint shares.

The business combination with Sprint was accounted for in accordance with the acquisition method under IFRS 3 – Business combinations. During the preliminary purchase price allocation, the identifiable assets acquired and liabilities and contingent liabilities of Sprint assumed were recognized at their fair values. Taking into account the net assets acquired of EUR 21.9 billion that are to be allocated to the company and the EUR 30.6 billion in total consideration transferred, the preliminary acquired goodwill amounted to EUR 8.7 billion. Due to the complexity of the measurement and the material effects on the assets, liabilities and financial position and on the financial performance of Deutsche Telekom Aktiengesellschaft, the business combination was of particular significance in the context of our audit.

2 | As part of our audit, we assessed the accounting treatment of the business combination of T-Mobile US and Sprint. We began by inspecting the contractual agreements. As part of this process, we evaluated the consideration transferred for the business combination and reconciled it with the underlying agreements and the calculations provided to us. On that basis, we reviewed the balance sheet underlying the business combination based on the fair values as of the acquisition date. This involved assessing the appropriateness of, among other things, the models on which the valuations were based as well as the valuation parameters and assumptions used. Given the complexity common for a transaction of this size in calculating fair values in the context of the preliminary purchase price allocation, our internal valuation specialists assisted in the process. We also evaluated the disclosures in the notes to the financial statements that are required under IFRS 3. Ultimately, we were able to satisfy ourselves on the basis of our audit procedures that this acquisition was correctly presented in the financial statements and that the estimates and assumptions made by the executive directors are comprehensible and adequately substantiated.

3 | The disclosures relating to the business combination in the consolidated financial statements of Deutsche Telekom Aktiengesellschaft are contained in the "Changes in the composition of the Group and other transactions" sections of the "Summary of accounting policies" chapter in the notes to the consolidated financial statements.

4 | Reversal of impairment losses recognized on intangible assets of the "USA" cash-generating unit
1 | In the consolidated financial statements of Deutsche Telekom Aktiengesellschaft, mobile communications licenses granted by the Federal Communications Commission in the USA ("FCC licenses") amounting to EUR 74.5 billion (28.1% of consolidated total assets) are reported under the line item "Intangible assets" in the consolidated statement of financial position. As the result of an ad hoc impairment test conducted on the unit "USA", impairment losses were recognized on certain FCC licenses as of September 30, 2012. Since then, it has been necessary to carry out regular impairment tests for these FCC licenses to establish whether the reasons for impairment have since ceased to apply (at least in part). In this context, it was necessary to observe the limits applied on the reversal of impairment losses pursuant to IAS 36, which stipulate that, when reversing impairment losses, the carrying amount of an asset must not be increased above the lower of (a) its recoverable amount and (b) the carrying amount that would have been determined if no impairment losses had been recognized in prior periods. The fair value less costs to sell of the unit "USA" increased from 2012 onwards as a result of a rise in the share price of T-Mobile US. In the financial years 2012 to 2016, the recoverable amount of the FCC licenses subject to impairment losses was below the carrying amount on which an impairment loss had already been recognized; as a result, the limits on the reversal of impairment losses had to be observed. In financial year 2017, the results of the Federal Communications Commission's 600 MHz auction, which were released in the third quarter of 2017, gave the first indications that the impairment of the FCC licenses no longer applied and resulted in a EUR 1.7 billion partial reversal of the impairment losses recognized on the carrying amount of the FCC licenses. As a result of the preliminary purchase price allocation carried out in connection with the business combination of T-Mobile US and Sprint that closed on April 1, 2020, there were again indications in financial year 2020 of a further reversal of the impairment losses recognized on the FCC licenses.

Consequently, the respective FCC licenses were remeasured based on a market valuation. This revealed a fair value of EUR 14.7 billion for the FCC licenses that had to be tested for reversal of impairment. The last carrying amount prior to that was EUR 13.1 billion, and (in consideration of the limits for reversing impairment losses under IAS 36) this resulted in a further partial reversal of the impairment losses and an increase in the carrying amount of the FCC licenses by EUR 1.6 billion, which was recognized through other operating income.

Due to the material impact on profit or loss and the executive directors' judgments and estimates made in assessing the reversal of the impairment losses, this matter was of particular significance in the context of our audit.

2 | As part of our audit, we assessed, among other things, whether the measurement on the basis of a market valuation and the underlying valuation parameters and assumptions on the whole provide a proper basis for measuring the respective licenses held by T-Mobile US. We based our assessment, among other things, on a comparison with similar transactions to acquire FCC licenses. We took into consideration both direct auctions and secondary market transactions and assessed whether the selected transactions were sufficiently comparable in relation to the transaction date, the underlying frequency bands and the market participants involved. We also used analyst estimates that publish price points for specific frequency bands. On this basis we also assessed whether the market price per megahertz in relation to the population ("market price per MHz/pop") that the Company used as a multiplier when measuring the FCC licenses is appropriate to determine the fair value of the FCC licenses. We also used a sensitivity analysis to take into consideration the additional increases in market price per MHz/pop over time. In addition, we assessed the allocation to the FCC licenses, which were impaired at the time, and verified the calculation model. From our point of view, the valuation method used by the executive directors was properly applied and the measurement parameters and assumptions were logically derived.

3 | The Company's disclosures pertaining to the partial reversal of impairment losses on the FCC licenses are contained in section "6 – Intangible assets" and "21 – Other operating income" of the notes to the consolidated financial statements.

Other Information

The executive directors are responsible for the other information. The other information comprises the following non-audited parts of the group management report:

- the statement on corporate governance pursuant to § 289f HGB and § 315d HGB included in section "Other Disclosures – Corporate Governance Statement in accordance with §§ 289f, 315d HGB" of the group management report
- the non-financial statement pursuant to § 289b Abs. 1 HGB and § 315b Abs. 1 HGB included in section "Corporate Responsibility and Non-Financial Statement" of the group management report

The other information comprises further the remaining parts of the annual report – excluding cross-references to external information – with the exception of the audited consolidated financial statements, the audited group management report and our auditor's report.

Our audit opinions on the consolidated financial statements and on the group management report do not cover the other information, and consequently we do not express an audit opinion or any other form of assurance conclusion thereon.

In connection with our audit, our responsibility is to read the other information and, in so doing, to consider whether the other information

- is materially inconsistent with the consolidated financial statements, with the group management report or our knowledge obtained in the audit, or
- otherwise appears to be materially misstated.

If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report in this regard.

Responsibilities of the Executive Directors and the Supervisory Board for the Consolidated Financial Statements and the Group Management Report

The executive directors are responsible for the preparation of the consolidated financial statements that comply, in all material respects, with IFRSs as adopted by the EU and the additional requirements of German commercial law pursuant to § 315e Abs. 1 HGB and that the consolidated financial statements, in compliance with these requirements, give a true and fair view of the assets, liabilities, financial position, and financial performance of the Group. In addition, the executive directors are responsible for such internal control as they have determined necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated financial statements, the executive directors are responsible for assessing the Group's ability to continue as a going concern. They also have the responsibility for disclosing, as applicable, matters related to going concern. In addition, they are responsible for financial reporting based on the going concern basis of accounting unless there is an intention to liquidate the Group or to cease operations, or there is no realistic alternative but to do so.

Furthermore, the executive directors are responsible for the preparation of the group management report that as a whole provides an appropriate view of the Group's position and is, in all material respects, consistent with the consolidated financial statements, complies with German legal requirements, and appropriately presents the opportunities and risks of future development. In addition, the executive directors are responsible for such arrangements and measures (systems) as they have considered necessary to enable the preparation of a group management report that is in accordance with the applicable German legal requirements, and to be able to provide sufficient appropriate evidence for the assertions in the group management report.

The supervisory board is responsible for overseeing the Group's financial reporting process for the preparation of the consolidated financial statements and of the group management report.

Auditor's Responsibilities for the Audit of the Consolidated Financial Statements and of the Group Management Report

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and whether the group management report as a whole provides an appropriate view of the Group's position and, in all material respects, is consistent with the consolidated financial statements and the knowledge obtained in the audit, complies with the German legal requirements and appropriately presents the opportunities and risks of future development, as well as to issue an auditor's report that includes our audit opinions on the consolidated financial statements and on the group management report.

Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with § 317 HGB and the EU Audit Regulation and in compliance with German Generally Accepted Standards for Financial Statement Audits promulgated by the Institut der Wirtschaftsprüfer (IDW) and supplementary compliance with the ISAs will always detect a material misstatement Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated financial statements and this group management report.

We exercise professional judgment and maintain professional skepticism throughout the audit. We also

- Identify and assess the risks of material misstatement of the consolidated financial statements and of the group management report, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our audit opinions. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit of the consolidated financial statements and of arrangements and measures (systems) relevant to the audit of the group management report in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an audit opinion on the effectiveness of these systems.
- Evaluate the appropriateness of accounting policies used by the executive directors and the reasonableness of estimates made by the executive directors and related disclosures.
- Conclude on the appropriateness of the executive directors' use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in the auditor's report to the related disclosures in the consolidated financial statements and in the group management report or, if such disclosures are inadequate, to modify our respective audit opinions. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Group to cease to be able to continue as a going concern.
- Evaluate the overall presentation, structure and content of the consolidated financial statements, including the disclosures, and whether the consolidated financial statements present the underlying transactions and events in a manner that the consolidated financial statements give a true and fair view of the assets, liabilities, financial position and financial performance of the Group in compliance with IFRSs as adopted by the EU and the additional requirements of German commercial law pursuant to § 315e Abs. 1 HGB.
- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express audit opinions on the consolidated financial statements and on the group management report. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our audit opinions.
- Evaluate the consistency of the group management report with the consolidated financial statements, its conformity with German law, and the view of the Group's position it provides.
- Perform audit procedures on the prospective information presented by the executive directors in the group management report. On the basis of sufficient appropriate audit evidence we evaluate, in particular, the significant assumptions used by the executive directors as a basis for the prospective information and evaluate the proper derivation of the prospective information from these assumptions. We do not express a separate audit opinion on the prospective information and on the assumptions used as a basis. There is a substantial unavoidable risk that future events will differ materially from the prospective information.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide those charged with governance with a statement that we have complied with the relevant independence requirements, and communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, the related safeguards.

From the matters communicated with those charged with governance, we determine those matters that were of most significance in the audit of the consolidated financial statements of the current period and are therefore the key audit matters. We describe these matters in our auditor's report unless law or regulation precludes public disclosure about the matter.

OTHER LEGAL AND REGULATORY REQUIREMENTS

Assurance Report in Accordance with § 317 Abs. 3b HGB on the Electronic Reproduction of the Consolidated Financial Statements and the Group Management Report Prepared for Publication Purposes

Reasonable Assurance Conclusion

We have performed an assurance engagement in accordance with § 317 Abs. 3b HGB to obtain reasonable assurance about whether the reproduction of the consolidated financial statements and the group management report (hereinafter the "ESEF documents") contained in the attached electronic file deutschetelekomag_ka_lb_20201231.zip and prepared for publication purposes complies in all material respects with the requirements of § 328 Abs. 1 HGB for the electronic reporting format ("ESEF format"). In accordance with German legal requirements, this assurance engagement only extends to the conversion of the information contained in the consolidated financial statements and the group management report into the ESEF format and therefore relates neither to the information contained within this reproduction nor to any other information contained in the above-mentioned electronic file.

In our opinion, the reproduction of the consolidated financial statements and the group management report contained in the above-mentioned attached electronic file and prepared for publication purposes complies in all material respects with the requirements of § 328 Abs. 1 HGB for the electronic reporting format. We do not express any opinion on the information contained in this reproduction nor on any other information contained in the above-mentioned electronic file beyond this reasonable assurance conclusion and our audit opinion on the accompanying consolidated financial statements and the accompanying group management report for the financial year from January 1 to December 31, 2020 contained in the "Report on the Audit of the Consolidated Financial Statements and on the Group Management Report" above.

Basis for the Reasonable Assurance Conclusion

We conducted our assurance engagement on the reproduction of the consolidated financial statements and the group management report contained in the above-mentioned attached electronic file in accordance with § 317 Abs. 3b HGB and the Exposure Draft of IDW Assurance Standard: Assurance in Accordance with § 317 Abs. 3b HGB on the Electronic Reproduction of Financial Statements and Management Reports Prepared for Publication Purposes (ED IDW AsS 410) and the International Standard on Assurance Engagements 3000 (Revised). Accordingly, our responsibilities are further described below in the "Group Auditor's Responsibilities for the Assurance Engagement on the ESEF Documents" section. Our audit firm has applied the IDW Standard on Quality Management: Requirements for Quality Management in the Audit Firm (IDW QS 1).

Responsibilities of the Executive Directors and the Supervisory Board for the ESEF Documents

The executive directors of the Company are responsible for the preparation of the ESEF documents including the electronic reproduction of the consolidated financial statements and the group management report in accordance with § 328 Abs. 1 Satz 4 Nr. 1 HGB and for the tagging of the consolidated financial statements in accordance with § 328 Abs. 1 Satz 4 Nr. 2 HGB.

In addition, the executive directors of the Company are responsible for such internal control as they have considered necessary to enable the preparation of ESEF documents that are free from material non-compliance with the requirements of § 328 Abs. 1 HGB for the electronic reporting format, whether due to fraud or error.

The executive directors of the Company are also responsible for the submission of the ESEF documents together with the auditor's report and the attached audited consolidated financial statements and audited group management report as well as other documents to be published to the operator of the German Federal Gazette [Bundesanzeiger].

The supervisory board is responsible for overseeing the preparation of the ESEF documents as part of the financial reporting process.

Group Auditor's Responsibilities for the Assurance Engagement on the ESEF Documents

Our objective is to obtain reasonable assurance about whether the ESEF documents are free from material non-compliance with the requirements of § 328 Abs. 1 HGB, whether due to fraud or error. We exercise professional judgment and maintain professional skepticism throughout the assurance engagement. We also:

- Identify and assess the risks of material non-compliance with the requirements of § 328 Abs. 1 HGB, whether due to fraud or error, design and perform assurance procedures responsive to those risks, and obtain assurance evidence that is sufficient and appropriate to provide a basis for our assurance conclusion.
- Obtain an understanding of internal control relevant to the assurance engagement on the ESEF documents in order to design assurance procedures that are appropriate in the circumstances, but not for the purpose of expressing an assurance conclusion on the effectiveness of these controls.
- Evaluate the technical validity of the ESEF documents, i.e., whether the electronic file containing the ESEF documents meets the requirements of the Delegated Regulation (EU) 2019/815 in the version applicable as at the balance sheet date on the technical specification for this electronic file.
- Evaluate whether the ESEF documents enables a XHTML reproduction with content equivalent to the audited consolidated financial statements and to the audited group management report.
- Evaluate whether the tagging of the ESEF documents with Inline XBRL technology (iXBRL) enables an appropriate and complete machine-readable XBRL copy of the XHTML reproduction.

Further Information pursuant to Article 10 of the EU Audit Regulation

We were elected as group auditor by the annual general meeting on June 19, 2020. We were engaged by the supervisory board on July 2, 2020. We have been the group auditor of Deutsche Telekom Aktiengesellschaft, Bonn, without interruption since the Company first met the requirements as a Public Interest Entity in accordance with § 319a Abs. 1 Satz 1 HGB in the financial year 1996.

We declare that the audit opinions expressed in this auditor's report are consistent with the additional report to the audit committee pursuant to Article 11 of the EU Audit Regulation (long-form audit report).

GERMAN PUBLIC AUDITOR RESPONSIBLE FOR THE ENGAGEMENT

The German Public Auditor responsible for the engagement is Thomas Tandetzki.

Frankfurt/Main, February 16, 2021

PricewaterhouseCoopers GmbH
Wirtschaftsprüfungsgesellschaft

sgd. Dr. Peter Bartels
Wirtschaftsprüfer
(German Public Auditor)

sgd. Thomas Tandetzki
Wirtschaftsprüfer
(German Public Auditor)

Boards, seats, and further information

Members of the Supervisory Board of Deutsche Telekom AG in 2020

Prof. Dr. Ulrich Lehner
Member of the Supervisory Board since April 17, 2008
Chairman of the Supervisory Board since April 25, 2008
Member of the Shareholders' Committee of Henkel AG & Co. KGaA, Düsseldorf

Seats on the supervisory boards of other companies:
- Porsche Automobil Holding SE, Stuttgart (since 11/2007)

Dr. Rolf Bösinger
Member of the Supervisory Board since June 1, 2018
State Secretary at the Federal Ministry of Finance, Berlin
– No other seats –

Dr. Günther Bräunig
Member of the Supervisory Board since March 21, 2018
CEO of the Executive Board of KfW, Frankfurt/Main

Seats on the supervisory boards of other companies:
- Deutsche Pfandbriefbank AG, Unterschleißheim (since 8/2009), Chairman of the Supervisory Board (since 8/2014)
- Deutsche Post AG, Bonn (since 3/2018)

Odysseus D. Chatzidis
Member of the Supervisory Board since January 3, 2018
Chairman of the European Works Council of Deutsche Telekom, Bonn
– No other seats –

Constantin Greve
Member of the Supervisory Board since November 20, 2018
Chairman of the Central Works Council of Deutsche Telekom AG, Bonn
– No other seats –

Lars Hinrichs
Member of the Supervisory Board since October 1, 2013
CEO of Cinco Capital GmbH, Hamburg

Seats on the supervisory boards of other companies:
- xbAV AG, Munich, Chairman of the Supervisory Board (since 1/2016)

Dr. Helga Jung
Member of the Supervisory Board since May 25, 2016
Former Member of the Board of Management of Allianz SE, Munich

Seats on the supervisory boards of other companies:
- Allianz Beratungs- und Vertriebs-AG, Munich (3/2018 to 12/2020)
- Allianz Deutschland AG, Munich (since 3/2016)
- Allianz Global Corporate & Specialty SE, Munich, Deputy Chairwoman of the Supervisory Board (since 5/2013)
- Allianz Private Krankenversicherungs-AG, Munich (3/2018 to 12/2020)
- Allianz Versicherungs-AG, Munich (since 11/2019), Chairwoman of the Supervisory Board (11/2019 to 3/2020)
- Allianz Lebensversicherungs-AG, Stuttgart, Deputy Chairwoman of the Supervisory Board (since 4/2020)

Prof. Dr. Michael Kaschke
Member of the Supervisory Board since April 22, 2015
CEO & President of Carl Zeiss AG, Oberkochen, until March 31, 2020

Seats on the supervisory boards of other companies:
- Carl Zeiss Meditec AG, Jena, Chairman of the Supervisory Board (since 3/2010)
- Carl Zeiss Industrielle Messtechnik GmbH, Oberkochen, Chairman of the Supervisory Board (1/2014 to 3/2020)
- Henkel AG & Co. KGaA, Düsseldorf (since 4/2008)
- Robert Bosch GmbH, Stuttgart (since 4/2016)

Member of comparable supervisory bodies of business enterprises in Germany or abroad:

- Carl Zeiss Co., Ltd., Seoul, South Korea, Chairman of the Board of Directors (1/2017 to 3/2020)
- Carl Zeiss Far East Co., Ltd., Hong Kong, China, Chairman of the Board of Directors (4/2002 to 3/2020)
- Carl Zeiss India (Bangalore) Private Ltd., Bangalore, India, Chairman of the Board of Directors (12/2009 to 3/2020)
- Carl Zeiss Pte. Ltd., Singapore, Singapore, Member of the Board of Directors (4/2002 to 3/2020)
- Carl Zeiss (Shanghai) Co., Ltd., Shanghai, China, Member of the Board of Directors (6/2017 to 3/2020)

Member of supervisory boards in Germany required to be formed by law outside of business enterprises:

- Karlsruhe Institute of Technology (KIT), Karlsruhe, corporation under public law (not a commercial enterprise within the meaning of § 100 (2) sentence 1 no. 1 AktG), Chairman (since 12/2019)

Nicole Koch

Member of the Supervisory Board since January 1, 2016
Chairwoman of the Works Council of Deutsche Telekom Privatkunden-Vertrieb GmbH, Bonn

Member of the supervisory boards of subsidiaries, associates, and joint ventures:

- Deutsche Telekom Privatkunden-Vertrieb GmbH, Bonn (since 6/2004)

Dagmar P. Kollmann

Member of the Supervisory Board since May 24, 2012
Entrepreneur, member of several supervisory boards and advisory boards as well as the Monopolies Commission
Former CEO of Morgan Stanley Bank, Frankfurt/Main
Former Member of the Board of Directors of Morgan Stanley Bank International Limited, London, United Kingdom

Seats on the supervisory boards of other companies:

- Deutsche Pfandbriefbank AG, Unterschleißheim, Deputy Chairwoman of the Supervisory Board (since 8/2009)
- KfW IPEX-Bank GmbH, Frankfurt/Main (since 5/2012)

Member of comparable supervisory bodies of business enterprises in Germany or abroad:

- Coca Cola European Partners plc, London, United Kingdom (since 5/2019)
- Unibail-Rodamco SE, Paris, France, Member of the Supervisory Board (since 5/2014)

Petra Steffi Kreusel

Member of the Supervisory Board since January 1, 2013
Senior Vice President, Customer & Public Relations at T-Systems International GmbH, Frankfurt/Main, until June 30, 2020
Senior Vice President, Customer & Public Relations at Deutsche Telekom Business Solutions GmbH, Bonn
Group Officer for Digital Education and School at Deutsche Telekom AG, Bonn
Chairwoman of the Executive Staff Representation Committee of T-Systems International GmbH, Frankfurt/Main, until June 30, 2020
Chairwoman of the Executive Staff Representation Committee of Deutsche Telekom Business Solutions GmbH, Bonn
Deputy Chairwoman of the Group Executive Staff Representation Committee of Deutsche Telekom AG, Bonn

Member of the supervisory boards of subsidiaries, associates, and joint ventures:

- Deutsche Telekom Business Solutions GmbH, Bonn (since 8/2020)
- T-Systems International GmbH, Frankfurt/Main (12/2010 to 6/2020)

Harald Krüger

Member of the Supervisory Board since May 17, 2018
Former Chairman of the Board of Management of Bayerische Motoren Werke AG, Munich

Seats on the supervisory boards of other companies:

- Deutsche Lufthansa AG, Cologne (since 5/2020)

Kerstin Marx

Member of the Supervisory Board since May 1, 2020
Chairwoman of the Group Works Council at Deutsche Telekom AG, Bonn

Member of the supervisory boards of subsidiaries, associates, and joint ventures:

- Deutsche Telekom Business Solutions GmbH, Bonn (since 8/2020)
- T-Systems International GmbH, Frankfurt/Main (12/2010 to 6/2020)

Frank Sauerland
Member of the Supervisory Board since November 20, 2018
Deputy Chairman of the Supervisory Board since March 27, 2020
Head of the Collective Bargaining Policy Committee, TC/IT National Committee at the ver.di National Executive Board, Berlin

Member of the supervisory boards of subsidiaries, associates, and joint ventures:
- Telekom Deutschland GmbH, Bonn (since 12/2016), Deputy Chairman of the Supervisory Board (since 1/2017)

Lothar Schröder
Member of the Supervisory Board since June 22, 2006
Deputy Chairman of the Supervisory Board from June 29, 2006 to March 26, 2020
Trade Union Secretary, former member of the ver.di National Executive Board, Berlin

Seats on the supervisory boards of other companies:
- Vereinigte Postversicherung VVaG, Stuttgart (since 6/2008)
- VPV Holding AG, Stuttgart (since 6/2018)
- VPV Lebensversicherungs-AG, Stuttgart (since 10/2015)

Member of the supervisory boards of subsidiaries, associates, and joint ventures:
- Deutsche Telekom Services Europe SE, Bonn (since 8/2019), Deputy Chairman of the Supervisory Board (since 11/2019)

Nicole Seelemann-Wandtke
Member of the Supervisory Board since July 5, 2018
Deputy Chairwoman of the Works Council of the Consumers unit of Telekom Deutschland GmbH, Bonn
– No other seats –

Sibylle Spoo
Member of the Supervisory Board since May 4, 2010
Lawyer, Trade Union Secretary at the ver.di Federal Administration, Berlin
– No other seats –

Karl-Heinz Streibich
Member of the Supervisory Board since October 1, 2013
President of acatech – Deutsche Akademie der Technikwissenschaften (National Academy of Science and Engineering), Berlin

Seats on the supervisory boards of other companies:
- Dürr AG, Bietigheim-Bissingen (5/2011 to 5/2020), Chairman of the Supervisory Board (1/2018 to 5/2020)
- Münchener Rückversicherungs-Gesellschaft Aktiengesellschaft in München, Munich (since 4/2019)
- Siemens Healthineers AG, Erlangen (since 3/2018)
- Software AG, Darmstadt, Chairman of the Supervisory Board (since 6/2020)

Margret Suckale
Member of the Supervisory Board since September 28, 2017
Former Member of the Board of Executive Directors of BASF SE, Ludwigshafen

Seats on the supervisory boards of other companies:
- DWS Group GmbH & Co. KGaA, Frankfurt/Main (since 3/2018)
- HeidelbergCement AG, Heidelberg (since 8/2017)
- Infineon Technologies AG, Neubiberg (since 2/2020)

Karin Topel
Member of the Supervisory Board since July 1, 2017
Chairwoman of the Works Council of Deutsche Telekom Technik GmbH, Bonn, Technical Branch Office Eastern District
– No other seats –

Supervisory Board members who left in 2020:

Josef Bednarski
Member of the Supervisory Board from November 26, 2013 to April 30, 2020
Chairman of the Group Works Council at Deutsche Telekom AG, Bonn, until April 30, 2020
– No other seats –

Members of the Board of Management of Deutsche Telekom AG in 2020

Timotheus Höttges
Chairman of the Board of Management since January 1, 2014

Seats on the supervisory boards of other companies:
- Daimler AG, Stuttgart (since 7/2020)
- FC Bayern München AG, Munich (since 2/2010)
- Henkel AG & Co. KGaA, Düsseldorf (since 4/2016)

Member of comparable supervisory bodies of business enterprises in Germany or abroad:
- BT Group plc, London, United Kingdom, Member of the Board of Directors (1/2016 to 5/2020)

Member of the supervisory boards of subsidiaries, associates, and joint ventures:
- Telekom Deutschland GmbH, Bonn (since 4/2005), Chairman of the Supervisory Board (since 7/2009)
- T-Mobile US, Inc., Bellevue, United States, Chairman of the Board of Directors (since 4/2013)

Adel Al-Saleh
Board member responsible for T-Systems since January 1, 2018

Member of comparable supervisory bodies of business enterprises in Germany or abroad:
- BT Group plc, London, United Kingdom, Member of the Board of Directors (since 5/2020)

Birgit Bohle
Board member responsible for Human Resources and Legal Affairs, and Labor Director since January 1, 2020

Member of the supervisory boards of subsidiaries, associates, and joint ventures:
- Telekom Deutschland GmbH, Bonn (since 1/2019)
- Deutsche Telekom Services Europe SE, Bonn (since 10/2019)

Srini Gopalan
Board member responsible for Germany since November 1, 2020
Board member responsible for Europe from January 1, 2017 to October 31, 2020

Member of the supervisory boards of subsidiaries, associates, and joint ventures:
- Deutsche Telekom Service GmbH, Bonn, Chairman of the Supervisory Board (since 11/2020)
- Deutsche Telekom Technik GmbH, Bonn, Chairman of the Supervisory Board (since 11/2020)
- Hellenic Telecommunications Organization S.A. (OTE S.A.), Marousi, Athens, Greece (1/2017 to 12/2020)
- T-Mobile Polska S.A., Warsaw, Poland (since 1/2017), Chairman of the Supervisory Board (1/2017 to 10/2020)
- T-Mobile US, Inc., Bellevue, United States, Member of the Board of Directors (6/2019 to 10/2020)

Dr. Christian P. Illek
Board member responsible for Finance since January 1, 2019

Member of the supervisory boards of subsidiaries, associates, and joint ventures:
- BuyIn SA/NV, Brussels, Belgium, Member of the Board of Directors (since 12/2018)
- Deutsche Telekom Services Europe SE, Bonn (since 8/2019), Chairman of the Supervisory Board (since 11/2019)
- T-Mobile US, Inc., Bellevue, United States, Member of the Board of Directors (since 1/2019)
- T-Systems International GmbH, Frankfurt/Main (since 5/2015), Chairman of the Supervisory Board (since 11/2016)

Thorsten Langheim
Board member responsible for USA and Group Development since January 1, 2019

Member of the supervisory boards of subsidiaries, associates, and joint ventures:
- Deutsche Telekom Capital Partners Management GmbH, Hamburg, Chairman of the Investment Committee (since 6/2015)
- T-Mobile US, Inc., Bellevue, United States, Member of the Board of Directors (since 6/2014)

Dominique Leroy
Board member responsible for Europe since November 1, 2020

Member of comparable supervisory bodies of business enterprises in Germany or abroad:
- Koninklijke Ahold Delhaize N.V., Zaandam, Netherlands, Member of the Supervisory Board (since 4/2015)
- Compagnie de Saint-Gobain, Courbevoie, France, Member of the Board of Directors (since 11/2017)
- Telenco Group, Moirans, France, Member of the Board of Directors (7/2020 to 12/2020)

Member of the supervisory boards of subsidiaries, associates, and joint ventures:
- Hellenic Telecommunications Organization S.A. (OTE S.A.), Marousi, Athens, Greece (since 11/2020)
- T-Mobile US, Inc., Bellevue, United States, Member of the Board of Directors (since 11/2020)
- T-Mobile Polska S.A., Warsaw, Poland (since 11/2020), Chairwoman of the Supervisory Board (since 11/2020)

Claudia Nemat
Board member responsible for Technology and Innovation since January 1, 2017

Seats on the supervisory boards of other companies:
- Airbus Defence and Space GmbH, Ottobrunn (since 5/2016)

Member of comparable supervisory bodies of business enterprises in Germany or abroad:
- Airbus Group SE, Leiden, Netherlands, Member of the Board of Directors (since 5/2016)

Member of the supervisory boards of subsidiaries, associates, and joint ventures:
- Deutsche Telekom IT GmbH, Bonn, Chairwoman of the Supervisory Board (since 6/2017)
- Deutsche Telekom Security GmbH, Bonn (since 8/2020), Deputy Chairwoman of the Supervisory Board (since 9/2020)
- T-Systems International GmbH, Bonn (since 4/2020)

Board of Management members who left in 2020:

Dr. Thomas Kremer
Board member responsible for Data Privacy, Legal Affairs, and Compliance from June 1, 2012 to March 31, 2020

Member of the supervisory boards of subsidiaries, associates, and joint ventures:
- T-Systems International GmbH, Frankfurt/Main (5/2015 to 3/2020)

Dr. Dirk Wössner
Board member responsible for Germany from January 1, 2018 to October 31, 2020

Member of the supervisory boards of subsidiaries, associates, and joint ventures:
- Deutsche Telekom Außendienst GmbH, Bonn, Chairman of the Supervisory Board (1/2018 to 10/2020)
- Deutsche Telekom Geschäftskunden-Vertrieb GmbH, Bonn (1/2018 to 10/2020), Chairman of the Supervisory Board (2/2018 to 10/2020)
- Deutsche Telekom Service GmbH, Bonn, Chairman of the Supervisory Board (1/2018 to 10/2020)
- Deutsche Telekom Technik GmbH, Bonn, Chairman of the Supervisory Board (1/2018 to 10/2020)
- Deutsche Telekom Privatkunden-Vertrieb GmbH, Bonn, Chairman of the Supervisory Board (1/2018 to 10/2020)

Glossary

4G. Refers to the fourth-generation mobile communications standard that supports higher transmission rates (see LTE).

5G. New communications standard (launched from 2020), which offers data rates in the gigabit range, converges fixed-network and mobile communications, and supports the Internet of Things.

All IP – All Internet Protocol. An all-IP network makes services such as VoIP (Voice over IP), IPTV (Internet Protocol Television), data transfer, etc. available to all users anywhere at all times. The data is transmitted in switched packets using the Internet Protocol (IP).

Bitstream access. Wholesale service used by alternative telephone companies to provide broadband lines.

Bot. A bot (short for robot) is a computer program that processes repetitive tasks in a largely autonomous manner without the need for interaction with a human user.

Carrier. A telecommunications network operator.

CDP. An initiative by institutional investors that aims to promote dialog between investors and companies on climate change issues. The project counts the world's largest companies among its members. The companies disclose data on their greenhouse gas emissions and climate protection strategies. The CDP collects and publishes the data on an annual basis.

Cloud computing. Refers to the dynamic provision of infrastructure, software, or platform services online. Apart from a high level of automation and virtualization, the services provided have to be multi-client-capable and include standardized hardware and software. Customers source these services on demand and pay based on actual usage. The communication infrastructure may be the internet (public cloud), a corporate network (private cloud), or a mix of the two (hybrid cloud). Dynamic Services is a T-Systems product for the flexible procurement of ICT resources and services.

Contingent model. Contract concluded over a long period of time with defined advance payment and minimum purchase requirement. In return, the resellers pay a reduced monthly charge for VDSL. This allows them to put together interesting offers for their own consumers without having to invest in fiber-optic lines of their own. This improves the utilization of Telekom Deutschland GmbH's existing VDSL network. The current "contingent model" is being developed further to reflect the network build-out in terms of availability and bandwidth.

Cybersecurity. Protection against internet crime.

Desktop services. Global desktop services involve a variety of support services, including the outsourcing of entire IT networks. In this context, Deutsche Telekom offers a full portfolio of corporate IT services, from server infrastructure and PC workstations through to application management and call center services that provide user support.

Edge Computing. Computing at the edge of the mobile communications network – not in remote data centers, but close to the customer, in the edge cloud. Edge computing opens up new applications: Anything that requires the rapid processing of large amounts of data, low latency and particularly strong security, such as augmented reality games.

ERP – Enterprise Resource Planning. Refers to systems that help deploy an organization's resources such as capital, equipment, and human resources as efficiently as possible in order to optimize business processes.

Fairphone. Fairphone is the first smartphone manufacturer to receive the Fairtrade certificate for the gold used in its devices. Fairphone sources rare minerals from conflict-free mining areas and continually monitors the working conditions along its supply chain. The Fairphone is also designed for longevity and easy repair, making it a particularly low-waste device.

Fiber-optic lines. Sum of all FTTx access lines (e.g., FTTC/VDSL, vectoring, and FTTH).

Fixed-network lines. Lines in operation excluding internal use and public telecommunications, including IP-based lines. The totals reported in the combined management report were calculated on the basis of precise figures and rounded to millions or thousands. Percentages were calculated on the basis of the figures shown.

FMC – Fixed-Mobile Convergence. The merging of fixed-network and mobile rate plans for customers that have both fixed-network and mobile contracts with Deutsche Telekom.

FTTB – Fiber To The Building or **Fiber To The Basement.** In telecommunications, FTTB means that the fiber-optic cable is terminated in the user's house (basement).

FTTC – Fiber To The Curb. In the FTTC architecture the fiber-optic cable is not terminated inside users' homes (see FTTH) but in a cable distribution box (gray street cabinet). Existing copper technology is used for the last section of the connection to the user.

FTTH – Fiber To The Home. In telecommunications FTTH means that the fiber-optic cable is terminated right in the user's home or apartment.

FTTx. This includes the three options for fiber-optic rollout: FTTB, FTTC, and FTTH.

GHG Protocol. The Greenhouse Gas (GHG) Protocol divides emissions of greenhouse gases into the categories of Scope 1, Scope 2, and Scope 3, depending on their source.

- **Scope 1** includes all emissions directly generated in the Company, e.g., as a result of the consumption of fuel or fuel oil.
- **Scope 2** covers all indirect emissions associated with the generation of energy purchased by the Company from external sources, e.g., electricity and district heating.

- **Scope 3** applies to all other emissions generated along the corporate value chain. This comprises both indirect emissions in the company itself (e.g., business trips, commuting), and emissions from upstream value chain stages (e.g., procurement, logistics) and downstream stages (e.g., during customer use of products and services, during disposal).

Global e-Sustainability Initiative (GeSI). GeSI is a joint initiative established by the world's leading ICT organizations with the objective of improving sustainability in the ICT sector. Deutsche Telekom is a member of GeSI, as are many other leading enterprises.

Hybrid line. Combines the strengths of the DSL/VDSL fixed network and the LTE mobile network. While using the internet at home the hybrid router transports the permanent data load with first priority via the DSL/VDSL line. During peak load the router automatically connects to the high-speed mobile network for down- and uploading.

Hybrid router. Routers that are able to combine the customer's fixed and mobile bandwidths.

IC – Interconnection (see MTR).

ICT – Information and Communication Technology.

IoT – Internet of Things. The IoT enables the intelligent networking of things like sensors, devices, machines, vehicles, etc., with the aim of automating applications and decision-making processes. Deutsche Telekom's IoT portfolio ranges from SIM cards and flexible data rate plans to IoT platforms in the cloud and complete solutions from a single source.

IP – Internet Protocol. Non-proprietary transport protocol in Layer 3 of the OSI reference model for inter-network communications.

IPTV – Internet Protocol Television. Refers to the digital transfer of television programs and films over a digital data network using the Internet Protocol (IP).

LTE – Long-Term Evolution. 4G mobile communications technology that uses, for example, wireless spectrum on the 800 MHz band freed up by the digitalization of television. Powerful TV frequencies enable large areas to be covered with far fewer radio masts. LTE supports speeds of over 100 Mbit/s downstream and 50 Mbit/s upstream.

M2M – Machine to Machine. Communication between machines. The information is automatically sent to the recipient. For example, in an emergency, alarm systems automatically send a signal to security or the police.

MIMO – Multiple-Input Multiple-Output. MIMO is a multiple-antenna technology that is used, for example, with LTE and 5G. It makes it possible to increase both the data rate and the quality of the service.

Mobile customers. In the combined management report, one mobile communications card corresponds to one customer. The totals were calculated on the basis of precise figures and rounded to millions or thousands. Percentages were calculated on the basis of the figures shown (see also SIM card).

MTR – Mobile Termination Rate. Termination refers to the transportation of a call, for example, from the competitor's network to the Deutsche Telekom network. When a call is transported to the mobile communications network, this is referred to as mobile termination. If the call is transported to the fixed network, this is called fixed-network termination, or simply interconnection (IC). Termination rates are the fee a telephone company must pay for network interconnection when a call is terminated in a third-party network.

MVNO – Mobile Virtual Network Operator. Company that offers mobile minutes at relatively low prices without subsidized handsets. A mobile virtual network operator does not have its own wireless network, but uses the infrastructure of another mobile operator to provide its services.

Optical fiber. Channel for optical data transmission.

OTT player – Over-the-top player. Provider of IP-based, platform-independent services, such as social media.

Postpaid. Customers who pay for communication services after receiving them (usually on a monthly basis).

Prepaid. In contrast to postpaid contracts, prepaid communication services are services for which credit has been purchased in advance with no fixed-term contractual obligations.

PSTN – Public Switched Telephone Network. Global public telephone network comprising elements such as telephones, connecting cables, and exchanges.

PUE – Power Usage Effectiveness. PUE is the ratio of the entire electrical energy consumed in a data center or network node to the energy delivered to the computing equipment.

Retail. The sale of goods and services to end users, as opposed to resale or wholesale.

Roaming. Refers to the use of a communication device or just a subscriber identity in a visited network rather than one's home network. This requires the operators of both networks to have reached a roaming agreement and switched the necessary signaling and data connections between their networks. Roaming comes into play, for example, when cell phones and smartphones are used across national boundaries.

Router. A coupling element that connects two or more sub-networks. Routers can also extend the boundaries of a network, monitor data traffic, and block any faulty data packets.

Science Based Targets initiative. Initiative that helps companies to set climate goals that comply with emissions budgets determined based on scientific data. Companies can forward their goals to the initiative for review. The initiative was set up jointly by several organizations: CDP, United Nations Global Compact (UNGC), World Resources Institute (WRI), and the World Wide Fund for Nature (WWF).

Service revenues. Revenues generated with mobile customers from services (i.e., revenues from voice services – incoming and outgoing calls – and data services), plus roaming revenues, monthly charges, and visitor revenues.

SIM card – Subscriber Identification Module card. Chip card that is inserted into a cell phone to identify it in the mobile network. Deutsche Telekom counts its customers by the number of SIM cards activated and not churned. Customer totals also include the SIM cards with which machines can communicate automatically with one another (M2M cards). The churn rate is determined and reported based on the local markets of the respective countries.

Sustainable Development Goals (SDGs). Goals that form the core of the 2030 Agenda, which the member states of the United Nations adopted in 2015 to ensure sustainable global development. The aim is to enable economic development and prosperity – in line with social justice and taking account of the ecological limits of global growth. The Agenda applies equally to all nations of the world. The 17 SDGs define goals to reduce poverty and hunger, promote healthcare and education, enable equality, protect the environment and climate, and make consumption sustainable.

ULL – Unbundled Local Loop. Competitors whose own networks do not reach into customers' premises can rent unbundled local loop lines from Deutsche Telekom. Their networks end at the local exchanges. The ULL bridges the distance between the local exchange and the termination point on the customer's premises or in their home, so it is also known as the "last mile."

Unified Communications. Integration of synchronous communication media in a standardized application environment.

Vectoring. Vectoring is a noise-canceling technology that removes the electro-magnetic interference between lines, enabling higher bit rates. However, in order to cancel noise, the operator must have control over all lines. This means that other operators cannot install their own technology in the street cabinets.

VPN – Virtual Private Network. A computer network that uses a public network to transmit private data. The data is "tunneled" through the public network and is usually encrypted in the process. However, the term "private" does not necessarily imply encrypted transmission. The variant commonly used today is the IP VPN that connects users via IP tunnels.

Wholesale. Refers to the business of selling services to third parties who sell them to their own retail customers either directly or after further processing.

XR – extended reality. Covers the entire virtuality spectrum: augmented reality, virtual reality, mixed reality, and simulated reality, as well as potential future developments.

- **AR – augmented reality.** The computer-generated enhancement of the real world with perceptual information. The information can address all the human senses. However, augmented reality often only encompasses the visual representation of information, i.e., the augmenting of images or videos with additional computer-generated information or virtual objects using overlaying/superimposition.
- **VR – virtual reality.** A simulated experience of the real world and its physical characteristics in real time in a computer-generated, interactive virtual environment. Unlike AR, which focuses on enhancing the real world with visual representations of additional data, VR fully immerses the user in a virtual world.

Disclaimer

This Report (particularly the section "Forecast") contains forward-looking statements that reflect the current views of Deutsche Telekom's management with respect to future events. They are generally identified by the words "expect," "anticipate," "believe," "intend," "estimate," "aim," "goal," "plan," "will," "seek," "outlook," or similar expressions and include generally any information that relates to expectations or targets for revenue, adjusted EBITDA AL, or other performance measures.

Forward-looking statements are based on current plans, estimates, and projections. You should consider them with caution. Such statements are subject to risks and uncertainties, most of which are difficult to predict and are generally beyond Deutsche Telekom's control. They include, for instance, the progress of Deutsche Telekom's staff-related restructuring measures and the impact of other significant strategic or business initiatives, including acquisitions, dispositions, and business combinations.

In addition, movements in exchange rates and interest rates, regulatory rulings, stronger than expected competition, technological change, litigation, and regulatory developments, among other factors, may have a material adverse effect on costs and revenue development.

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Without prejudice to existing obligations under capital market law, Deutsche Telekom does not assume any obligation to update forward-looking statements to account for new information or future events or anything else. In addition to figures prepared in accordance with IFRS, Deutsche Telekom presents alternative performance measures, e.g., EBITDA, EBITDA AL, adjusted EBITDA, adjusted EBITDA AL, adjusted EBITDA AL margin, adjusted EBIT, EBIT margin, adjusted net profit/loss, adjusted earnings per share, free cash flow, free cash flow AL, gross debt, and net debt.

These measures should be considered in addition to, but not as a substitute for, the information prepared in accordance with IFRS. Alternative performance measures are not subject to IFRS or any other generally accepted accounting principles. Other companies may define these terms in different ways.

For further information on alternative performance measures, please refer to the section "Management of the Group" in the combined management report or on Deutsche Telekom's website.

The figures shown in this report were rounded in accordance with standard business rounding principles. As a result, the total indicated may not be equal to the precise sum of the individual figures.

Our Annual Report (PDF and online) includes references and links to websites with additional information not contained in the Annual Report. These references and links are purely of a supplementary nature and are only intended to simplify access to this information. Please note that this information is not part of the Annual Report.

Financial calendar

February 26, 2021	April 1, 2021	May 12, 2021	May 20/21, 2021
Press conference on the 2020 financial year and publication of the 2020 Annual Report	2021 shareholders' meeting (virtual)	Publication of the Interim Group Report as of March 31, 2021	2021 Capital Markets Day

August 12, 2021	November 12, 2021	February 24, 2022
Publication of the Interim Group Report as of June 30, 2021	Publication of the Interim Group Report as of September 30, 2021	Press conference on the 2021 financial year and publication of the 2021 Annual Report

All dates are subject to change.

For more dates, an updated schedule, and information on webcasts, please go to www.telekom.com/financial-calendar.

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