DEUTSCHE TELEKOM
THE 2019 FINANCIAL YEAR

LIFE IS FOR SHARING.

SELECTED FINANCIAL DATA OF THE GROUP

billions of €

		Change compared to prior year %	2019	2018	2017	2016	2015	2014	2013	2012
REVENUE AND EARNINGS										
Net revenue		6.4	80.5	75.7	74.9	73.1	69.2	62.7	60.1	58.2
Of which: domestic	%		30.5	32.2	32.8	33.7	36.2	39.9	42.2	44.3
Of which: international	%		69.5	67.8	67.2	66.3	63.8	60.1	57.8	55.7
Profit (loss) from operations (EBIT)		18.2	9.5	8.0	9.4	9.2	7.0	7.2	4.9	(4.0)
Net profit (loss)		78.5	3.9	2.2	3.5	2.7	3.3	2.9	0.9	(5.4)
Net profit (loss) (adjusted for special factors)		8.9	4.9	4.5	6.0	4.1	4.1	2.4	2.8	2.5
EBITDA		24.2	27.1	21.8	24.0	22.5	18.4	17.8	15.8	18.0
EBITDA AL		7.3	23.1	21.6	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
EBITDA (adjusted for special factors)		23.0	28.7	23.3	22.2	21.4	19.9	17.6	17.4	18.0
EBITDA AL (adjusted for special factors)		7.2	24.7	23.1	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
EBITDA AL margin (adjusted for special factors)	%		30.7	30.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
PROFITABILITY										
ROCE	%		5.1	4.7	5.8	5.7	4.8	5.5	3.8	(2.4)
STATEMENT OF FINANCIAL POSITION										
Total assets		17.4	170.7	145.4	141.3	148.5	143.9	129.4	118.1	107.9
Shareholders' equity		6.4	46.2	43.4	42.5	38.8	38.2	34.1	32.1	30.5
Equity ratio	%		27.1	29.9	30.0	26.2	26.5	26.3	27.1	28.3
Net debt		37.2	76.0	55.4	50.8	50.0	47.6	42.5	39.1	36.9
Relative debt (Net debt/EBITDA (adjusted for special factors))			2.65	2.4	2.3	2.3	2.4	2.4	2.2	2.1
CASH FLOWS										
Net cash from operating activities		28.6	23.1	17.9	17.2	15.5	15.0	13.4	13.0	13.6
Cash capex		14.9	(14.4)	(12.5)	(19.5)	(13.6)	(14.6)	(11.8)	(11.1)	(8.4)
Cash capex (before spectrum investment)		7.3	(13.1)	(12.2)	(12.1)	(11.0)	(10.8)	(9.5)	(8.9)	(8.0)
Free cash flow (before dividend payments and spectrum investment)[a]		62.4	10.1	6.2	5.5	4.9	4.5	4.1	4.6	6.2
Free cash flow AL (before dividend payments and spectrum investment)[a]		15.9	7.0	6.1	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Net cash used in investing activities		(0.5)	(14.2)	(14.3)	(16.8)	(13.6)	(15.0)	(10.8)	(9.9)	(6.7)
Net cash (used in) from financing activities		119.1	(7.1)	(3.3)	(4.6)	(1.3)	(0.9)	(3.4)	1.0	(6.6)
EMPLOYEES										
Average number of employees (full-time equivalents, without trainees)	thousands	(1.6)	213	216	216	221	226	228	230	232
Revenue per employee	thousands of €	8.2	378.4	349.7	346.2	331.4	305.9	274.5	261.8	250.4
T-SHARE – KEY FIGURES										
Earnings per share (basic and diluted)	€	78.3	0.82	0.46	0.74	0.58	0.71	0.65	0.21	(1.24)
Adjusted earnings per share (basic and diluted)	€	8.3	1.04	0.96	1.28	0.89	0.90	0.54	0.63	0.59
Dividend per share[b]	€	(14.3)	0.60	0.70	0.65	0.60	0.55	0.50	0.50	0.70
Total dividend[c]	billions of €	(14.3)	2.8	3.3	3.1	2.8	2.5	2.3	2.2	3.0
Total number of ordinary shares at the reporting date[d]	millions	0.0	4,761	4,761	4,761	4,677	4,607	4,536	4,451	4,321

[a] And before AT&T transaction and compensation payments for MetroPCS employees.

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

[c] Subject to approval by the 2020 shareholders' meeting concerning the dividend payments for the 2019 financial year. For further information, please refer to Note 34 "Dividend per share" in the notes to the consolidated financial statements.

[d] Including treasury shares held by Deutsche Telekom AG .

millions

	Change compared to prior year %	2019	2018	2017	2016	2015	2014	2013	2012
FIXED-NETWORK AND MOBILE CUSTOMERS									
Mobile customers	3.1	184.0	178.4	168.4	165.0	156.4	150.5	142.5	127.8
Fixed-network lines	(1.3)	27.5	27.9	27.9	28.5	29.0	29.8	30.8	32.1
Broadband customers[a]	4.0	21.0	20.2	18.9	18.4	17.8	17.4	17.1	16.9

[a] 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.

The IFRS 16 "Leases" accounting standard has been applied since January 1, 2019. This led to a change in the definition of some of our financial performance indicators. Prior-year figures have not been adjusted; however, for the redefined key performance indicators we show comparatives for 2018 calculated on a pro forma basis. The key parameters used by Deutsche Telekom are defined in the section "Management of the Group" in the combined management report. For further information on the IFRS 16 accounting standard, please refer to the section "Initial application of standards, interpretations, and amendments in the financial year" in the notes to the consolidated financial statements.

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TO OUR SHAREHOLDERS

LETTER FROM THE CHAIRMAN OF THE BOARD OF MANAGEMENT

DEAR SHAREHOLDERS,
DEAR FRIENDS OF THE COMPANY,

2019 was a successful year for Deutsche Telekom. Net revenue grew once again. In the United States. In Europe. Our results in Germany were up too. We surpassed our annual targets for adjusted EBITDA AL and free cash flow AL in 2019. The three most important financial performance indicators are ahead of our medium-term guidance for 2017 through 2021. The figures now presented demonstrate very clearly that Deutsche Telekom is on a profitable growth course.

We have achieved this despite pouring a record EUR 13.1 billion primarily into building out and upgrading our digital networks worldwide. This is on top of the EUR 2.17 billion we spent in connection with the spectrum auction in Germany. The auction went on for too long and cost us a great deal of money that we would have preferred to invest in the network build-out to benefit our customers. Other countries seem to have a much better handle on the process.

The market environment in the European telecommunications sector is far from straightforward. Yet, despite the heavy regulation and inconsistent competitive situation, we emerged from the year just ended even stronger. Not only that, but we are once again the leading European telco, based on both revenue and market value. That was and remains our overarching goal.

Let’s take a look at what we achieved in 2019. Overall, net revenue came in at EUR 80.5 billion. That is an increase of 6.4 percent. In organic terms – in other words, assuming constant exchange rates and the same Group structure – revenue grew by 2.8 percent. Adjusted EBITDA AL increased by 7.2 percent to EUR 24.7 billion compared with the prior year. This puts us well ahead of our guidance, which we had already raised in the course of the year to EUR 24.1 billion. Here, too, in organic terms, we surpassed our medium-term forecast. Free cash flow AL tells the same story, up 15.9 percent from EUR 6.1 billion to EUR 7.0 billion and also exceeding our expectations.

It’s clear that our strategy is paying off. Yet we need to keep pace with the times, which is why we decided to incorporate a further key factor into the strategy. After all, we want to be more than a company that just grows. Our goal is to be an enabler of development in our society. We want to open the door to participation in the digital transformation and help connect people. To forge the future, not frustrate it. For this to become a reality, we must put ecological sustainability at the forefront of our actions, and uphold our responsibility to future generations even more now than ever. That’s why, in 2019, we introduced a number of necessary steps to set us on the right course.

Specifically, this means we adopted new climate goals for Deutsche Telekom, which the entire Group is already working hard to achieve. We plan to transition to 100 percent renewable electricity from 2021. And by 2030, we are set to reduce our CO_2 emissions by 90 percent. These are ambitious and challenging targets, but we see no alternative if we are to play our part in meeting the goals of the Paris Climate Agreement.

Our success is due in no small part to our customers. They expect us to do business in line with ecologically sound and sustainable principles. Living up to these expectations is crucial, because failing to do so will only be detrimental to our long-term success. That’s why customers trust in us.

The confidence you place in us was evident once again in 2019. In mobile communications, we won more than 540,000 customers in Germany alone under our Telekom and congstar brands. In the United States, our subsidiary T-Mobile US continued to make history on the back of its hugely successful Un-carrier strategy, setting a record of 27 consecutive quarters of more than 1 million net customer additions. Growth of this size is unprecedented in the mobile communications sector and sends a clear signal to our national competitors.

We set two clear priorities: First, it's important to us that we treat our customers well, take them and their concerns seriously, and always put them first. Second, we want to offer customers the best-quality networks. We did this in eleven of our twelve footprint countries in 2019, and continue to work intensively on further building out our networks. In Germany alone, we added some 1,800 cell sites compared with this time last year. This puts us well on schedule, and our 5G network is already transmitting data at speeds of up to 1 Gbit/s in eight German cities: Berlin, Bonn, Darmstadt, Munich, Cologne, Frankfurt/Main, Hamburg, and Leipzig. By the end of 2020, we intend to cover the 20 largest cities across Germany with 5G. While this is all well and good, we need to pick up the pace of the build-out if Germany is to get in shape for the digital future. That is what we promised our customers we would do, and that's what we'll need to measure ourselves against. But 5G isn't our sole focus. At present, our LTE network reaches 98.1 percent of households in Germany – and improving coverage further is the aim of our initiative “Wir jagen Funklöcher” (hunting down dead zones). It's been extremely well received: to date, over 530 municipalities have responded and submitted an application for a new cell site.

We are also making good progress with the network build-out in other countries. In December, T-Mobile US launched the country's first nationwide 5G network using 600 MHz spectrum, reaching more than 200 million people in the United States. T-Mobile Austria put the first 5G cell sites into operation back in March. The number of 5G base stations connected to Austria's 5G mobile network has since risen to 31.

Our customers also have high expectations of Deutsche Telekom's customer service. And we live up to them, winning seven of the eight most coveted customer service accolades in Germany. For 2020, our stated goal is to win the Service Grand Slam – all eight.

Before I finish, I'd like to emphasize once again that Deutsche Telekom is a global, diverse, and successful company. The keys to this success are our customers, our shareholders, and, not least, our employees. More than 200,000 people are committed to serving our customers every day. To achieving our ambitious goals, and to making our Company better in every way. To them, I would like to say a huge thank you. More than anything, our success is the success of our employees. As my U.S. colleagues always say, it's: “Because they get things done!”

DEAR SHAREHOLDERS,

We have already set the bar for the next few years. 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. 2019 shows that we are well on track to meeting these targets.

We want you to benefit from our successes. That's why we are proposing a dividend of EUR 0.60 per dividend-bearing share for the 2019 financial year – subject, as always, to approval by the relevant bodies and the fulfillment of other legal requirements. That's because Deutsche Telekom is a dependable partner in this respect too.

Best regards,

Tim Höttges

SUPERVISORY BOARD'S REPORT TO THE 2020 SHAREHOLDERS' MEETING

The 2019 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. Good business development on the domestic German market and in Europe, and continued excellent business development in the United States were major features. Deutsche Telekom in general remains under high competitive and regulatory pressure. The Group held its own in the challenging environment in the telecommunications industry. Strong results brought the 2019 financial year to a successful close. The Group continues to grow. The Supervisory Board exercised its functions as an advisory and supervisory body and gave the Board of Management its full support.

SUPERVISORY BOARD'S ACTIVITIES IN THE 2019 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, 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 2019 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 2019 financial year, four Supervisory Board meetings, a one-day off-site conference, and 27 meetings of the Supervisory Board committees took place. The overall attendance rate was around 97 percent. Each of the Supervisory Board members attended more than half of the meetings of the Supervisory Board and the respective committees on which they sit. Members unable to attend the meeting usually participated in resolutions by submitting their voting instructions in writing.

> An overview of the number of meetings attended by the individual members of the Supervisory Board is provided in the table entitled "Number of meetings attended by the individual members."

Written votes were used where resolutions were required between the meetings.

In the meeting on February 20, 2019, in the presence of the external auditor, we primarily dealt with the Company's 2018 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), including the combined non-financial (Group) statement contained in the combined management report as a separate section. Our approval of the 2018 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 resolved to reappoint Srini Gopalan for the Europe Board department, we approved the agenda of the 2019 shareholders' meeting, and we dealt with several other 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 acknowledged the reports on Deutsche Telekom's new climate strategy and the 10th anniversary of the Data Privacy Advisory Board.

In the meeting on May 22, 2019, 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 2019. Following acknowledgment, we discussed the report on the current status of the planned business combination of T-Mobile US with the mobile communications provider Sprint, the 5G spectrum auction in Germany, and the broadband build-out in Germany in detail. We also resolved a change to the Board of Management's schedule of responsibilities to accommodate a planned reorganization of the units assigned to the

Board department for Data Privacy, Legal Affairs and Compliance, and we dealt with the quarterly Group risk report. Furthermore, we adopted a resolution on the transfer of Deutsche Telekom AG's stake in Ströer SE & Co. KGaA to Deutsche Telekom Trust e.V.

In the meeting on September 4, 2019, 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 2019. We also intensively discussed the Board of Management compensation system. We approved the introduction of a clawback provision and share ownership guidelines into the Board of Management members' contracts. We also adopted a resolution on the realignment of T-Systems. In addition, we agreed to extend Adel Al-Saleh's contract as a member of the Board of Management. We acknowledged the report on the HR strategy and discussed further potential for development. Further reports submitted to us related in particular to the current status of the planned business combination of T-Mobile US with Sprint, the conclusion of the 5G spectrum auction in Germany, and to the latest regulatory developments.

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. In addition, we looked closely at T-Mobile US' operations and the telecommunications market in the United States.

In our meeting on December 18, 2019, we adopted resolutions on a variety of Board of Management compensation topics, such as target achievement for variable remuneration. 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 2019. A further focus of the meeting was the resolution on the budget and on the annual financing plan for the 2020 financial year. We also acknowledged the medium-term planning for 2020 to 2023 and dealt with the Group risk report. Additionally, we looked at the outcome of the invitation to tender for the auditing of the annual and consolidated financial statements and other auditing services from the 2021 financial year onwards.

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 through 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 from the external auditors, 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

General Committee

- Prof. Dr. Ulrich Lehner (Chairman)
- Josef Bednarski
- Dr. Rolf Bösinger
- Lothar Schröder

Finance Committee

- Karl-Heinz Streibich (Chairman)
- Dr. Günther Bräunig
- Nicole Koch
- Dagmar P. Kollmann
- Frank Sauerland
- Karin Topel

Audit Committee

- Dagmar P. Kollmann (Chairwoman)
- Josef Bednarski
- Dr. Rolf Bösinger
- Prof. Dr. Michael Kaschke
- Petra Steffi Kreusel
- Sibylle Spoo

Staff Committee

- Lothar Schröder (Chairman)
- Josef Bednarski
- Prof. Dr. Ulrich Lehner
- Margret Suckale

Nomination Committee

- Prof. Dr. Ulrich Lehner (Chairman)
- Dr. Rolf Bösinger
- Dagmar P. Kollmann

Mediation Committee
- Prof. Dr. Ulrich Lehner (Chairman)
- Josef Bednarski
- Dr. Rolf Bösinger
- Lothar Schröder

Technology and Innovation Committee
- Lothar Schröder (Chairman)
- Odysseus D. Chatzidis
- Lars Hinrichs
- Nicole Seelemann-Wandtke
- Karl-Heinz Streibich
- Margret Suckale

Special Committee for U.S. Business
- Prof. Dr. Ulrich Lehner (Chairman)
- Dr. Günther Bräunig
- Constantin Greve
- Dr. Helga Jung
- Lothar Schröder
- Sibylle Spoo

Special Committee on the Acquisition of Spectrum in Germany (from January 1, 2019 to June 12, 2019)
- Prof. Dr. Ulrich Lehner (Chairman)
- Josef Bednarski
- Lothar Schröder
- Karl-Heinz Streibich

The **General Committee** met eight times in 2019, 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. Among other things, the committee reviewed the compensation system and the appropriateness of Board of Management remuneration as scheduled. Succession planning for the Board of Management was also discussed in the meeting. In the joint meeting with the Finance Committee, the General Committee dealt in particular with the 2020 budget and the medium-term planning for 2020 to 2023.

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 2020 annual financing plan in particular.

The **Audit Committee** met five times in 2019. The external auditor was present at all of these meetings. The Audit Committee's area of responsibility is defined by German legislation and the German Corporate Governance Code. It includes, in particular, the monitoring 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 us about our suggestion for the external auditor to be nominated by the 2019 shareholders' meeting. The Audit Committee also regularly discussed the quarterly reports on business development. Additionally, the Audit Committee continually shaped and supervised the tendering process it had initiated in 2019 for the auditing of the annual and consolidated financial statements and other auditing services from the 2021 financial year onwards. Furthermore, the Audit Committee commissioned PricewaterhouseCoopers GmbH Wirtschaftsprüfungsgesellschaft, Frankfurt/Main, with a limited assurance engagement on the combined non-financial statement contained within the combined management report. In the 2019 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 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 cybersecurity situation. 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. Outside of its meetings, the Audit Committee members attended a deep dive workshop on the risk management system.

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 2019 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 2020 budget. The committee also dealt with topics such as the HR strategy, the women's quota, and talent management. In addition, the Staff Committee looked in detail at the results of employee surveys.

The **Nomination Committee** met once in 2019, and dealt in its meeting with succession planning for the Supervisory Board.

The **Mediation Committee** to be formed in accordance with § 27 (3) of the Codetermination Act did not meet in 2019.

The **Technology and Innovation Committee** held three meetings in 2019 and dealt with a very broad range of topics from a variety of areas. For example, the committee discussed trends and strategic approaches, 5G, the transformation of the Technology and Innovation Board department, 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** held two meetings in 2019 and primarily discussed the planned business combination of T-Mobile US and mobile communications provider Sprint.

The **Special Committee on the Acquisition of Spectrum in Germany** was constituted from January 1 through June 12, 2019. The committee was kept updated by the Board of Management regarding the Federal Network Agency's 5G auction in Germany and provided guidance and advice in this context. The Special Committee on the Acquisition of Spectrum in Germany was dissolved upon conclusion of the 5G auction on June 12, 2019.

Number of meetings attended by the individual members

Member of the Supervisory Board	Meeting	Attendance	Attendance rate in %
Prof. Dr. Lehner, Ulrich			
	Supervisory Board plenary meeting/off-site conference	5/5	100%
	General Committee	8/8	100%
	Staff Committee	2/2	100%
	Nomination Committee	1/1	100%
	Special Committee for U.S. Business	2/2	100%
	Special Committee on the Acquisition of Spectrum in Germany[a]	3/3	100%
	Total	**21/21**	**100%**
Schröder, Lothar			
	Supervisory Board plenary meeting/off-site conference	5/5	100%
	General Committee	8/8	100%
	Staff Committee	2/2	100%
	Technology and Innovation Committee	3/3	100%
	Special Committee for U.S. Business	2/2	100%
	Special Committee on the Acquisition of Spectrum in Germany[a]	3/3	100%
	Total	**23/23**	**100%**
Bednarski, Josef			
	Supervisory Board plenary meeting/off-site conference	5/5	100%
	General Committee	8/8	100%
	Audit Committee	5/5	100%
	Staff Committee	2/2	100%
	Special Committee on the Acquisition of Spectrum in Germany[a]	3/3	100%
	Total	**23/23**	**100%**
Dr. Bösinger, Rolf			
	Supervisory Board plenary meeting/off-site conference	5/5	100%
	General Committee	7/8	88%
	Audit Committee	5/5	100%
	Nomination Committee	1/1	100%
	Total	**18/19**	**95%**
Dr. Bräunig, Günther			
	Supervisory Board plenary meeting/off-site conference	4/5	80%
	Finance Committee	3/3	100%
	Special Committee for U.S. Business	2/2	100%
	Total	**9/10**	**90%**
Chatzidis, Odysseus D.			
	Supervisory Board plenary meeting/off-site conference	5/5	100%
	Technology and Innovation Committee	3/3	100%
	Total	**8/8**	**100%**

[a] Constituted from January 1, 2019 to June 12, 2019.

Member of the Supervisory Board	Meeting	Attendance	Attendance rate in %
Greve, Constantin			
	Supervisory Board plenary meeting/off-site conference	5/5	100%
	Special Committee for U.S. Business	2/2	100%
	Total	**7/7**	**100%**
Hinrichs, Lars			
	Supervisory Board plenary meeting/off-site conference	4/5	80%
	Technology and Innovation Committee	2/3	67%
	Total	**6/8**	**75%**
Dr. Jung, Helga			
	Supervisory Board plenary meeting/off-site conference	5/5	100%
	Special Committee for U.S. Business	2/2	100%
	Total	**7/7**	**100%**
Prof. Dr. Kaschke, Michael			
	Supervisory Board plenary meeting/off-site conference	5/5	100%
	Audit Committee	2/5	40%
	Total	**7/10**	**70%**
Koch, Nicole			
	Supervisory Board plenary meeting/off-site conference	5/5	100%
	Finance Committee	3/3	100%
	Total	**8/8**	**100%**
Kollmann, Dagmar P.			
	Supervisory Board plenary meeting/off-site conference	5/5	100%
	Audit Committee	5/5	100%
	Finance Committee	3/3	100%
	Nomination Committee	1/1	100%
	Total	**14/14**	**100%**
Kreusel, Petra Steffi			
	Supervisory Board plenary meeting/off-site conference	5/5	100%
	Audit Committee	5/5	100%
	Total	**10/10**	**100%**
Krüger, Harald			
	Supervisory Board plenary meeting/off-site conference	5/5	100%
	Total	**5/5**	**100%**
Sauerland, Frank			
	Supervisory Board plenary meeting/off-site conference	5/5	100%
	Finance Committee	3/3	100%
	Total	**8/8**	**100%**
Seelemann-Wandtke, Nicole			
	Supervisory Board plenary meeting/off-site conference	5/5	100%
	Technology and Innovation Committee	3/3	100%
	Total	**8/8**	**100%**
Spoo, Sibylle			
	Supervisory Board plenary meeting/off-site conference	5/5	100%
	Audit Committee	4/5	80%
	Special Committee for U.S. Business	2/2	100%
	Total	**11/12**	**92%**
Streibich, Karl-Heinz			
	Supervisory Board plenary meeting/off-site conference	5/5	100%
	Finance Committee	3/3	100%
	Technology and Innovation Committee	3/3	100%
	Special Committee on the Acquisition of Spectrum in Germany[a]	3/3	100%
	Total	**14/14**	**100%**
Suckale, Margret			
	Supervisory Board plenary meeting/off-site conference	5/5	100%
	Staff Committee	2/2	100%
	Technology and Innovation Committee	3/3	100%
	Total	**10/10**	**100%**

[a] Constituted from January 1, 2019 to June 12, 2019.

Member of the Supervisory Board	Meeting	Attendance	Attendance rate in %
Topel, Karin			
	Supervisory Board plenary meeting/off-site conference	5/5	100%
	Finance Committee	3/3	100%
	Total	**8/8**	**100%**

[a] Constituted from January 1, 2019 to June 12, 2019.

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, 2019.

For further information on the Company's corporate governance, please refer to the Corporate Governance Report 2019.

CHANGES IN THE COMPOSITION OF THE BOARD OF MANAGEMENT

The profiles of all Board of Management members are available at https://www.telekom.com/en/investor-relations/management-and-corporate-governance/board-of-management

At its meeting on February 21, 2018, the Supervisory Board of Deutsche Telekom AG resolved to extend Timotheus Höttges' contract as Chairman of the Board of Management by five years. Timotheus Höttges was reappointed as Chairman of the Board of Management effective January 1, 2019. Also at its meeting on February 21, 2018, the Supervisory Board of Deutsche Telekom AG resolved to appoint Dr. Christian P. Illek as the new Board member responsible for Finance (CFO) effective January 1, 2019.

At its meeting on July 13, 2018, the Supervisory Board of Deutsche Telekom AG resolved to appoint Birgit Bohle as the new Board of Management member responsible for Human Resources and as Labor Director effective January 1, 2019. Birgit Bohle succeeded Dr. Christian P. Illek in this position.

At its meeting on September 4, 2018, the Supervisory Board of Deutsche Telekom AG resolved to extend the Group Board of Management by setting up the Board department USA and Group Development. The new Board department has been headed up by Thorsten Langheim since January 1, 2019.

On February 20, 2019, the Supervisory Board resolved to reappoint Srini Gopalan as the Board member responsible for the Europe Board department for the period from January 1, 2020 through December 31, 2024.

At its meeting on May 22, 2019, the Supervisory Board resolved to dissolve the Board of Management department for Data Privacy, Legal Affairs and Compliance effective March 31, 2020 to coincide with the end of Dr. Thomas Kremer's term of office, and it also resolved to reassign the department's individual units to other Board departments effective January 1, 2020: The Data Privacy, Legal Affairs, and Compliance units were assigned to the HR Board department, which was renamed Human Resources and Legal Affairs as of January 1, 2020. The Risk Management and Internal Audit units were assigned to the Finance Board department, and Security was assigned to the Technology and Innovation Board department. As the Board member responsible for Data Privacy, Legal Affairs and Compliance, Dr. Kremer is overseeing the transition of these units to their receiving departments from January 1, 2020 until his departure from the Company.

In a resolution of September 4, 2019, Adel Al-Saleh's original three-year appointment was extended by a further two years through December 31, 2022.

CHANGES IN THE COMPOSITION OF THE SUPERVISORY BOARD

> The profiles of all Supervisory Board members are available at https://www.telekom.com/en/investor-relations/management-and-corporate-governance/supervisory-board

Shareholders' representatives. After being appointed to the Supervisory Board of Deutsche Telekom AG by the Bonn District Court until the end of the shareholders' meeting, succeeding Dr. Johannes Geismann effective June 1, 2018, the shareholders' meeting on March 28, 2019 elected Dr. Rolf Bösinger to the Supervisory Board of Deutsche Telekom AG until the end of the 2024 shareholders' meeting.

At the shareholders' meeting on March 28, 2019, Lars Hinrichs was elected for a further term of office as a member of the Supervisory Board of Deutsche Telekom AG until the end of the 2024 shareholders' meeting.

At the shareholders' meeting on March 28, 2019, Karl-Heinz Streibich was elected for a further term of office as a member of the Supervisory Board of Deutsche Telekom AG until the end of the 2024 shareholders' meeting.

REVIEW OF THE ANNUAL FINANCIAL STATEMENTS OF THE PARENT COMPANY AND THE CONSOLIDATED FINANCIAL STATEMENTS FOR THE 2019 FINANCIAL YEAR

The Board of Management submitted the annual financial statements, the consolidated financial statements, and the Group management report, of which the latter is combined with the management report of Deutsche Telekom AG (combined management report) and includes the non-financial (Group) statement as a separate section, together with its proposal for the appropriation of net income, to us in good time.

PricewaterhouseCoopers GmbH Wirtschaftsprüfungsgesellschaft, Frankfurt/Main, which was appointed as auditor of the single-entity financial statements and auditor of the consolidated financial statements (external auditor) for the 2019 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, 2019, which were prepared 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, 2019, 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. The auditor also issued an unqualified audit opinion for the combined non-financial statement contained in the combined management report.

Before the Audit Committee passed a resolution on its recommendation to the Supervisory Board for the proposal for election to be submitted to the shareholders' meeting, the external auditor confirmed that there are no business, financial, personal or other relationships between itself, its corporate bodies, and audit managers on the one hand, and the Company and its corporate body members on the other that may cast doubt on its independence. The auditor also stated to what extent non-audit services were rendered for the Company in the previous financial year and to what extent such services have been contracted for the following year. On this basis, the Audit Committee verified and confirmed the external auditor's requisite independence. It informed us of the outcome of this review before we prepared our resolution to propose to the shareholders' meeting the election of said independent auditor.

The external auditor also confirmed to the Audit Committee and the Supervisory Board in their financial statement review meetings on February 17 and February 18, 2020, 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 17, 2020, the Audit Committee informed us about its monitoring of the 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 financial statements (including the combined non-financial statement), the external auditor's audit report, and the Board of Management's proposal for the appropriation of net income were made available to all members of the Supervisory Board in good time.

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 (including the combined non-financial statement contained therein), 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 17, 2020. 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 report were compliant. In particular, its members had assured themselves that the audit report and the audit conducted by the independent 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 same applies to 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 including 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, including the combined non-financial statement, as well as the Board of Management's proposal for the appropriation of net income, at the Supervisory Board meeting on February 18, 2020, taking into account the report and recommendations of the Audit Committee and the external auditor's audit report. 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 report, 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. We followed the Audit Committee's recommendation and approved the result of the external auditor's audit. The same applies to the combined non-financial statement.

Based on the final outcome of our review of the annual financial statements, the consolidated financial statements, and the combined management report, including 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 approval 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, including the combined non-financial statement. It followed the Audit Committee's recommendation and approved these documents.

When dealing with the budget and medium-term planning on December 18, 2019, 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 17, 2020, and by the Supervisory Board on February 18, 2020. The external auditor was present at both meetings. We followed the Audit Committee's recommendation to approve and support the Board of Management's proposal to pay out shareholder remuneration of around EUR 2,846 million and to carry forward EUR 2,614 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 2019 financial year.

Bonn, February 18, 2020
The Supervisory Board

Prof. Dr. Ulrich Lehner
Chairman

CORPORATE GOVERNANCE REPORT 2019

In the following text, the Board of Management and the Supervisory Board report on corporate governance at Deutsche Telekom AG in accordance with Section 3.10 of the German Corporate Governance Code. This Corporate Governance Report is published together with the Corporate Governance Statement in accordance with § 289f HGB, which is published on Deutsche Telekom's website.

Corporate Governance Statement in accordance with § 289f HGB

Sound, systematic corporate governance is particularly important for an international group such as Deutsche Telekom with its many subsidiaries and associates. The Company complies with legal requirements, national provisions, such as the recommendations of the Government Commission on the German Corporate Governance Code, as well as with international standards. The Board of Management and the Supervisory Board are convinced that sound corporate governance, taking company and industry-specific issues into account, is an important building block for the future success of Deutsche Telekom AG. Accordingly, responsibility for compliance with the principles of sound corporate governance is vested in senior management.

In the 2019 financial year, the Board of Management and Supervisory Board once again carefully examined the corporate governance of Deutsche Telekom AG and the Deutsche Telekom Group as well as the contents of the German Corporate Governance Code. During the reporting period just ended, as in prior years, Deutsche Telekom AG again fulfilled all of the Code's recommendations. The Supervisory Board and Board of Management of Deutsche Telekom AG therefore issued an unqualified Declaration of Conformity with the German Corporate Governance Code on December 30, 2019:

DECLARATION OF CONFORMITY PURSUANT TO § 161 OF THE GERMAN STOCK CORPORATION ACT

I. The Board of Management and Supervisory Board of Deutsche Telekom AG hereby declare that, in the period since the issuance of the most recent declaration of conformity pursuant to § 161 of the Stock Corporation Act (Aktiengesetz – AktG) on December 30, 2018, Deutsche Telekom AG has complied with the recommendations of the Government Commission on the German Corporate Governance Code published by the Federal Ministry of Justice and Consumer Protection on April 24, 2017 in the official section of the Federal Gazette (Bundesanzeiger), without exception.
II. The Board of Management and Supervisory Board of Deutsche Telekom AG hereby declare further that Deutsche Telekom AG has complied with the recommendations of the Government Commission on the German Corporate Governance Code, published by the Federal Ministry of Justice and Consumer Protection in the official section of the Federal Gazette (Bundesanzeiger) on April 24, 2017, without exception.

The Declaration of Conformity can also be found on the website of Deutsche Telekom AG. This website also provides access to the declarations of conformity from previous years.

Declaration of Conformity

COOPERATION BETWEEN THE BOARD OF MANAGEMENT AND THE SUPERVISORY BOARD

The Board of Management and the Supervisory Board work closely together for the good of the Company and maintain regular contact. The Board of Management agrees the Company's strategic alignment with the Supervisory Board and discusses the status of strategy implementation with the Supervisory Board at regular intervals. The Supervisory Board of Deutsche Telekom AG holds a minimum of four meetings a year. In the 2019 financial year, there were four Supervisory Board meetings and a one-day off-site conference on the strategic alignment of the Company. In addition, 27 Supervisory Board committee meetings were held. The Board of Management keeps the Supervisory Board fully and regularly informed in good time on corporate strategy, planning, business developments, the risk situation, risk management, compliance, innovation focuses, and any deviations in the business developments from original plans, as well as significant business transactions involving the Company and major Group companies. The Board of Management submits specific transactions to the Supervisory Board that are of fundamental importance and require its approval as defined. The Board of Management regularly submits written and oral reports. Between meetings, the Board of Management also informs the Supervisory Board of the current business development of the Group and its segments on a monthly basis. The Board of Management reports to the Supervisory Board on individual issues in writing or in discussions. The information and reporting obligations of the Board of Management specified by the Supervisory Board go beyond statutory requirements. The activities of the Board of Management and the Supervisory Board, as well as the Audit Committee of the Supervisory Board, are specified in separate Rules of Procedure. Those that govern the Board of Management provide guidance on its schedule of responsibilities and the majorities required for resolutions, among other matters. The Chairmen of the two Boards also exchange information regularly in person.

For further information on cooperation between the Board of Management and the Supervisory Board, please refer to the section "Supervisory Board's report to the 2020 shareholders' meeting."

COMPOSITION OF THE BOARD OF MANAGEMENT

Up until the end of 2019, the Board of Management's schedule of responsibilities stated that there were nine Board departments: the department of the Chairman of the Board of Management; Finance; USA and Group Development; Human Resources; Data Privacy, Legal Affairs and Compliance; T-Systems; Germany; Technology and Innovation; and Europe. Effective January 1, 2020, the individual units of the Data Privacy, Legal Affairs and Compliance Board department were reassigned to the Finance, Technology and Innovation, and Human Resources Board departments. The former Human Resources Board department will continue to operate as a Board department under the new designation Human Resources and Legal Affairs. As of April 1, 2020, the Data Privacy, Legal Affairs and Compliance Board department will be dissolved and the Board of Management thus reduced from nine to eight Board departments. Each Board of Management member is authorized to manage the sphere of responsibility allocated to him or her. Certain matters are subject to approval by the full Board of Management. Furthermore, every Board member can submit matters to the full Board of Management for decision. Members of the Board of Management should not be older than 65 years of age (standard age limit). In September 2015, the Supervisory Board set out target figures for the number of women on the Board of Management. The Supervisory Board set a short initial deadline for implementation at the end of 2015 within which the current proportion of women on the Board of Management (1 of 7) was to remain stable. The Supervisory Board also resolved that the proportion of women should increase to 2 of 7 within the second implementation period by the end of 2020.

For further information on the women's quota, please refer to the Corporate Governance Statement at www.telekom.com/en/investor-relations/management-and-corporate-governance

COMPOSITION OF THE SUPERVISORY BOARD

The Supervisory Board of Deutsche Telekom AG consists of twenty members, ten representing the shareholders and ten representing the employees. The Supervisory Board members representing the shareholders are elected by the shareholders' meeting by simple majority. As in previous years, elections to the Supervisory Board were for individual members held at the last shareholders' meeting on March 28, 2019. For each candidate proposed to the shareholders' meeting on March 28, 2019, a résumé was included with the agenda containing relevant details of their expertise, skills, and experience, as well as their most important activities next to the Supervisory Board mandate. The standard five-year terms of office of the individual Supervisory Board members representing the shareholders end on different dates. This ensures continuity regarding the Supervisory Board's composition. The Supervisory Board members representing employees were most recently elected at the delegates' assembly on November 20, 2018, according to the provisions of the German Codetermination Act (Mitbestimmungsgesetz – MitbestG). The résumés of all Supervisory Board members are published on the Deutsche Telekom website and updated annually.

For further information on changes to the composition of the Supervisory Board, please refer to the section "Supervisory Board's report to the 2020 shareholders' meeting."

As for its composition, the Supervisory Board has set itself the following objectives:

- Taking into account the Company's specific situation, the Supervisory Board resolves to consider the aspect of diversity in addition to the requisite expertise of a candidate when issuing recommendations for future appointments to the Supervisory Board to the competent election bodies.
- The Supervisory Board has to be composed in such a way that its members as a group possess the knowledge, ability, and expert experience required to properly perform its tasks.
- The Supervisory Board supports an appropriate degree of women's representation on the Supervisory Board. A minimum of 30 percent of members of the Supervisory Board shall be women.
- In view of the Company's international focus, candidates with an international background are to be given appropriate consideration in future appointments to the Supervisory Board.
- Conflicts of interest are to be avoided in appointments to the Supervisory Board.
- The term of office for members of the Supervisory Board shall end no later than the close of the shareholders' meeting after the Supervisory Board member reaches the age of 75 unless there are special reasons for this not to be the case (standard age limit).
- A regular limit of three terms of office shall apply for membership on the Supervisory Board. Appointments by court order that are limited until the next shareholders' meeting shall not, however, be considered a term of office.
- The Supervisory Board shall include at least sixteen members who are independent within the meaning of Section 5.4.2 of the German Corporate Governance Code. It is assumed that those Supervisory Board members elected in accordance with the Codetermination Act are independent in principle as defined. On the shareholders' representative side, at least six members of the Supervisory Board must therefore be independent.

The Supervisory Board considers the following skills, expertise and knowledge to be essential for it to exercise its role (profile of skills and expertise):

1. Strategic skills and expertise
- TC/IT industry, related industries
- Market (competition and customers), sales, and customer business
- Products
- Market participants
- Regulated industries
- M&A processes

2. Financial skills and expertise
- Accounting processes, risk management, audit of financial statements
- Financial KPIs and systems
- Capital and financial markets

3. Control skills and expertise
- Management/CEO
- Supervisory board
- International management experience
- Codetermination
- Legal affairs/compliance
- Regulatory and competition law

4. Innovation skills and expertise
- New technologies
- Digitalization
- IT/NT/telecommunications

5. Sustainability expertise, social skills
- Human resources
- Change management
- Organizational and cultural change
- Diversity
- Sustainability

Achievement level of the Supervisory Board membership targets and adherence to the stipulations of the skills and expertise profile:

The proportion of women on the Supervisory Board remained at 40 percent throughout the 2019 financial year. This thus meets the 30 percent minimum representation target for women members of the Supervisory Board, which is now a legal requirement.

The Supervisory Board is composed in such a way that its members as a group possess the knowledge, ability, and expert experience required to properly perform its tasks. The members of the Supervisory Board represent various different professions and many of them have a multinational background. The avoidance of conflicts of interest and compliance with the standard age limit and the regular limit on terms of office were taken into consideration in the appointments to the Supervisory Board.

The Supervisory Board is convinced that, as a whole, it meets the stipulations of the profile of skills and expertise.

Furthermore, the proposals for election took account of the targets resolved by the Supervisory Board for its own composition as well as the skills and expertise profile drawn up by the Supervisory Board for itself as a whole.

With the election of Dr. Rolf Bösinger by the shareholders' meeting, the Supervisory Board gained an expert with many years of experience in financial statement analysis, equity investments, corporate social responsibility, internal auditing, finance management, human resources, labor relations, and innovation. Dr. Bösinger gained this expertise in a number of leadership positions within the federal ministries, the Saarland State Chancellery, and the Senate Chancellery and the Authority for Economic Affairs, Transport and Innovation of the Free and Hanseatic City of Hamburg. In 2018, he stepped into the role of State Secretary at the Federal Ministry of Finance.

With the election of Lars Hinrichs by the shareholders' meeting, the Supervisory Board gained a venture capital specialist with many years of experience in business model development and strategic partnerships. Lars Hinrichs also has a strong background in entrepreneurship, social networking, social media, and e-commerce as the founder and CEO of XING AG, later going on to become a member of its supervisory board.

With the election of Karl-Heinz Streibich by the shareholders' meeting, the Supervisory Board gained an expert with many years of experience, in particular in the areas of IT services and telecommunications services. Karl-Heinz Streibich has an extensive background in leading international IT/software enterprises as CEO of Software AG, member of the Board of Management of T-Systems, and CEO of debis Systemhaus GmbH, among others.

The Supervisory Board is convinced that – in accordance with the recommendation of the German Corporate Governance Code – it has an appropriate number of independent members to provide impartial advice to and monitor the Board of Management.

The Supervisory Board believes that Lars Hinrichs, Dr. Helga Jung, Prof. Michael Kaschke, Dagmar P. Kollmann, Harald Krüger, Prof. Ulrich Lehner, Karl-Heinz Streibich, and Margret Suckale are independent Supervisory Board members within the meaning of the German Corporate Governance Code.

The Supervisory Board will continue to ensure that the candidates proposed for election at the shareholders' meeting can dedicate the required amount of time to their Supervisory Board tasks at Deutsche Telekom AG.

TASKS ASSIGNED TO THE SUPERVISORY BOARD

The Supervisory Board appoints the members of the Board of Management and regularly supervises its management of the Company. The Supervisory Board is directly involved in all decisions of strategic importance to the Company. This involvement is guaranteed through the specification of approval provisos for the Supervisory Board and through the agreement of the strategic alignment of the Company. The work of the Supervisory Board is specified in Rules of Procedure. To clarify the reporting obligations on the part of the Board of Management, the Supervisory Board has drawn up a list of transactions subject to approval. This list forms an integral part of the Rules of Procedure for the Supervisory Board and the Board of Management, respectively. The Supervisory Board and Audit Committee each assess the efficiency of their work every two years, which also provides new impetus for their work on a regular basis. The self-assessment carried out to this end is based on a comprehensive questionnaire followed by intense discussion and consultation on the results by the Supervisory Board and Audit Committee. The Supervisory Board carried out an examination of its efficiency in the 2019 financial year. As well as the work of the Supervisory Board as a whole, this also considered the work of all of the Board's committees. A separate evaluation of the Audit Committee's work was additionally carried out in the 2018 financial year.

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 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, a meeting extraordinary to regular reporting 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.

In order to perform its tasks effectively, the Supervisory Board has nine committees. The General Committee deals with personnel matters relating to the Board of Management and prepares the meetings of the Supervisory Board. The Audit Committee performs the tasks required by law and recommended by the German Corporate Governance Code. These include, in particular, monitoring accounting and the accounting process, the effectiveness of the internal control system, the risk management and internal auditing system, the audit of financial statements, compliance, and data privacy. The Staff Committee deals with general personnel matters not relating to the Board of Management. The Finance Committee deals in particular with the Company's investment planning and focuses, and handles complex financial and commercial business transactions. The Technology and Innovation Committee supports and promotes innovation and technological developments at infrastructure and product level and supports the Board of Management with advice on how to tap new growth areas. Furthermore, the Supervisory Board has formed a Nomination Committee, which consists exclusively of shareholders' representatives. The Nomination Committee is responsible in particular for proposing to the Supervisory Board suitable candidates for the latter to subsequently recommend to the shareholders' meeting for election. In addition, there is a Mediation Committee, which was formed in accordance with § 27 (3) of the Codetermination Act. Furthermore, a Special Committee for U.S. Business was established in May 2014. A temporary Special Committee on the Acquisition of Spectrum in Germany was constituted from January 1, 2019 through June 12, 2019 to supervise the Company's activities as part of the 5G auction proceedings in Germany.

For further information on the composition and working methods of the committees, please refer to the section "Supervisory Board's report to the 2020 shareholders' meeting."

The committees' chairpersons report to the Supervisory Board on a regular basis on the work of the committees. The Chairwoman of the Audit Committee, Dagmar P. Kollmann, 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 Chairman of the Supervisory Board coordinates the work of the Supervisory Board and presides over its meetings. In addition to the organizational tasks relating to the Supervisory Board, he maintains regular contact with the Chairman of the Board of Management and the members of the Board of Management to discuss issues relating to the Company's strategy, planning, business development, the risk situation, risk management, and compliance, and is informed of the general business situation and significant events. In this context, the Chairman of the Board of Management in particular informs the Chairman of the Supervisory Board of all events that are significant to the situation, development, and governance of the Company. If necessary, the Supervisory Board is also informed between meetings.

For further information on the members of the Supervisory Board and any seats they hold on the supervisory boards of other companies, please refer to the section "Boards, seats, and further information."

AVOIDING CONFLICTS OF INTEREST

Board of Management members and Supervisory Board members are obliged to disclose immediately any conflicts of interest to the Supervisory Board. Any functions assumed by members of the Board of Management that are not covered by their Board of Management mandate are subject to approval by the General Committee of the Supervisory Board.

For further information on any conflicts of interest that may have arisen, please refer to the section "Supervisory Board's report to the 2020 shareholders' meeting."

RISK AND OPPORTUNITY MANAGEMENT

The Board of Management and the Supervisory Board consider the approach to the management of opportunities and risks arising in connection with the Company's business activities to be of fundamental importance for professional corporate governance. The Board of Management receives regular reports from the Group's Risk Management unit concerning current risks and their development. In turn, it reports to the Supervisory Board on the risk situation and the risk management system. The risk management system in place at Deutsche Telekom AG is evaluated by the external auditor, and it is constantly being expanded and improved. In addition to the responsibilities assigned by law and those recommended by the German Corporate Governance Code, the Audit Committee also deals with risk management, including the monitoring of the effectiveness of the internal risk management system. The system is designed to manage a variety of risks, including financial risks and risks to the Company's reputation.

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

COMPLIANCE

Compliance involves the observance of legal requirements and internal Group rules. Deutsche Telekom AG has a Group-wide compliance organization that is continuously being improved.

For further information on our compliance organization, please refer to the annual Corporate Responsibility Report at: www.cr-report.telekom.com

There is also a Compliance Committee that supports the Board of Management in further developing the framework for an effective compliance management system. The members of the Compliance Committee are experienced managers in the areas of compliance, legal affairs, security, internal auditing, and human resources. The Chief Compliance Officer, appointed by the Board of Management, chairs the Compliance Committee. A compliance officer has been appointed for each of the operating segments. Individual business units have additional compliance officers/contacts depending on their respective size and risk situation. Clear reporting structures have been implemented throughout the Group.

Deutsche Telekom AG has implemented a comprehensive compliance management system. According to this system, a compliance program is set up based on a structured risk assessment process performed once a year throughout the Group.

For further information on compliance management system, please refer to Deutsche Telekom AG's website: https://www.telekom.com/en/company/compliance

The compliance management system also includes the Code of Conduct, the Code of Ethics, and various policies. The Code of Conduct defines how employees and management should practice value-based and legally compliant conduct in their daily business activities. The Code of Ethics addresses the members of the Board of Management of Deutsche Telekom AG and persons within the Group who carry special responsibility for financial reporting. It obliges these individuals to comply with the principles of honesty, integrity, transparency, and ethical conduct.

The Code of Conduct and the Code of Ethics are published on Deutsche Telekom AG's website: www.telekom.com/en/company/compliance/code-of-conduct; www.telekom.com/en/investor-relations/management-und-corporate-governance

The compliance management system in place at Deutsche Telekom AG and other selected national and international companies was certified as being appropriate and effectively implemented by an external auditor in stages from 2016 through 2018 in accordance with IDW audit standard 980 with the focus on anti-corruption.

INTERNAL CONTROLS OVER FINANCIAL REPORTING

Deutsche Telekom AG has implemented a process to systematically assess the effectiveness of its internal controls over financial reporting. This process again provided evidence of the controls' effectiveness throughout the Group for the 2019 financial year. The Audit Committee assumes the task of monitoring the accounting and financial reporting processes on behalf of the Supervisory Board. The system of internal controls over financial reporting is updated on an ongoing basis and monitored separately by Internal Audit and external auditors. The Audit Committee also monitors the effectiveness of the internal control system, which goes beyond financial reporting.

For a description of the main features of the accounting-related internal control system, please refer to the section "Accounting-related internal control system" in the combined management report.

ACCOUNTING AND AUDIT OF FINANCIAL STATEMENTS

An agreement has been reached with the external auditor of Deutsche Telekom AG that the Chairperson of the Supervisory Board/the Audit Committee shall be advised immediately of any issues uncovered during the audit that might give rise to statements of exclusion or reservation in the external auditor's report, unless these issues can be resolved forthwith. Moreover, it has been agreed that the external auditor shall immediately report any findings and issues that emerge during the audit and that have a direct bearing upon the tasks of the Supervisory Board. According to this agreement, the external auditor undertakes to inform the Supervisory Board or make a note in the audit report of any facts discovered during the audit that might indicate a discrepancy in the Declaration of Conformity submitted by the Board of Management and Supervisory Board with the German Corporate Governance Code. The Audit Committee supervises the independence of the external auditor.

TRANSPARENT SHAREHOLDER COMMUNICATION

We are committed to providing institutional investors, retail shareholders, financial analysts, and the general public with regular, comprehensive, transparent and up-to-date information about the Company's position at the same time and on an equal basis to ensure a high level of transparency and equality of information. Significant information, such as press releases, ad hoc notifications, presentations from analyst conferences, all financial reports and the financial calendar, is made available on the Company's websites. Additionally, the Chairman of the Supervisory Board once again made himself available to investors to discuss matters specific to the Supervisory Board.

SHARE OWNERSHIP BY MEMBERS OF THE BOARD OF MANAGEMENT AND THE SUPERVISORY BOARD

Total direct or indirect holdings of shares in the Company or associated financial instruments by members of the Board of Management and the Supervisory Board do not exceed 1 percent of the shares issued by the Company.

Bonn, February 18, 2020
The Supervisory Board and the Board of Management

THE T-SHARE

		2019	2018
XETRA CLOSING PRICES			
Share price on the last trading day	€	14.57	14.82
Year high	€	16.25	15.49
Year low	€	14.10	12.81
TRADING VOLUME			
German exchanges	billions of shares	2.5	3.3
Market capitalization on the last trading day	billions of €	69.4	70.6
WEIGHTING OF THE T-SHARE IN MAJOR STOCK INDEXES ON THE LAST TRADING DAY			
DAX 30	%	4.5	5.8
Dow Jones EURO STOXX 50®	%	1.8	2.2
T-SHARE – KEY FIGURES			
Earnings per share (basic and diluted)	€	0.82	0.46
Proposed dividend	€	0.60	0.70
Number of shares issued	millions, at year-end	4,762	4,761

DEVELOPMENT OF INTERNATIONAL INDEXES

The global stock markets bucked the somewhat sluggish trend of 2018 with significant growth in the 2019 trading year. The stock exchanges remained virtually unaffected by the discussion about rising interest rates at the start of the year, weaker growth outlooks, and ongoing debate surrounding growing levels of protectionism in global trade.

The most important barometer of the German stock market, the DAX, rose by 25.5 percent over the course of the trading year. The Dow Jones EURO STOXX 50© also ended 2019 on a high: On a total return basis – i.e., including reinvested dividends – it reported strong growth of 28.2 percent.

Although somewhat weaker, both the Dow Jones and the Nikkei posted double-digit growth of 22.3 percent and 18.2 percent respectively. The 2019 trading year was dominated by investors seeking attractive investment options beyond fixed-interest securities in the sustained low-interest environment.

T-SHARE PERFORMANCE

Despite the overall positive environment, the development of the European telecommunications sector remained clearly muted. The industry's barometer, the Dow Jones STOXX® Europe 600 Telecommunications, rose 4.4 percent in the course of the stock market year. Share price performance was adversely affected by regulatory discussions and sustained competition on a number of European markets.

In this environment, the T-Share closed the year at EUR 14.57, down by just 1.2 percent. The lowest price recorded during the year was EUR 14.10 on January 25, 2019, while the highest price of EUR 16.25 was recorded on October 23, 2019.

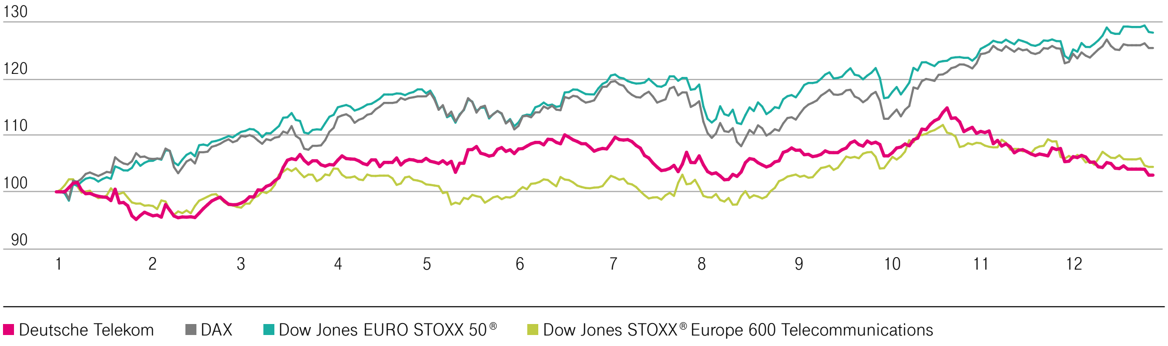
On a total return basis – and thus comparable with the DAX – our share ended the year 2019 up 3.0 percent.

DIVIDEND

The Board of Management and Supervisory Board of Deutsche Telekom AG will propose to this year's shareholders' meeting, to be held on March 26, 2020, the distribution of a dividend of EUR 0.60 per dividend-bearing share.

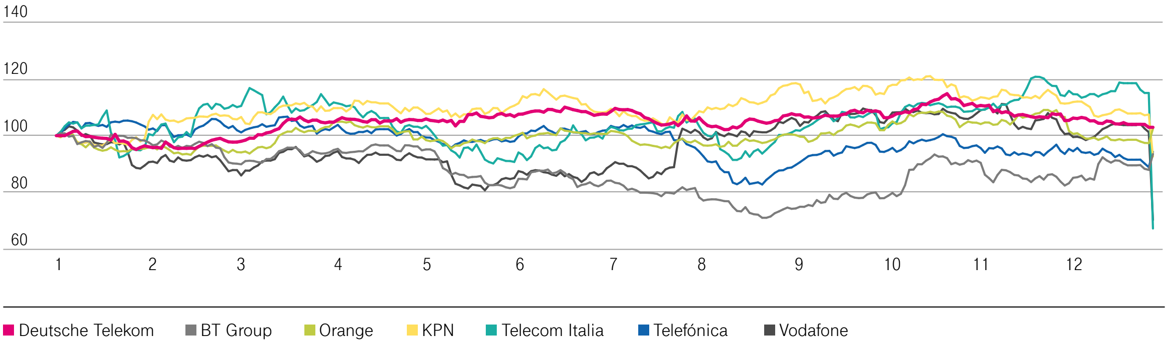
T-Share as compared to DAX, Dow Jones EURO STOXX 50® and Dow Jones STOXX® Europe 600 Telecommunications

January 1 to December 31, 2019 (based on total shareholder return[a])



T-Share as compared to other European telecommunications companies

January 1 to December 31, 2019 (based on total shareholder return[a])



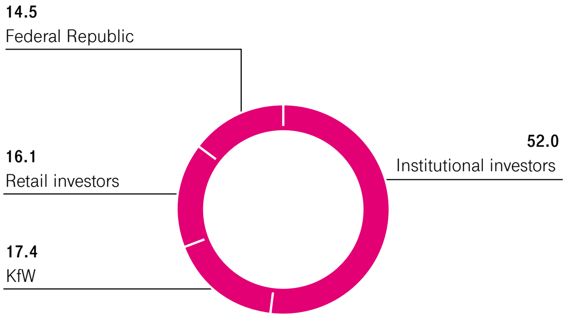
[a] Total shareholder return measures the development in the value of a shareholding over a specific period. It takes into account dividends paid during the investment period along with any changes in share price.

SHAREHOLDER STRUCTURE

The Federal Republic's shareholding, including that of Kreditanstalt für Wiederaufbau (KfW), stands at approximately 32.0 percent. The proportion of institutional investors decreased slightly, to 52.0 percent, while the share of retail investors increased to 16.1 percent. As a result, the percentage of shares in free float remains at around 68 percent of the share capital.

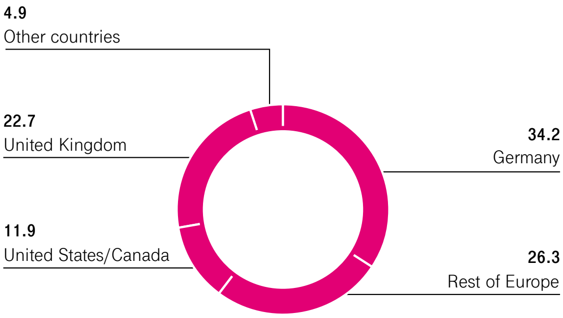
Shareholder structure

% (as of December 31, 2019)



Geographical distribution of free float

% (as of December 31, 2019)



HIGHLIGHTS IN THE 2019 FINANCIAL YEAR

BOARD OF MANAGEMENT

The former Board member responsible for Human Resources (CHRO), Dr. Christian P. Illek, became the new CFO as of January 1, 2019. Birgit Bohle joined the Board of Management on January 1, 2019 as the Board member responsible for Human Resources as successor to Dr. Illek. Thorsten Langheim became a member of the Board of Management at Deutsche Telekom AG as of January 1, 2019, taking up the role of head of the newly created Board of Management department for USA and Group Development. Deutsche Telekom AG thus had nine Board of Management departments in the 2019 financial year.

The Board of Management department for Data Privacy, Legal Affairs and Compliance (DRC) will be 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 Human Resources and Legal Affairs Board of Management department since January 1, 2020, which was extended to include the Data Privacy, Legal Affairs, and Compliance units. From this date until his departure, Dr. Kremer is overseeing the transition of the individual units of his department to the respective target departments in his role as the DRC Board of Management member. Deutsche Telekom AG will thus have eight Board of Management departments as of April 1, 2020.

CORPORATE TRANSACTIONS

On November 27, 2018, the European Commission unconditionally approved the **acquisition of telecommunications provider Tele2 Netherlands Holding N.V.** by T-Mobile Netherlands Holding B.V. and the transaction was consummated on January 2, 2019. Tele2 Netherlands has been included in Deutsche Telekom's consolidated financial statements as a fully consolidated subsidiary since the acquisition date. This transaction will establish a stronger, more sustainable provider of convergent fixed-network and mobile services on the Dutch market.

On January 15, 2019, OTE concluded an agreement concerning the **sale of its stake in Telekom Albania** to the Bulgarian company Albania Telecom Invest AD for a purchase price of EUR 50 million. The transaction was approved by the authorities and then consummated on May 7, 2019.

Consistent with our efforts to implement our Group strategy pillar "Lead in business productivity," we plan to **realign our telecommunications operations for business customers** in 2020 by setting up a new integrated business-to-business unit in the Germany operating segment. This new unit will comprise both the existing Business Customers unit from Telekom Deutschland and the TC Services and Classified ICT units from T-Systems – with the exception of a number of activities assigned to Classified IT project business. In addition, the Deutsche Telekom Global Carrier unit, currently assigned to Deutsche Telekom AG under company law, will be transferred to Telekom Deutschland GmbH in the Germany operating segment. Furthermore, the two portfolio units Security and IoT are to be turned into legally independent Group entities. No additional staff reductions are planned as part of this step.

INVESTMENTS IN NETWORKS SDG 9

5G spectrum won at German auction. We won four frequency blocks in the 2 GHz band and nine lots in the 3.6 GHz band worth a total of EUR 2.17 billion. We therefore acquired the spectrum we need for the planned network build-out. Our 5G build-out activities are well on schedule, and by the end of 2019 our 5G network – which reaches top transmission speeds of up to 1 Gbit/s – was already available in eight German cities: Berlin, Bonn, Darmstadt, Munich, Cologne, Frankfurt/Main, Hamburg, and Leipzig. By the end of 2020, at least 20 of the largest cities in Germany are to be connected to the network.

5G spectrum secured in the United States. The Federal Communications Commission (FCC) has auctioned licenses for the use of millimeter wave (mmWave) spectrum for 5G. Over the course of the two auctions for 28 GHz and 24 GHz spectrum, T-Mobile US paid USD 842.5 million for a total of 367 MHz, thus securing itself a solid mmWave holding for 5G. T-Mobile US launched the United States' first nationwide 5G network in December 2019, offering network coverage to over 200 million people.

T-Mobile Austria launches 5G network. At the 5G spectrum auction in Austria, T-Mobile Austria – which markets its offerings under the Magenta product brand – purchased 110 MHz of spectrum covering all 12 regions (11 packages of 10 MHz in each of them) for a total of EUR 57 million. The company is now in a position to roll out the next-generation communications standard across all of Austria. The auction ended in early March 2019 and resulted in 438 from a total of 468 spectrum packages (39 packages of 10 MHz in each of the twelve regions) being auctioned for a total price of around EUR 188 million. T-Mobile Austria used the spectrum purchased at auction to activate the first 5G base stations in March 2019. The number of 5G base stations connected to the mobile network has since risen to 31. We are also making good progress in other European national companies. In Croatia, for example, a drone transmitted video footage over a 5G network and the first 5G smart bench was presented, while in Poland a 5G test installation was launched. A range of potential applications for 5G have already been tested in the Czech Republic and in North Macedonia.

Fast internet for millions. Our goal is to provide fast internet lines to as many people as possible in rural and urban areas alike. Many new fiber-optic build-out projects in Germany are underway. These include the joint Gigabit project, under which we are working together with partners to offer ultra-fast internet to all businesses in the Stuttgart region by 2025. Through 2030 the plan is also for 90 percent of households to benefit from the build-out. The potential rollout area currently covers 175 municipalities in the Stuttgart area and neighboring districts. In the district of Rostock, more than 44,000 households, 6,100 businesses, and 573 local government buildings, schools, fire departments, local authorities, and institutions in over 70 municipalities will receive one of our fiber-optic lines. With more than 7,200 kilometers of fiber-optic cable, over 1,100 kilometers of civil engineering works, and almost 850 new fiber distribution cabinets, we intend to bring higher bandwidths to this area alone by mid-2021. In the district of Oder-Spree, fiber-optic lines will be laid district-wide for around 8,000 households, almost 200 businesses – primarily on business parks – and 68 schools and educational institutions. The new lines will offer speeds of up to 1 Gbit/s. From the flatlands of the north to the mountains of the south: In June 2019 we connected the village of Balderschwang, known for having the highest town center in Germany, to our high-speed network.

For more details, please refer to our media information.

“Hunting down dead zones.” A new initiative called “Wir jagen Funklöcher” (hunting down dead zones) aims to close 50 gaps in mobile coverage across Germany. Municipalities can get actively involved as partners in our campaign to expand the mobile network. The campaign calls on municipalities, policy-makers, citizens, and local businesses to take the initiative. In return, we build and operate a state-of-the-art LTE site. The initiative runs alongside our standard build-out program to add some 2,000 cell sites each year. The application period began on August 20, 2019 and ended on November 30, 2019. 539 municipalities responded and submitted 624 applications. The first coverage dead zones to be addressed under the program will be eliminated in early 2020. We are set to build up to 10,000 cell sites in total across Germany in the coming four years. At the end of 2019, our LTE network reached 98.1 percent of households.

CORPORATE RESPONSIBILITY

Climate protection target supports Paris Agreement. SDG 13 One of our climate protection targets is to use electricity solely from renewable energy sources Group-wide by 2021. By 2030, we plan to reduce CO_2 emissions by 90 percent compared with 2017. Also by 2030, we want to lower the emissions generated by the production and use of our products and customer solutions by 25 percent. The Science Based Targets initiative (SBTi) confirmed us as the third DAX company whose climate protection targets contribute to compliance with the Paris Climate Agreement. Assuming responsibility for a low-carbon, environmentally friendly society has been one of the three fields of action of Deutsche Telekom’s corporate responsibility strategy since 2008.

For more details, please refer to our media information.

“we care” is making sustainability visible for customers. SDG 9 We take our responsibility for a more sustainable future seriously. To be even more transparent, we launched our “we care” sustainability label to offer guidance and make purchasing decisions easier – particularly helping customers who place a high value on sustainability. It will feature in descriptions of selected Deutsche Telekom products, services, measures, and initiatives. The label has two categories: The “digital participation” (digitale Teilhabe) symbol highlights a positive contribution toward solving social challenges in the digital world. The “we care” symbol relates to the environment, covering products, services, and initiatives that contribute, for example, toward climate protection and responsible use of resources.

For more details, please refer to our media information.

Climate-neutral cell site. SDG 13 This year, we launched a unique project worldwide in the town of Dettelbach. For the first time ever, a cell site is powered permanently by a bio-methanol fuel cell. The fuel cell is not only more efficient and much easier to maintain than a combustion engine, but is also carbon-neutral since it runs on bio-methanol. Fuel cells make it possible for cell sites without mains power to operate around the clock.

Holistic approach to climate protection: scaled-down SIM card creates less plastic waste. SDG 12 We have worked together with our suppliers for many years to bring products to market that are as resource-efficient as possible. For example, we have reduced the size of the SIM punch card by half. As a result, we reduced the amount of plastic waste generated in Germany in the reporting year by 20.8 tons. We are the first German telecommunications company to take this step.

Sustainable smartphones recycling. SDG 12 Some 75 percent of a smartphone’s CO_2 emissions are generated during its production. What is more, mining of the valuable raw materials used in the devices often has environmental impacts. By reusing and recycling smartphones, we can help save precious resources. In 2019, we launched our sustainable smartphone recycling scheme. Not only does it benefit the environment and the climate, but customers buying a new device can opt to trade in a used smartphone hassle-free and save money on the purchase price. We professionally refurbish the units, installing new batteries and screens if required, to give old smartphones a new lease of life and prepare them for resale.

INNOVATION

#DABEI ensures Germany can #TAKEPART. SDG 10 Our booth at this year's IFA in September in Berlin was built around our three-pronged approach of "Best networks, best products, best service" and revealed an abundance of innovations – from the launch of 5G to the Smart Speaker. The #DABEI FESTIVAL showcased our company as a responsible partner with its finger on the pulse of an increasingly digital society. In addition to interactive performances centering on 5G, the fiber-optic rollout, and Magenta products and services, we also offered workshops with experts and pros on coding, gaming, upcycling, and more.

Making drones more secure and efficient. We are working with DFS Deutsche Flugsicherung GmbH on a new technology that uses the mobile network to track unmanned aircraft systems. The joint venture Droniq GmbH is providing a drone tracking platform that will enable drone flights beyond the operator's line of sight in the future. Droniq will initially focus on the German market, before gradually expanding into other European countries. Droniq's primary target market is commercial drone pilots in the infrastructure, surveying, and agricultural sectors who want to fly drones beyond their line of sight – as well as the police, the fire and rescue services, and users from the general aviation field.

Hannover Messe: drones, smart glasses, and smart displays. At Hannover Messe in early April 2019, we showed how "industrial intelligence" can help make planning, production, and logistics more efficient. Large manufacturers and SMEs alike found products and solutions for the smart factory at our booth. Examples included campus networks, 5G, drones, edge computing, smart glasses, smart displays, and artificial intelligence.

For more details, please refer to our media information.

Connectivity up close at MWC. Our booth at the 2019 Mobile World Congress in Barcelona with the theme #TAKEPART showcased the potential of 5G. Spread over an area of 1,200 square meters, consumers and industry representatives alike experienced demonstrations live and up close in a host of different application fields – all on the basis of our networks and technologies. The key message: The network of the future is already opening up a fascinating array of opportunities. As a pioneer, driver, and enabler of the digital transformation, we are laying the foundation that will allow everyone to participate in the new digital world. We welcomed a record number of visitors to our booth at the telecommunication industry's biggest international exhibition.

For more details, please refer to our media information.

For further information on our innovations, please refer to the section "Innovation and product development."

PARTNERSHIPS AND DIALOGS SDG 9

5Germany: talking 5G with the business community. Shaping the digital future actively together with 5G: This was the motto of our 5Germany user conference organized by Handelsblatt and Deutsche Telekom in late September 2019. Numerous board members of large and medium-sized companies joined government representatives at the event in Berlin. Together with them, we discussed specific industrial requirements for 5G. The goal is for network operators, industry, and policy-makers to work shoulder to shoulder on the 5G roll out.

For more details, please refer to our media information.

Campus networks for industry. Campus networks are in high demand in the industrial sector. State-of-the-art mobile communications technology can be used to enhance – or even replace entirely – existing Wi-Fi networks. It offers greater capacities, low latency, and keeps data traffic more secure. We announced a strategic partnership with Ericsson to help enterprise customers revolutionize their on-site infrastructure and address the growing market for smart industrial solutions. Starting 2020, we will also offer new campus network services tailored to the demands of business. Products for corporate customers and SMEs are planned on the back of successful pilot projects at Osram, ZF Friedrichshafen, and BorgWarner (Hungary). 2020 will also see us building 5G campus networks both in the Czech Republic, in cooperation with the Technical University of Ostrava, and in Austria with Graz University of Technology.

For more details, please refer to our media information.

Fiber-optic joint venture with EWE. We have entered into a joint venture agreement with energy and telecommunications company EWE to establish the Glasfaser NordWest joint venture. It aims to provide high-speed internet to up to 1.5 million households and business locations in areas of Lower Saxony, North Rhine-Westphalia, and Bremen on the basis of the fiber-to-the-home (FTTH) technology. We plan to jointly invest up to EUR 2 billion over a period of around ten years. The Federal Cartel Office (Bundeskartellamt) granted its final approval on December 30, 2019 following a review under merger control law.

For more details, please refer to our media information.

T-Systems and Siemens accelerate the digital transformation of German industry. T-Systems and Siemens announced a new partnership in October 2019 that puts the spotlight on the industrial Internet of Things. The partnership will provide industry customers with complete solutions for operational technology, information technology, and telecommunications. These joint digitalization solutions target a broad spectrum of business applications, from enterprise resource planning and customer relationship management to supply chain management, and manufacturing engineering systems.

For more details, please refer to our media information.

Digital X: analog exchange of ideas on digital innovation. As the digital revolution begins to take hold, the Digital X series of events focuses on exchanging ideas and networking. It is the largest cross-industry digitalization initiative in Europe. Several leading companies of the digital age are involved in the initiative. It began its tour across Germany in April 2019 and is making the digital identity of six German regions into something to be experienced. The big finale of Digital X 2019 took place in Cologne on October 29 and 30, attended by companies and decision-makers from all over Germany.

For more details, please refer to our media information.

Municipal Advisory Board on digitalization. In May 2019, we convened the first meeting of the new Municipal Advisory Board. The board, comprising members from local communities and associations, will consult on issues relating to the broadband build-out, 5G, and other digitalization topics. One of the board's central goals is to accelerate the pace of digitalization across Germany. The Municipal Advisory Board provides the framework for direct dialog between the municipalities and Deutsche Telekom. In the future, it will be a platform for discussing ideas, interests, and expectations and for finding a rapid resolution to certain issues.

For more details, please refer to our media information.

Mobile banking service in Croatia. In August 2019, Hrvatski Telekom and Zagrebačka banka introduced Telekom Bankarstvo – a complete mobile banking service – mobile application, checking account, foreign currency account, free transactions, internet banking, and other bank services such as cash and housing loans and savings – of Zagrebačka banka in cooperation with Hrvatski Telekom, which is also the first such cooperation in the Croatian market. The service is available to smartphone users, while special benefits will be available to Hrvatski Telekom users.

Partnership with SK Telecom. Together with SK Telecom we plan to develop 5G network technology and innovative 5G platforms and applications. The primary focus will be on in-house technology for the new mobile communications standard. SK Telecom is one of a number of investors from outside the Group putting capital in the new Venture and Growth Fund II set up by DTCP.

BRAND, PRODUCTS, AND RATE PLANS

MagentaMobil 2019: even more data and 5G included. Our new MagentaMobil rate plans offer even more surfing fun on the best network (connect 1/2020). Launched at the beginning of September 2019, all plans have been topped up with StreamOn flat rates and an additional data allowance, and are ready for the 5G era. The data allowance on the MagentaMobil S plan goes up from 2.5 to 6 gigabytes (GB), on the MagentaMobil M plan it is up from 5 to 12 GB, and the allowance on the MagentaMobil L plan is increasing from 10 to 24 GB. Data is still unlimited on the MagentaMobil XL rate plan. On top of all that, all mobile customers will in future benefit from StreamOn. Furthermore, data allowances under the new Business Mobil rate plans are more than doubling and are also 5G-ready.

For more details, please refer to our media information.

Order today, connected tomorrow: new Telekom rate plans for IoT. We offer full-service rate plans for the Internet of Things (IoT). Our Business Smart Connect packages cover a range of all-inclusive services. The pre-activated SIM cards can be used immediately in sensors, trackers, and other IoT devices. The package also includes a service portal to manage the cards. Cards can be used in 33 countries of the European Union. We are one of the first companies to also offer roaming on the NarrowBand Internet of Things (NB-IoT) networks of our national companies. These are currently Austria, the Netherlands, Hungary, Slovakia, the Czech Republic, and Greece.

For more details, please refer to our media information.

Broadcast rights for UEFA EURO 2024. We have secured the broadcast rights in Germany for the UEFA European Championship 2024. The agreement with European soccer association UEFA covers the exclusive exploitation rights for all 51 matches. This means we can offer all UEFA EURO 2024 games on our TV and streaming platforms. The matches of the German national team and other games will be broadcast free-to-air, as will the semi-finals and the final. We are very open to finding solutions with genuine audience appeal – adapted in line with the relevant exploitation interests – and are already in talks with a number of TV broadcasters.

Hallo Magenta: the first European voice assistant. Our Smart Speaker with integrated voice assistant was launched on the market in September 2019. It is now possible to simply use voice commands to operate MagentaTV, Magenta SmartHome, and telephone services. Using voice commands to adjust the lighting or temperature at home to the right mood is no problem, either. The Smart Speaker even makes phoning a hands-free activity. Voice dialing allows users to make a call from their fixed-network line without any additional equipment. The Smart Speaker's voice assistant offers the highest level of data security – data is processed exclusively in compliance with our high European data protection standards. SDG 16

16 PEACE, JUSTICE AND STRONG INSTITUTIONS
STRUCTURE

For more details, please refer to our media information.

Moving with Magenta Telekom into Austria's digital future. T-Mobile Austria and UPC Austria have merged to form Magenta Telekom. Since the acquisition of UPC Austria in 2018, our Austrian subsidiary has bundled its offerings under the Magenta product brand while retaining the familiar "T" logo as its company brand. Customers continue to enjoy the best network quality. The new branding clearly marks a fresh start for the company – the Magenta brand will be far more prominent in communication than it is in other markets. With the bundling of its mobile and fixed-network products, Magenta Telekom is following our Group strategy.

For more details, please refer to our media information.

MagentaTV: Netflix rate plan, TV stick, and co-productions. We are taking MagentaTV to the next level. Our brand-new MagentaTV Netflix rate plan now gives customers the option to include Netflix in their TV package. The new MagentaTV stick streams MagentaTV on any television irrespective of the customer's ISP. We are also co-producing more content, with the two new productions Wild Republic and Children of Mars in the pipeline.

AWARDS SDG 16

We once again won a number of awards in the reporting year, the key ones of which can be seen in the following graphic.

16 PEACE, JUSTICE AND STRONG INSTITUTIONS
RELATIONSHIPS

For information on further awards received for our HR activities, please refer to the section "Employees."

Major awards in 2019

Q1

- **Brand Finance Global 500**
  Deutsche Telekom ranked the most valuable telecommunications brand in Europe with the highest brand value in the Company's history
- **Top 50 Most Valuable German Brands**
  Deutsche Telekom rated the second most valuable brand in Germany by the BrandZ study
- **Top Supplier Retail 2019**
  The EHI Retail Institute honors T-Systems with an award for its work as a digital partner for innovative concepts in retail
- **Sustainability report ranking**
  Award for best transparency from the German Institute for Ecological Economy Research
- **Quality-assured customer satisfaction**
  Certification organization TÜV stamps its seal of quality on our customer service
- **Growth Awards 2019**
  The OTE Group wins the award in the category Digital Evolution for its successful implementation of digitalization initiatives
- **World's most ethical companies 2019**
  The Ethisphere Institute ranks us as one of the most ethical companies worldwide and we are the sole winner in Germany
- **European Counsel Award**
  Our anti-trust law department wins in the category Competition Team of the Year
- **AV-Test 2019**
  Smart home platform Qivicon receives top marks for "Very good protection" for the fifth time in a row (03/2019)
- **Mobile provider hotline test**
  Rated "very good" and overall test winner (connect, issue 05/2019)

Q2

- **J.D. Power Customer Care Study 2019**
  T-Mobile US' customer care rated best for the 17th time in succession in the ranking of U.S. Mobile providers
- **Deutschland Test**
  Deutsche Telekom wins in the category "Sustainable engagement" (Focus Money magazine, issue 12/2019)
- **Public cloud test**
  Cloud Spectator finds the Open Telekom Cloud delivers "superior overall performance" in Europe
- **Austria's leading employer 2019**
  Magenta Telekom (T-Mobile Austria) is the leading employer in Austria according to a study by Leading Employer
- **connect readers' choice 2019**
  Deutsche Telekom wins in seven categories, including best mobile and fixed-network provider, awards for congstar and T-Mobile Austria (connect, issue 05/19)
- **Best DAX 30 speaker**
  The German association of German-language speechwriters rates Tim Höttges' speech to the shareholders' meeting its favorite for the third time
- **Impact BITE Awards 2019**
  OTE Group wins eight prizes for its innovative services and IT systems, as well as the ICT Company of the Year award
- **Ookla Speedtest Awards**
  Ookla confirms Hrvatski Telekom's mobile network is Croatia's fastest and offers the best coverage
- **Global Counsel Award**
  Our anti-trust law department is the Competition Team of the Year

Q3

- **S&P 500 Index**
  T-Mobile US added to the S&P 500 GICS Wireless Telecommunication Services Sub-Industry index in the United States
- **Best digital customer service in 2019**
  Deutsche Telekom rated the No. 1 German telecommunications provider (Computer Bild, issue 17/2019)
- **Broadband benchmark test in Austria**
  No. 1 spot for Magenta Telekom in the PC Magazin broadband test (issue 10/2019)
- **Best in test**
  P3 rates our mobile networks in Croatia, the Czech Republic, Greece, Hungary, the Netherlands, North Macedonia, Poland, and Slovakia best in test
- **Appeal of Conscience Award**
  Tim Höttges is recognized for his contributions to education, culture, and sustainability, his commitment to strengthening digital literacy, and his respect for human rights
- **OpenSignal Test 2019**
  T-Mobile US wins in the category Upload Speed Experience
- **connect's customer satisfaction survey – mobile providers**
  Magenta Telekom is rated Austria's best mobile provider (customer survey 9/2019)
- **Ookla Speedtest Awards**
  Cosmote's mobile network wins the prize for fastest network in Greece for the third time running
- **Investors' Darling**
  Deutsche Telekom once again wins in the categories Corporate Social Responsibility and Strategy Consulting
- **institutional assets Award**
  The Telekom Pension Fund wins the award for excellence in company pension services presented by the FAZ group

Q4

- **FTSE4Good**
  The index once again certifies OTE as a global leader in sustainable development
- **Best network 2019**
  Winner of Computer Bild magazine's mobile network test with an overall score of 1.8 (Computer Bild, issue 25/2019)
- **GWA Effie Award**
  Our MagentaTV campaign wins bronze in the Comeback category
- **UN Global Compact Network Poland**
  T-Mobile Polska wins award for implementing the ethics standard of the Business and Human Rights program coalition
- **Red Dot Brand of the Year 2019**
  Deutsche Telekom receives the Red Dot Award for its successful brand management, including MagentaTV and the Brand Dialog online portal
- **Deutschland Test Service King**
  Deutsche Telekom wins overall in the telecommunications industry category (Focus Money magazine, issue 43/2019)
- **Iconic Award 2019**
  Our LOVE MAGENTA shop with its impressive omnichannel concept wins in the category Innovative Architecture in the international architecture and design competition
- **CHIP network test 2019**
  Deutsche Telekom takes the first place in the industry magazine's mobile network test for the 10th time in succession (CHIP, issue 1/2020)
- **connect mobile network test 2020**
  Deutsche Telekom and Magenta Telekom (T-Mobile Austria) rated best in test, with top marks in the categories Voice and Data (connect, issue 1/2020)

For further information, please visit our website at: 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 all our CO_2 emissions by 90 percent (compared with 2017), and reduce emissions generated in the manufacture and use of our products by 25 percent per customer (SDG 13). 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). In 2019, we made “digital democracy” the focus issue of our offering for the promotion of media literacy in 2019.

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

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 percent 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.

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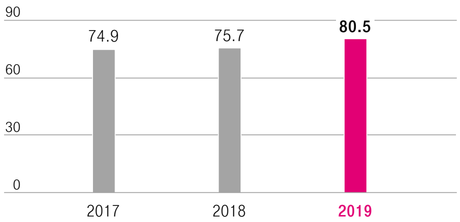
DEUTSCHE TELEKOM AT A GLANCE

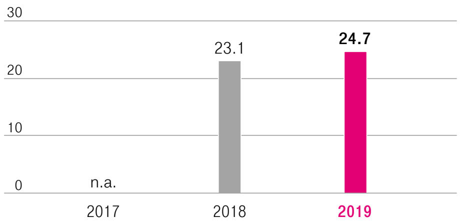
Net revenue

billions of €



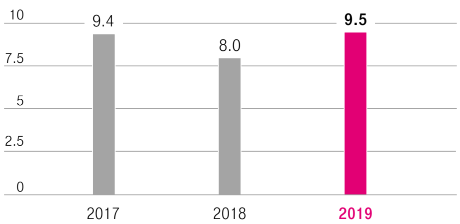
Adjusted EBITDA AL[a]

billions of €



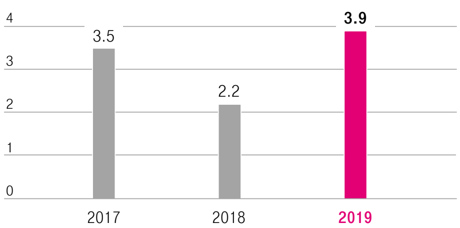
EBIT

billions of €



Net profit

billions of €



NET REVENUE

- We look back on a successful 2019 financial year and are well on track to meeting our growth forecast: Net revenue increased by 6.4 percent to EUR 80.5 billion. On a like-for-like basis, i.e., excluding exchange rate effects and effects of changes in the composition of the Group, net revenue was up by EUR 2.2 billion or 2.8 percent.
- Our United States operating segment posted an increase in revenue of 10.7 percent; also in U.S. dollars, the continuing success of our U.S. operations was evident in revenue growth of 5.0 percent.
- Our Europe operating segment recorded revenue growth of 2.4 percent and revenue in our Germany operating segment also edged up by 0.9 percent.
- The inclusion of Tele2 Netherlands also made a substantial contribution to the increase in revenue in our Group Development operating segment.

ADJUSTED EBITDA AL[a]

- Adjusted EBITDA AL rose by 7.2 percent to EUR 24.7 billion, with contributions from all operating segments. Adjusted for exchange rate effects and the slightly positive effects of changes in the composition of the Group, adjusted EBITDA AL rose by EUR 1.0 billion or 4.2 percent.
- Adjusted EBITDA AL in our United States operating segment increased by 10.4 percent. In U.S. dollars, this constituted growth of 4.7 percent in our U.S. operations.
- Our Europe operating segment recorded an increase in adjusted EBITDA AL of 5.0 percent and our Germany operating segment an increase of 2.4 percent. Substantial increases in adjusted EBITDA AL were likewise recorded by the Systems Solutions and Group Development operating segments – the latter also due to earnings contributed by the acquiree Tele2 Netherlands.
- At 30.7 percent, the Group's adjusted EBITDA AL margin increased slightly against the prior-year level of 30.5 percent. The adjusted EBITDA AL margin was 39.8 percent in Germany, 32.9 percent in Europe, and 27.5 percent in the United States.

EBIT

- EBIT increased by EUR 1.5 billion to EUR 9.5 billion.
- EBITDA AL was negatively affected by special factors of EUR 1.6 billion compared to expenses of EUR 1.5 billion in the prior year. Higher special factors, relating mainly to the process of obtaining the necessary approvals for the business combination with Sprint, were offset by lower special factors in connection with staff-related measures.
- At EUR 17.7 billion, depreciation, amortization and impairment losses were EUR 3.8 billion higher than in the prior year. This substantial increase is primarily attributable to the depreciation charge for right-of-use assets required to be recognized as a result of the application of IFRS 16. Depreciation of property, plant and equipment and amortization of intangible assets were EUR 0.5 billion higher than in the prior year, which had contained depreciation and amortization on finance lease assets. Impairment losses had been EUR 0.3 billion higher in the prior year.

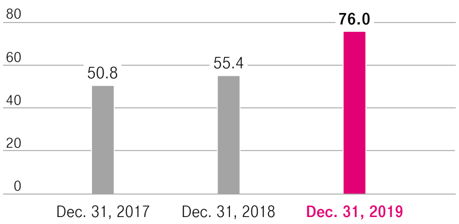
NET PROFIT

- Net profit increased by EUR 1.7 billion to EUR 3.9 billion.
- Our loss from financial activities decreased by EUR 0.7 billion to EUR 2.2 billion. Positive measurement effects from embedded derivatives at T-Mobile US were offset by increased finance costs resulting from the application of IFRS 16. The prior year had also contained a negative effect of EUR 0.6 billion in connection with a settlement agreed in the Toll Collect arbitration proceedings.
- Tax expense amounted to EUR 2.0 billion, compared with EUR 1.8 billion in the prior year.
- Profit attributable to non-controlling interests increased year-on-year by EUR 0.2 billion to EUR 1.4 billion.
- Adjusted earnings per share increased to EUR 1.04 from EUR 0.96 in the prior year.

[a] The new IFRS 16 "Leases" accounting standard has been applied since January 1, 2019. This led to a change in the definition of some of our financial performance indicators. Comparatives for 2018 were calculated on a pro forma basis for the redefined key performance indicators. No AL comparatives were calculated for 2017.

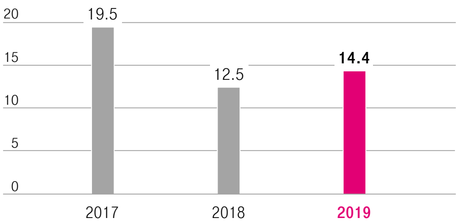
Net debt

billions of €



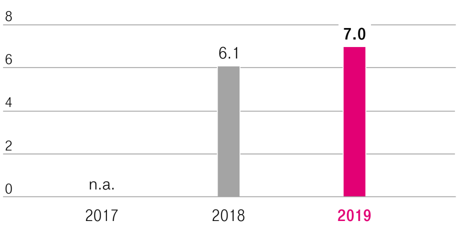
Cash capex

billions of €



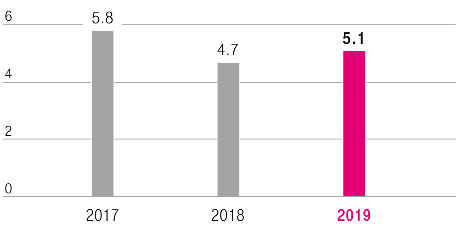
Free cash flow AL[a]
(before dividend payments and spectrum investment)

billions of €



ROCE

%



NET DEBT

- Net debt increased from EUR 55.4 billion at the end of 2018 to EUR 76.0 billion.
- The recognition of lease liabilities in connection with the application of IFRS 16 raised net debt by EUR 15.6 billion.
- Further factors in this increase included in particular the dividend payments – including to other shareholders of subsidiaries – (EUR 3.6 billion), additions to liabilities in connection with leases (EUR 5.5 billion), the acquisition of spectrum (EUR 3.2 billion), exchange rate effects (EUR 0.7 billion), and the acquisition of Tele2 Netherlands (EUR 0.4 billion).
- The main factor reducing net debt was free cash flow of EUR 10.1 billion.

CASH CAPEX

- Cash capex (including spectrum investment) increased by EUR 1.9 billion to EUR 14.4 billion.
- In the reporting year, payments were made for mobile spectrum licenses in the amount of EUR 1.2 billion, primarily in the United States operating segment. Annual installments through 2030 were agreed for the spectrum licenses worth EUR 2.2 billion acquired in Germany in 2019; EUR 0.1 billion was paid in the reporting year. In the prior year, payments had been made for mobile spectrum licenses in the amount of EUR 0.3 billion, again primarily in the United States.
- Excluding the effects from the acquisition of spectrum, the increase in cash capex of EUR 0.9 billion is attributable in particular to the United States operating segment, and mainly relates to the accelerated infrastructure build-out for the 600 MHz spectrum, which also lays the groundwork for 5G. In the other operating segments, investments in building out and upgrading our networks remained at a sustained high level.

FREE CASH FLOW AL[a] (BEFORE DIVIDEND PAYMENTS AND SPECTRUM INVESTMENT)

- Free cash flow AL was up by EUR 0.9 billion to EUR 7.0 billion.
- Net cash from operating activities increased substantially as a result of the positive development of cash generated from operations, which benefited from the strong performance of our operating segments, especially in the United States.
- The year-on-year increase of EUR 0.9 billion in cash capex (excluding spectrum investment) had a negative impact on free cash flow AL. This increase related largely to the United States operating segment.
- Currency translation effects had an overall positive effect on the development of free cash flow AL.

ROCE

- Our key performance indicator ROCE (return on capital employed) increased by 0.4 percentage points in the reporting year to 5.1 percent.
- This positive trend was due to a substantial increase in net operating profit after taxes (NOPAT), which posted stronger percentage growth year-on-year than the average amount of net operating assets (NOA).
- The positive development in NOPAT was driven primarily by the substantial increase in EBIT. The higher share of profit of associates and joint ventures accounted for using the equity method also had a positive effect; this item had been negatively impacted in 2018 due to the settlement in connection with ending the Toll Collect arbitration proceedings.
- Average NOA grew in 2019, primarily on the back of our spectrum acquisitions and the increase in operating working capital. The overall development of NOA reflects our consistently high investment volume.

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

[a] The new IFRS 16 “Leases” accounting standard has been applied since January 1, 2019. This led to a change in the definition of some of our financial performance indicators. Comparatives for 2018 were calculated on a pro forma basis for the redefined key performance indicators. No AL comparatives were calculated for 2017.

GROUP ORGANIZATION

BUSINESS ACTIVITIES AND SEGMENT STRUCTURE

Business activities. With 184 million mobile customers, 28 million fixed-network lines, and 21 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 210,533 employees worldwide (as of December 31, 2019), we generated revenue of EUR 80.5 billion in the 2019 financial year, around 69.5 percent of it outside of Germany.

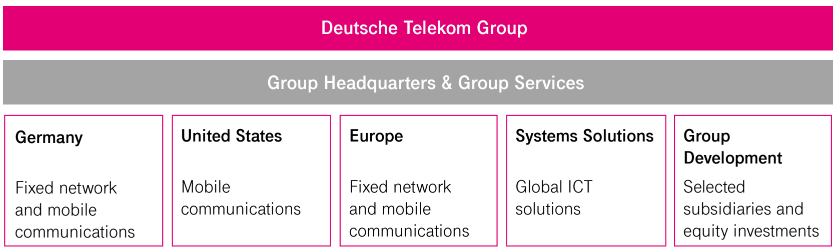
Fixed-network business includes all voice and data communications activities based on fixed-network and broadband technology. This includes the sale of terminal equipment and other hardware, as well as the sale of services to resellers. Our mobile communications business offers mobile voice and data 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, our corporate customer arm, T-Systems, operates 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, which are as follows:

- Customer delight and simplicity drive our action
- Respect and integrity guide our behavior
- Team together – Team apart
- Best place to perform and grow
- I am T – count on me

We want to be a sustainably growing company that delights its customers, creates value for its investors, and in which employees enjoy their work.

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



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 activities for consumers and business customers in Germany. It also focuses on the wholesale business to provide telecommunications services for carriers and our Group’s other operating segments. Separate sales entities for consumers and business customers allow the operating segment to take a customer-centric sales approach. 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 the Germany operating segment. As a pioneer of digitalization, the Germany operating segment offers its customers an individual service and product portfolio that is designed to be innovative while at the same time secure and simple.

Our **United States** operating segment combines all mobile activities in the U.S. market. T-Mobile US is the third largest provider in the United States. The extremely positive business development has been built on the back of the various Un-carrier initiatives launched in the last few years. In December 2019, T-Mobile US launched the first nationwide 5G network in the United States. On April 29, 2018, T-Mobile US announced that it had entered into a Business Combination Agreement with Sprint Corp. As a result of the merger, T-Mobile US expects to enhance its nationwide 5G network, accelerate innovation, and increase competition.

The consummation of our **Business Combination Agreement to merge with Sprint** is subject to approvals by the regulatory and anti-trust authorities and certain other customary closing conditions. On June 18, 2018, we filed the Public Interest Statement and applications for approval of our merger with Sprint with the Federal Communications Commission (FCC). The FCC granted formal approval on October 16, 2019. In June 2019, the attorneys general of 13 states and the District of Columbia filed a lawsuit against T-Mobile US, Deutsche Telekom, Sprint, and Softbank Group Corp. in the U.S. District Court for the Southern District of New York. Another four U.S. states have since joined the suit, while the attorneys general of Mississippi, Colorado, Nevada and Texas withdrew from the lawsuit following settlement agreements. We believe the lawsuit is without merit. On July 26, 2019, we entered into a consent decree with the U.S. Department of Justice, which is now awaiting confirmation by the U.S. federal court in Washington. As such, the DoJ is waiving its right under U.S. law to file a suit against the transaction. In parallel, multiple agreements were signed with the U.S. TV satellite operator DISH Networks to implement the conditions for the merger. Once the legal proceedings are concluded, we expect to close the transaction in the second quarter of 2020.

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 sold our national company in Albania as of May 7, 2019. This step means we are now an integrated provider of telecommunications services in all of our national companies. In addition to consumer business, most of the national companies also offer ICT solutions for business customers. As part of our international wholesale business, Telekom Global Carrier (TGC) sells wholesale telecommunications services to our operating segments as well as to third parties.

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. Ten portfolio units look after not only our traditional IT and telecommunications businesses, but also our growth areas (public cloud, Internet of Things (IoT), digital solutions including health, security, SAP, classified ICT, and road charging).

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, as well as the takeover of Tele2 Netherlands by T-Mobile Netherlands effective January 2, 2019. The resulting larger T-Mobile Netherlands is in a stronger position to offer customers integrated fixed-network and mobile products. Deutsche Telekom Capital Partners (DTCP) and the Group functions of Mergers & Acquisitions and Strategic Portfolio Management have also been assigned to Group Development. Our stake in Ströer SE & Co. KGaA was transferred to the Group's own trust company, Deutsche Telekom Trust e.V., in August 2019 as plan assets to cover Deutsche Telekom's existing pension obligations.

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. On the one hand, it is in charge of securing external employment opportunities for employees, mainly civil servants, predominantly in the public sector. On the other, Vivento also seeks to strategically place them internally, with the aim of retaining professional expertise within the Group, so as to reduce the use of external staff. 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, and IT 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, virtualization, and cloud services. Our Innovation Hub (IHUB) pools all of the expertise required for future innovation projects to ensure we stay flexible and innovative. Additional units are Network Infrastructure (NWI), Strategy & Technology Innovation (S&TI), and Pan-Net. NWI manages and operates a global network to offer voice and data communication services to wholesale customers. S&TI ensures efficient and customized research and provision of technologies, platforms, and services for mobile and fixed-network communications. Pan-Net is responsible for the shared pan-European network and for developing and providing services for our European national companies.

Changes to the organizational structure in 2020. Business-to-business telecommunications operations are to be realigned in 2020. Consistent with our efforts to implement the Group's strategy pillar "Lead in business productivity," the plan is to set up a new B2B unit within the Germany operating segment. The new unit will consist of the TC Services and Classified ICT units previously assigned to the Systems Solutions operating segment – with the exception of a number of activities assigned to Classified IT project business. The transition to the new structure will affect T-Systems' telecommunications operations both on a national and international level. In parallel, the portfolio units Security and IoT are to be turned into legally independent Group entities. Independent entities benefit from simpler decision-making processes and are able to act in a more agile way to better respond to market trends. The Telekom Global Carrier (TGC) and Network Infrastructure (NWI) sub-areas – which were previously reported primarily under the Europe operating segment and the Group Headquarters & Group Services segment respectively, and which together form the business area designated Deutsche Telekom Global Carrier (DTGC) – will be transferred to Telekom Deutschland GmbH in the Germany operating segment. The DTGC business area is currently legally assigned to Deutsche Telekom AG, and is to be transferred to Telekom Deutschland GmbH on the basis of a spin-off and transfer agreement, as yet to be concluded.

MANAGEMENT AND SUPERVISION

As of December 31, 2019, **Board of Management** responsibilities were distributed across nine Board departments. Five of these are the central management areas:

- Chairman of the Board of Management

and the Board of Management departments

- Finance
- Human Resources
- Data Privacy, Legal Affairs and Compliance
- 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 February 21, 2018, the Supervisory Board of Deutsche Telekom AG resolved to extend Timotheus Höttges' contract as Chairman of the Board of Management by five years. Timotheus Höttges was reappointed as Chairman of the Board of Management effective January 1, 2019. Also at its meeting on February 21, 2018, the Supervisory Board of Deutsche Telekom AG resolved to appoint Dr. Christian P. Illek as the new Board of Management member responsible for Finance (Chief Financial Officer – CFO) effective January 1, 2019.

At its meeting on July 13, 2018, the Supervisory Board of Deutsche Telekom AG resolved to appoint Birgit Bohle as the new Board of Management member responsible for Human Resources and as Labor Director effective January 1, 2019. Birgit Bohle succeeded Dr. Illek in this position.

At its meeting on September 4, 2018, the Supervisory Board of Deutsche Telekom AG resolved to appoint Thorsten Langheim as the Board of Management member responsible for USA and Group Development, a newly created Board of Management department, effective January 1, 2019. Deutsche Telekom AG thus has had nine Board of Management departments since the start of 2019.

Composition of the Board of Management as of December 31, 2019

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
Srini Gopalan	Europe
Dr. Christian P. Illek	Finance (CFO)
Dr. Thomas Kremer	Data Privacy, Legal Affairs and Compliance
Thorsten Langheim	USA and Group Development
Claudia Nemat	Technology and Innovation
Dr. Dirk Wössner	Germany

By resolution of the Supervisory Board of Deutsche Telekom AG of February 20, 2019, Srini Gopalan was reappointed as the Board of Management member responsible for Europe for the period from January 1, 2020 to December 31, 2024.

At its meeting on May 22, 2019, the Supervisory Board of Deutsche Telekom AG resolved to dissolve the Data Privacy, Legal Affairs and Compliance Board of Management department. 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 Board of Management department for Human Resources. Birgit Bohle has headed up the extended Board of Management department for Human Resources and Legal Affairs since January 1, 2020. Dr. Thomas Kremer will leave the Group for reasons of age effective March 31, 2020. From January 1, 2020 until his departure from the Group, the Board of Management member responsible for Data Privacy, Legal Affairs and Compliance, Dr. Kremer, is overseeing the transition of the individual units of his department to the target departments they have been assigned to.

By resolution of the Supervisory Board of Deutsche Telekom AG of September 4, 2019, the original three-year appointment of Adel Al-Saleh as the Board of Management member responsible for T-Systems was extended by a further two years until December 31, 2022.

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 comply 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

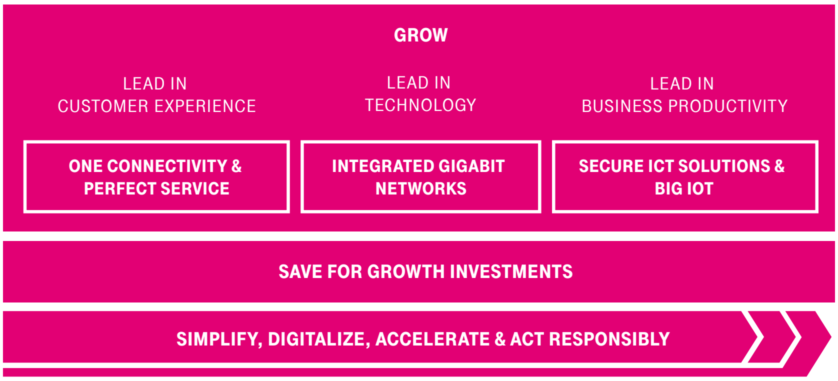
Since 2014, we have been aligning all of our corporate activities with our Leading European Telco strategy – with the aim of becoming Europe's leading telecommunications provider.

This strategy has proved very successful: In terms of market capitalization, we are Europe's highest-value telecommunications company (as of December 31, 2019). We once again increased our revenue, adjusted EBITDA AL, and free cash flow AL in the reporting year, and recorded growth on both sides of the Atlantic. Our brand value reached an all-time high in the Company's history in 2019, putting us in second place in a comparison of globally leading German companies. However, we also face a new set of emerging challenges 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. This situation is intensified by sustained public and political pressure on our build-out strategy, primarily in Germany.
- Competition in the telecommunications sector continues to intensify: 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 and 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 and which can both dramatically affect the stability of critical infrastructure and influence political relations.
- Sustained economic globalization, world population growth, and increasing use of digital technologies all put a strain on the available resources (for example, if the internet were a country, it would be the sixth-largest consumer of electricity on the planet). 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 challenges head on. We continue to systematically implement our Leading European Telco strategy. As the following shows, our claim to leadership ranges over three dimensions: customer experience, technology, and business customer productivity. From this we derive three specific action areas 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 action areas contribute to this growth target and provide a framework for our actions: “Save for growth investments,” and “Simplify, digitalize, accelerate & act responsibly.” The “Act responsibly” element was added in the reporting year. Sustainability and social responsibility have played a key role in our corporate activities for many years (for example, we set our first climate protection target back in 1995). We now plan to adapt our strategic target and integrate it as a core element of our Group strategy. SDG 8 SDG 9 SDG 12 SDG 13

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 4.7 million customers in Germany had opted for MagentaEINS; that is over 0.4 million more than in the prior year. The national companies of our Europe operating segment won some 1.5 million new customers for MagentaOne and similar FMC offerings in 2019. Because we want to continue on this path of growth, we work continuously to improve and expand our convergent portfolio.

We also plan to incorporate new services that genuinely add value for our customers, and set some key milestones in this regard in the reporting year. In 2018, we relaunched our MagentaTV offering in Germany to position ourselves as an aggregator for linear television including extensive features, access to content from the biggest video-on-demand providers, and exclusive sports and TV content. On this basis, in 2019 we continued to improve the service, for example, by expanding our partnerships with key content partners (including Netflix). Looking ahead, we have secured added appeal by acquiring the media content rights for UEFA EURO 2024. The addition of around 0.3 million TV customers in Germany shows that we are on the right track with our aggregator strategy. Our new digital voice assistant, Hallo Magenta, is enhancing the customer experience in interactions with our services while safeguarding data security and personal privacy. We work together with our customers to continually develop and test new services and further strengthen our entertainment portfolio. Our MagentaGaming beta, launched in 2019, is just one example of this.

We also see our goal to deliver perfect **customer service** as a powerful tool to help set us apart from the competition. This view led us to launch several initiatives in the reporting year that aim to enhance the quality of our customer service in Germany. These include improved self-service channels, a personal callback service, SprachID voice authentication, and the promise of assistance for customers struggling to set up and optimize their Wi-Fi at home. Numerous accolades underscore our hard work in this area: the No. 1 German mobile provider in 2019 in the connect hotline test (issue 5/2019), the best digital customer service 2019 (No. 1 German telecommunications provider, Computer Bild, issue 17/2019), and Service King 2019 in the telecommunications industry by Focus Money magazine (Deutschland Test, issue 43/2019). We will continue our efforts in 2020 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 Team of Experts approach launched last year: Several surveys on service quality place T-Mobile US ahead of its competitors (including being rated best customer service for the 17th time in succession in the J.D. Power ranking of U.S. mobile providers), while the Net Promoter Score in Customer Service stands at 70 percent – putting it at an all-time high. This is one of the reasons we won over 4.9 million new (branded) mobile customers in the United States in 2019. 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 self-administration of contracts) 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 came in at 67.3 points versus an adjusted value of 68.5 points at the start of the year (measured 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 are investing EUR 13 billion (not including spectrum purchase fees) 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

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

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 8 million households. In Hungary, for example, we can now offer fiber-optic lines to 2.2 million households – that's over 43 percent. In the Germany operating segment, we operate Europe's largest fiber-optic network with well over 500,000 kilometers of fiber-optic cable. We also continued to build out our network in the reporting year by deploying vectoring. We are thus delivering on our promise to provide fast internet with at least 50 Mbit/s to around 80 percent of households in Germany. In addition, existing customers are gradually being migrated to IP-based solutions and in consultation with the customers themselves. The migration in the German consumer market was completed in 2019 as planned. We have already completed the migration to IP lines in five national companies (Hungary, Croatia, Slovakia, North Macedonia, and Montenegro) and were in sight of the finish line in Greece at the end of 2019.

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. In 2019, we once again won the three big network tests – by connect (issue 1/2020), Chip (for the tenth time in succession; issue 1/2020), and Computer Bild (issue 25/2019) – in Germany. In the reporting year, the network experts from P3 communications tested eight of our European national companies (Greece, Hungary, Croatia, North Macedonia, Slovakia, the Czech Republic, the Netherlands, and Poland) and rated them all "best in test overall." T-Mobile US took the No. 1 spot in the OpenSignal Upload Speed Experience test in 2019. 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 plan to cover 99 percent of the population with LTE by the end of 2021; in Germany, we aim to achieve this household coverage target by the end of 2020.

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. Our goal is to work with policy-makers and industry to build the most powerful digital infrastructure for Germany – in cities and rural areas alike. We have already laid an important foundation with our investment of around EUR 3 billion for spectrum licenses, mainly in Germany, the United States, and Austria. In the United States, we plan to significantly improve our position to build out 5G nationwide through the business combination agreed with Sprint in 2018 and the additional spectrum this will bring to our portfolio. As the first telecommunications company in Europe to launch a live 5G network – in Austria, now with 31 sites nationwide – we are moving closer to our goal of technology leadership. T-Mobile US launched the United States' first nationwide 5G network in December 2019, offering network coverage to over 200 million people. So far, we have set up around 450 5G antennas across Germany. A further approximately three quarters of our existing sites are 5G-ready. Customers can currently use 5G in eight cities: Berlin, Cologne, Hamburg, Munich, Frankfurt/Main, Bonn, Leipzig, and Darmstadt. In addition to the high capital expenditure on spectrum licenses, we will be making the necessary large investments 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 in Germany. 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 19 percent compared with 2018). With our IT solutions, we help all business customers – from microenterprises to SMEs and major corporations – 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

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. For this reason, our Systems Solutions operating segment is currently undergoing a radical transformation comprising four key thrusts: a shift to portfolio-based business management, the integration of our sales organization, the reduction of interdisciplinary costs by streamlining processes and hierarchy levels, and a significant increase in the level of automation in service provision with a higher share of offshore/nearshore services. The excellent progress we made with this transformation in the reporting year is reflected both in efficiency gains and in our order entry figures, which grew by almost 8 percent year-on-year to EUR 7.3 billion.

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 2019 we initiated several more structural measures:

- We plan to offer our business customers “connectivity from a single source” (one connectivity) by establishing an integrated unit in 2020: With the exception of a number of activities assigned to Classified IT project business, the portfolio units TC Services and Classified ICT will be reassigned from T-Systems to the Business Customers unit of the Germany operating segment. 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 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 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., SD-WAN and Cloud Connect) 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. For this reason, the two portfolio units Security and IoT are to be turned into legally independent Group entities.

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

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 successfully 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. In line with this policy, we sold our only mobile-only subsidiary in Albania effective May 7, 2019. On the other hand, we bolster our growth ambitions by means of equity investments and acquisitions. In the reporting year, we devoted our energies to integrating our recent acquisitions in Austria (UPC Austria) and the Netherlands (Tele2 Netherlands) into our operating business to transform the two companies into real convergent providers. Our customers in Austria experienced this in the form of the launch of our Magenta Telekom brand.

We aim to strengthen our position in the U.S. mobile market through the business combination of T-Mobile US and Sprint, agreed in 2018. The approvals granted in the reporting year by the Federal Communications Commission and the Department of Justice bring us a huge step closer to continuing T-Mobile US’ success story (including 27 successive quarters of new customer growth in excess of one million, and market capitalization growth of over 200 percent in the last five years). Not only is the planned combination of business activities under an all-new, larger T-Mobile US consistent with our strategy of successfully developing our U.S. business, 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 combination is expected to generate synergies with a present value of around USD 43 billion (after integration costs).

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 easy to understand rate plans, such as MagentaEINS, MagentaTV – Simply one for all, or the unlimited rate plan MagentaMobil XL. 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 well established across Germany and Europe as central digital customer interfaces, and we continued to systematically expand the services available to include, e.g., router set-up functions and connectivity management. We interact with over 50 percent of customers in our European national companies digitally, via the service apps. The MeinMagenta app in Germany has now been downloaded almost 8.5 million times and receives positive ratings, with the iOS version rated 4.3/5 stars. Another element of our digitalization strategy, our SprachID voice authentication for customer service calls, has provided 830,000 identity verifications since its launch in July 2018. 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 abilities if we are to handle current and future challenges. With measures such as the introduction of the Youlearn initiative to integrate self-paced learning into daily work, we are tackling these developments head on and giving our employees more opportunities for personal and professional development. Employees in Germany and our European national companies devoted over 3.9 million hours of their time to learning in the reporting year – that's 4.5 working days on average. We also continued to lay the foundations for future-oriented ways of working with innovative concepts such as the 80/20 model (the option to dedicate 20 percent of working hours to Group-wide initiatives outside of the employee's unit). We do this because we firmly believe it is central to our obligation as an employer to **act responsibly**. SDG 8

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. For example, in 2019 we initiated a circular economy initiative to promote the recycling and reuse of used smartphones. Our aim is to substantially reduce the amount of resources that are wasted by unused devices gathering dust in people's homes. 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 use electricity entirely from renewable sources. In Germany, we have set ourselves a deadline for this of 2020. Above and beyond this, we are supporting a responsible approach to digitalization, e.g., with our guidelines on the ethical use of AI, and promoting digital democracy projects. SDG 13 SDG 16

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

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

17 PARTNERSHIPS FOR THE GOALS

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.

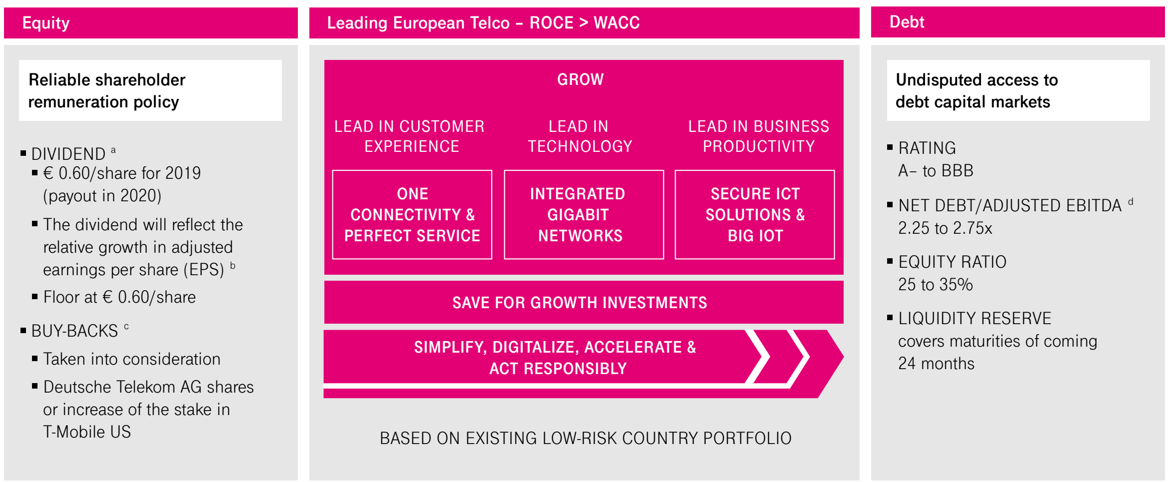
Part of our finance strategy was to achieve our target financial ratios – relative debt (ratio of net debt to adjusted EBITDA) and equity ratio – along with a liquidity reserve that covers our maturities of the coming 24 months at least. With these clear statements we intend to maintain our rating in 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. For the 2019 financial year, in keeping with our dividend policy as updated in November 2019, we plan to propose a dividend of EUR 0.60 per dividend-bearing share, which will also serve as a baseline for the dividend going forward. Starting from the 2020 financial year, the dividend is to reflect relative growth in earnings per share with a lower limit fixed at EUR 0.60 per dividend-bearing share. This dividend policy applies irrespective of the successful closing of the business combination of T-Mobile US and Sprint. 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. However, no shares are expected to be bought back in the first three years after the successful closing of the business combination of T-Mobile US and Sprint.

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 to an IP-based production model. 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] Not relevant for the first three years after the successful closing of the business combination of T-Mobile US and Sprint.
[d] Deviation from the target range for a short period after the successful closing of the business combination of T-Mobile US and Sprint.

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

		2019	2018	2017	2016	2015
ROCE	%	5.1	4.7	5.8	5.7	4.8
Net revenue	billions of €	80.5	75.7	74.9	73.1	69.2
Profit (loss) from operations (EBIT)	billions of €	9.5	8.0	9.4	9.2	7.0
EBITDA AL (adjusted for special factors)[a]	billions of €	24.7	23.1	n.a.	n.a.	n.a.
Free cash flow AL (before dividend payments and spectrum investment)[a]	billions of €	7.0	6.1	n.a.	n.a.	n.a.
Cash capex (before spectrum investment)	billions of €	(13.1)	(12.2)	(12.1)	(11.0)	(10.8)
Rating (Standard & Poor's, Fitch)		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 redefined key performance indicators resulting from the introduction of the IFRS 16 accounting standard.

EFFECTS OF THE APPLICATION OF THE NEW IFRS 16 "LEASES" ACCOUNTING STANDARD ON OUR FINANCIAL PERFORMANCE INDICATORS

The mandatory first-time application of the new IFRS 16 "Leases" accounting standard as of January 1, 2019 had a material impact on Deutsche Telekom's consolidated financial statements. The new standard requires payment obligations from existing operating leases to be discounted and recognized as lease liabilities; as financial liabilities, they increase net debt. At the same time, the lessee recognizes a right-of-use asset. Operating expenses previously recognized in connection with operating leases are now recognized in depreciation charges on right-of-use assets and in interest expenses for discounted obligations from operating leases, as appropriate. This significantly increases EBITDA without any attendant change in the economic circumstances. In the statement of cash flows, the principal repayment portion of the lease payments from existing operating leases reduces net cash from/used in financing activities and no longer affects net cash from operating activities. The interest portion of the payments remains in net cash from operating activities and thus also in free cash flow.

Since expenses and cash outflows for leases are substantial elements of our earnings performance and solvency, effective the start of the 2019 financial year we have taken into account the effects of the mandatory first-time application of the IFRS 16 accounting standard when determining our financial performance indicators. We also want to ensure maximum comparability with our previous performance indicators. Our operational performance is now measured on the basis of “EBITDA after leases” **(EBITDA AL)** and not on the basis of EBITDA. EBITDA AL is calculated by adjusting EBITDA for depreciation of the right-of-use assets and for interest expenses on recognized lease liabilities. The “free cash flow” performance indicator was replaced by “free cash flow after leases” **(free cash flow AL)**. Free cash flow AL is determined by adjusting free cash flow for repayments of lease liabilities. To improve comparability of our performance indicators with the EBITDA and free cash flow indicators reported in the financial statements of T-Mobile US in accordance with U.S. GAAP, which continues to differentiate between operating and finance leases, expenses and repayments for finance leases at T-Mobile US will not be taken into account when determining EBITDA AL and free cash flow AL.

A reconciliation of the definitions of the former financial performance indicators with the new “after leases” indicators can be found in the following table:

millions of €	2019
EBITDA	27,120
Depreciation of right-of-use assets[a]	(3,181)
Interest expenses on recognized lease liabilities[a]	(796)
EBITDA AL	**23,143**
Free cash flow (before dividend payments and spectrum investment)	10,133
Principal portion of repayment of lease liabilities[a]	(3,120)
FREE CASH FLOW AL (BEFORE DIVIDEND PAYMENTS AND SPECTRUM INVESTMENT)	**7,013**

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

The published prior-year figures have not been adjusted retroactively following the first-time application of IFRS 16. To enable comparability with the new performance indicators, pro forma comparatives were determined for the prior year. These were reached using approximate calculations of the key effects of IFRS 16 for the prior year, before applying the calculation shown in the table for the current year. Changes to the organizational structure within the Group were also taken into consideration.

The **ROCE** calculation method also had to be adjusted effective the start of the 2019 financial year as a result of the mandatory first-time application of the IFRS 16 accounting standard. NOA is now determined taking capitalized right-of-use assets from leases into consideration. By contrast, the present value of unrecognized rental and lease obligations as well as adjustments to their respective interest components will no longer be taken into account when determining NOPAT. As part of these changes, the definition of ROCE was both refined and simplified at the start of the financial year, with operating working capital being calculated solely from trade receivables, inventories, and trade and other payables. No further adjustments to NOPAT, NOA, or other assets under NOA are necessary. Overall, the new calculation method has a minor effect on ROCE.

For further information on the new IFRS 16 accounting standard, please refer to the section “Summary of accounting policies” in the notes to the consolidated financial statements.

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 our central performance indicator. 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.

We believe that ROCE best reflects the expectations of the four aforementioned stakeholders. The indicator measures how efficiently we generate revenues with the capital employed. ROCE is especially informative when taking a long-term view, because it takes into account both the value of the assets that are tied up in our capital-intensive infrastructure, and their utilization. This reveals the crucial advantage of this KPI. It does not focus on the absolute amount of the earnings generated, but rather how much earnings the capital employed generates.

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, in the 2019 financial year we started measuring 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 costs. 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) with the values adjusted for special factors, please refer to the table "Consolidated income statement and effects of special factors" in 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 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 are convinced 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

		2019	2018	2017	2016	2015
Customer satisfaction (TRI*M index)		67.3	67.7	68.6	70.2	67.4
Employee satisfaction (commitment index)[a]		4.0	4.1	4.1	4.1	4.1
FIXED-NETWORK AND MOBILE CUSTOMERS						
Mobile customers	millions	184.0	178.4	168.4	165.0	156.4
Fixed-network lines	millions	27.5	27.9	27.9	28.5	29.0
Broadband customers[b,c]	millions	21.0	20.2	18.9	18.4	17.8
SYSTEMS SOLUTIONS						
Order entry	millions of €	7,329	6,776	5,241	6,851	5,608

[a] Commitment index determined on the basis of the employee surveys carried out in 2019, 2017, and 2015.

[b] Excluding wholesale.

[c] Starting in Q2 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.

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, since 2010 we have made this key indicator one of four parameters for the long-term variable remuneration (Variable II) for our Board of Management members. It is also used as a parameter in the long-term incentive plan, which was launched in 2015 and is offered to our managers (with the exception of Board of Management members). We take the TRI*M indexes calculated for the operating entities 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."

8 DECENT WORK AND ECONOMIC GROWTH

EMPLOYEES

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

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 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 which was relaunched in 2015 for our managers (excluding Board 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 global economy grew by 2.9 percent in the reporting year – the lowest growth rate since the sovereign debt crisis. In the previous year, it had stood at 3.6 percent. Growth also slowed in our core markets, although it remained positive. While growth in Germany fell well below the EU average, Poland, Hungary, and Romania were still among the fastest growing European economies.

GDP in Germany increased by 0.6 percent year-on-year, with the export-dependent economy suffering as a result of the slowdown in global trade. Industrial production declined, however domestic demand remained stable, with consumer spending bolstering the domestic economy. The average unemployment rate for the year was 5.0 percent in 2019. The U.S. economy grew by 2.3 percent in the reporting year, with the labor market remaining in good shape. The countries in our Europe operating segment posted consistently robust growth in 2019. The national economies continued to profit from rising domestic consumption and stable demand. The situation in the national labor markets in our Europe operating segment continued to improve thanks to positive economic growth.

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 2017 compared with 2016	GDP for 2018 compared with 2017	GDP estimate for 2019 compared with 2018	Unemployment/ non-employment rate in 2017	Unemployment/ non-employment rate in 2018	Estimated unemployment/ non-employment rate in 2019
Germany	2.5	1.5	0.6	5.7	5.2	5.0
United States	2.4	2.9	2.3	4.4	3.9	3.7
Greece	1.5	1.9	1.8	21.5	19.3	17.3
Romania	7.1	4.4	4.1	4.9	4.2	3.9
Hungary	4.3	5.1	4.6	4.2	3.7	3.4
Poland	4.9	5.1	4.1	4.9	3.9	3.5
Czech Republic	4.4	2.8	2.5	2.9	2.2	2.1
Croatia	3.1	2.7	2.9	11.0	8.4	6.9
Netherlands	2.9	2.6	1.7	4.9	3.8	3.4
Slovakia	3.0	4.0	2.7	8.1	6.5	5.8
Austria	2.5	2.4	1.5	5.5	4.9	4.6

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

TELECOMMUNICATIONS MARKET

Demand for high-speed broadband – over the fixed and mobile networks – remains high. According to estimates by Analysys Mason, fixed-network data traffic grew by 30 percent worldwide in 2019. In the same period, estimates by Dialog Consult put the average data volume per fixed-network line and month in Germany at 137 gigabytes – more than five times the level seen five years ago. Analysys Mason estimates that mobile data traffic grew by 70 percent worldwide in 2019, representing an eighteen-fold increase in five years. 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) grew by 2.5 percent in the reporting year to EUR 3.2 trillion. 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 an increase of 0.4 percent worldwide to EUR 1.7 trillion and the information technology (IT) market segment to record an increase of 5.0 percent for 2019.

In the European Union (EU), revenues in the telecommunications market segment increased by 1.9 percent in 2019. Revenues from telecommunications equipment rose by 8.2 percent, while revenues from telecommunications services declined by 0.6 percent. In the CEE countries, revenues from telecommunications equipment and services grew by 3.0 percent in the reporting year.

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 mobile providers becoming established in many markets using the network infrastructure of the mobile network operators. Competition is also intense in the fixed network. Established telecommunications companies are competing 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 acquisition) 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. SDG 9 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.

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

STRUCTURE

GERMANY

According to EITO, revenue from IT products and services, telecommunications, and consumer electronics increased by 3.3 percent to EUR 144.1 billion in Germany in the reporting year. This was primarily attributable to the 4.2 percent growth in information technology. Telecommunications revenues (telecommunications services, hardware, and infrastructure) increased by 2.0 percent to EUR 59.7 billion.

The number of broadband lines in Germany grew by 2.9 percent in 2019 to around 35.9 million at year-end, according to EITO. For 2020, the number of broadband lines is expected to grow by a further 2.5 percent to 36.8 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 towards FMC offerings continued in the reporting year, with more and more providers expanding their portfolios. We launched our first convergent offering, MagentaEINS, on the market in fall 2014. Since then, we have been gradually enhancing the service both in the area of traditional communication and add-on services such as smart home, cloud computing, and security applications. Vodafone and O_2 made up ground in terms of convergent offers.

In the German mobile market, service revenues increased by 0.8 percent against 2018 to approximately EUR 20.0 billion. This revenue growth was driven largely by the continued rise in data usage, which offset regulatory effects as well as sustained price and competitive pressure. The use of mobile data continues to grow exponentially. 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 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

The mobile communications market in the United States continues to be divided between four major facilities-based nationwide providers – AT&T, Verizon Wireless, T-Mobile US, and Sprint – and various regional network operators. In addition there are a number of mobile virtual network operators, which rely on the networks of one or more of the four national carriers to transport their voice and data traffic. The two largest national network operators are AT&T and Verizon Wireless, followed by T-Mobile US and Sprint.

The market continues to be very dynamic. Comcast, Charter, DISH, Altice, and Google have successfully entered or are on the verge of entering the wireless market, demonstrating the intensity of current competition in the sector. For example, the cable companies Comcast, Charter, and most recently Altice, have begun offering mobile services to their customers by leveraging their respective existing Wi-Fi networks, with Comcast and Charter falling back on Verizon’s network and Altice on Sprint’s network when out of their respective Wi-Fi footprints. These cable MVNO offerings have slowly churned subscribers away from the traditional wireless providers, exerting new competitive pressures and blurring market boundaries. DISH, which holds licenses to vast swaths of airwaves, has announced near-term plans for both a NarrowBand IoT network and a 5G network.

In the United States, 5G commercialization is moving at a swift pace. All four national providers have launched 5G offerings on the market, which began with fixed-wireless plays in trial cities, and which currently take shape in true mobile services. Since December 2019, T-Mobile US has covered large parts of the United States with its 5G network. All carriers are expected to continue to expand their networks in the coming months and according to different models which, for the time being emphasize different spectrum bands.

For its part, the FCC has taken various steps to encourage investment in the wireless space. For example, to help providers prepare for the deployment of next-generation networks, the FCC has cleared regulatory hurdles, and preempted several state and local obstacles, in efforts to streamline the build-out of 5G mobile networks.

EUROPE

In the 2019 financial year, the traditional telecommunications markets continued last year’s growth trend in the highly competitive market environment in our Europe operating segment. Steady growth in broadband and TV services more than offset declining revenues from voice telephony in fixed-network business. Growth rates for mobile data usage remained high, especially due to the increased demand for the wide range of video services available. Overall, mobile business developed positively.

Market consolidation in our European footprint continued in 2019 through mergers and acquisitions (e.g., Vodafone/Liberty Global (UPC) in Hungary, the Czech Republic, and Romania; United Group/Tele2 in Croatia).

The unabated strong trend towards convergent product packages combining fixed-network and mobile communications (FMC) gained further momentum, bolstered on the one hand by the takeover of selected Liberty Global cable operations by Vodafone, e.g., in Hungary and Romania, 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 Amazon Prime Video still only have limited potential for substituting traditional pay TV in the countries of our Europe operating segment. According to Ampere Analysis, household penetration for these services increased from around 6 percent to 9 percent in 2019. By comparison, penetration in Western Europe increased by 10 percentage points in the reporting year to around 40 percent.

In the business customer segment, European telecommunications providers benefited from advancing digitalization. The topics trending in 2019 were smart solutions for intelligent and clean cities and municipalities. We were able to successfully market our Smart City offers, such as charging points for electric vehicles in Croatia, in almost all of our national companies, especially in Romania and Greece. SDG 11 Thanks to innovation pressure from the European Union towards companies making their economic output digital and more productive and the predominantly stable economic situation prevailing in Europe, there was greater demand from companies in 2019 for complex digitalization projects. As a result, we also performed very well with our convergent products for everyday business (MagentaOne Business).

11 SUSTAINABLE CITIES AND COMMUNITIES

FINANCE

SYSTEMS SOLUTIONS

In the information and communications technology (ICT) industry in our core market of Western Europe, the volume addressed by our Systems Solutions operating segment and the T-Systems brand increased by 6.4 percent in the reporting year to EUR 229 billion. However, this trend impacted the business areas of the market in very different ways.

In the telecommunications (TC) segment, the market was dominated by continued price erosion in telecommunications services and by intense competition, while the weaker economic development in Europe had relatively little impact. The focus in this segment continues to be on the substitution of elements of the portfolio and demand for stable, intelligent and secure network solutions with increasingly large bandwidths. Growth in ICT security (cybersecurity), Internet of Things (IoT), cloud computing, and unified communications is leading to long-term stabilization of the markets we serve. Price erosion and the migration from high-value VPNs to low-cost internet-based solutions are offset by the development of overlay solutions (software-defined WANs), leading to a stable market volume and new short-term opportunities. While traditional business for telephony and unified communications is shrinking, demand for cloud-based communications and collaboration solutions (Unified Communications & Collaboration, UCC) is even driving moderate growth in the overall Western European UCC market. The trend towards managed LAN solutions continues and is also contributing to slight growth in the LAN market. Substitution effects between fixed-network and mobile operations continue to intensify. The migration to all-IP solutions, e.g., the combination of internet access, Voice over IP, IP VPN, and Unified Communications, continues to increase.

In terms of IT services, demand has grown further for cloud services and cybersecurity services, as has the importance of digitalization, intelligent networks, the Internet of Things (including Industry 4.0), and communication between machines (M2M). Growth in this area reached double digits. The advance of digitalization and the shift towards cloud solutions also transformed demand in the systems integration business. Traditional project business in Germany declined. By contrast, the market for cloud-based SI services increased by almost 11 percent.

Competitive and price pressure persisted in all submarkets of our Systems Solutions operating segment. This was caused in part by competitors such as BT Global Services and Orange Business Services in the telecommunications market, and IBM, Atos, and Capgemini in the IT segment; in addition, the IT segment in particular came under price pressure from cloud providers such as Amazon Web Services, Google, and Salesforce. This effect is further intensified by providers of services rendered primarily offshore.

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).

The mobile communications market in the Netherlands has been marked by high price and competitive pressure for quite some time, and this situation intensified again in 2019. One of the trends contributing toward this is the growing bundling of fixed-network and mobile products into convergent offers (FMC), an area that is dominated by the two companies KPN and VodafoneZiggo. In recent years, prices for wireless products have come under increasing pressure from the FMC trend.

DFMG is the biggest provider of passive wireless infrastructure for mobile communications and broadcasting in Germany. The market also saw increased demand for cell sites in financial year 2019, 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 and European regulation, which is associated with extensive powers to intervene in our product design and pricing. We were again subject to extensive regulation in our mobile and fixed-network businesses in 2019.

REGULATION

Federal Network Agency to adapt regulation of the "last mile." The Federal Network Agency carries out regular reviews to determine whether and which companies are in dominant market positions and what regulatory requirements this entails. To date, Telekom Deutschland has had to comply with extensive regulation of what is known as the "last mile." The Agency published its draft of a new market analysis on access to the "last mile" for consultation on May 27, 2019. According to the draft, Telekom Deutschland remains in a dominant market position. However, the Agency emphasizes that the regulations governing Telekom's existing copper network do not necessarily have to apply to FTTH; rather, the Agency advocates – at most – minimal regulation provided the market participants can reach mutual agreement. The details of the regulatory requirements will be determined in separate proceedings, the outcome of which cannot be predicted.

Fixed-network termination rates given final approval for four years. On June 28, 2019, the Federal Network Agency issued final approval of the fixed-network termination rates (FTRs) both for Telekom Deutschland and for alternative telecommunications operators in the form of a four-year glide path. The following FTRs will apply effective January 1, 2019: 2019 = 0.08 ct/min., 2020 = 0.06 ct/min., 2021 = 0.05 ct/min., and 2022 = 0.03 ct/min. The rates approved by the Agency will apply until the European Commission enacts an FTR cap to replace the national regulation.

Federal Network Agency approves further MTR cuts. On November 28, 2019, the Federal Network Agency published its decision to approve the mobile termination rates (MTRs), which reduced the MTRs from 0.95 ct/min. to 0.90 ct/min as of December 1, 2019. In two additional steps to be implemented annually also effective December 1 of the following years, MTRs will be cut further to 0.78 ct/min. and 0.70 ct/min. respectively. It is anticipated that the rates approved by the Agency will apply until the EU-wide MTR cap required under the new EU legal framework enters into force – possibly following a transition period.

Deregulation of mobile termination rates for calls from non-EU countries. The Federal Network Agency has deregulated the termination of calls originating outside of the European Economic Area (EEA) on the mobile network of Telekom Deutschland and other German mobile network operators. As a result, since December 1, 2019 we ourselves have been able to decide on the pricing and terms that apply to the charging of calls to network operators outside the EEA. Specific contractual amendments must be made before we can implement this change; these are already being negotiated. This differentiation between EEA and non-EEA calls is now standard practice in most EU member states, since MTR regulation binds European network operators to extremely low termination rates while the rates charged by network operators outside of the EEA are significantly higher. However, in order to prevent prices from spiraling to the detriment of the consumer, while these rates are freely negotiable, they must not exceed the rates that the network operators in the originating countries charge for comparable services.

Deregulation of access to the public telephone network. In its decision published on December 11, 2019, the Federal Network Agency revoked the ex-post regulation of our line rate plans and bundles, as well as the obligation to offer call by call in retail. We will however continue to offer our customers call by call even without this obligation. To this end, an agreement was reached with the Association of Telecommunications and Value-Added Service Providers (VATM) that our end customers can use call by call until the end of 2022. The Federal Network Agency had ruled that competition now works on this market and, as such, the regulatory requirements are no longer necessary.

Increase of rates for unbundled local loop lines (ULLs). The Federal Network Agency increased the regulated rates received by Telekom Deutschland for leasing the "last mile" of its network with effect from July 1, 2019. Specifically, the rate for leasing the line from the customer to the cable distribution box increased from EUR 6.77/month to EUR 7.05/month and the rate for the longer section from the customer to the main distribution frame increased from EUR 10.02/month to EUR 11.19/month. The rate for leasing cable duct capacities increased from EUR 0.04/month to EUR 0.06/month. Although these rates remain below the level we sought in our application, the Agency has at least recognized that the costs of building out the "last mile" of the network have risen in the three years since the rates were last set. The rate approvals are valid until June 30, 2022.

StreamOn. In its ruling dated July 12, 2019, the Münster Higher Administrative Court confirmed as part of expedited court proceedings that the Federal Network Agency's orders regarding the optimization of data traffic when offering internet access services as well as the obligation to also make the services available within the EU must be followed for the time being. In consultation with the Federal Network Agency, we have modified the product pursuant to the authority's requirements. Nevertheless, the Cologne Administrative Court will review in ordinary court proceedings (known as principal proceedings) whether the measures to optimize data traffic as well as the restriction of the offering to Germany are compatible with the EU regulation. The Cologne Administrative Court has referred the crucial questions under EU law to the European Court of Justice and suspended national proceedings.

AWARDING OF SPECTRUM

Spectrum auction in Germany. The Federal Network Agency's auction of nationwide frequencies for Germany in the 2.1 GHz and 3.4 to 3.7 GHz bands was held between March 19 and June 12, 2019. Telekom Deutschland was admitted to the auction proceedings along with three other companies: Drillisch Netz, Telefónica Germany, and Vodafone. All participants purchased spectrum. We won four frequency blocks in the 2 GHz band and nine lots in the 3.6 GHz band worth a total of EUR 2.17 billion. In place of a lump-sum payment, government representatives agreed to let us pay the purchase price in annual installments from 2019 through 2030. Installment payments were granted in place of an interest payment on the condition that Deutsche Telekom assumes additional build-out obligations. These additional licenses double our spectrum holdings in the 2.1 GHz band and give us almost a third of the available spectrum (90 MHz) in what is the optimum band for us, the 3.6 GHz band. Achieving this desired outcome to the auction helps us sustain our leading position in the competition to deliver the best quality mobile network in Germany. The three existing network operators and six service providers have brought legal action in connection with the auction terms and conditions; however, this had no effect on the auction timing. The application process for local frequencies in the 3.7 to 3.8 GHz range began in November; however, national mobile network operators are excluded from this process.

Spectrum auction in Austria. The auction in Austria of key 3.6 GHz spectrum (3.4 to 3.8 GHz) required for the rollout of 5G was held between February 12 and March 8, 2019. The nationwide network operators A1, T-Mobile Austria, and Hutchison, as well as other regional operators, were admitted to the proceedings as participants. Our subsidiary T-Mobile Austria secured continuous nationwide spectrum of 110 MHz (in the 3,690 to 3,800 MHz band) worth EUR 57 million, while Hutchison obtained only 100 MHz and A1 received varying regional spectrum packages due to the success of four regional providers. T-Mobile Austria is now preparing for the multi-band auction with 700, 1,500 and 2,100 MHz which will begin in the first quarter of 2020.

Spectrum auctions in the United States. The Federal Communications Commission (FCC) held a 28 GHz auction from November 2018 through January 2019. This was the first time that 5G spectrum in such a high frequency band (known as millimeter wave (mmWave)) had been auctioned in the United States. On March 14, 2019, a second mmWave auction began in which a total of 1.55 GHz of spectrum in the 24 GHz band was available. T-Mobile US also participated in this auction. Over the course of the two auctions for 28 GHz and 24 GHz spectrum, T-Mobile US paid around USD 843 million for a total of 367 MHz, thus securing itself a solid mmWave holding in preparation for 5G. A further auction started on December 10, 2019 for licenses in the frequency ranges of 37 GHz, 39 GHz, and 47 GHz. The FCC is also planning an auction of spectrum in the 3.5 GHz band in June 2020, as well as a further auction of a total of 280 MHz of spectrum in the 3.7 to 4.2 GHz range at a later date (auction date not yet set).

The following table provides an overview of the main spectrum awards such as auctions as well as license extensions in Germany and at our international subsidiaries. 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	Spectrum acquired (MHz)	Spectrum investment
Germany		Completed	2,100 / 3,400 – 3,700	Auction (SMRA[a])	20 MHz / 90 MHz	€ 2.17 billion[b]
Greece	Q2 2020	Q3 2020	700 / 1,500 / 3,600 / 26,000	Auction (SMRA[a]), expected	tbd	tbd
Croatia		Completed	2,100 / 2,600	Assignment on application	2x 20 MHz in the 2,600 MHz band	Annual fees, no one-time charge
Croatia	Q1 2020	Q2 2020	700 / 3,400 – 3,800 / 26,000	tbd	tbd	tbd
Netherlands	Q2 2020	Q3 2020	700 / 1,500 / 2,100	SMRA-clock hybrid auction expected, details tbd	tbd	tbd
North Macedonia		Completed	1,800	Extension of licenses	2x 10 MHz	No extension fees
North Macedonia	Q4 2019	Q1 2020	2,100	Sealed-bid tender[c]	tbd	tbd
North Macedonia	Q2 2020	Q3 2020	700 / 3,400 – 3,800	Auction, details tbd	tbd	tbd
Austria		Completed	3,400 – 3,800	Regional auction (CCA[d])	1x 110 MHz	€ 57 million
Austria	Q1 2020	Q2 2020	700 / 1,500 / 2,100	Auction (CCA[d]), expected	tbd	tbd
Poland	Q2 2020	Q3 2020	800 / 3,600 – 3,800	Auction, details tbd	tbd	tbd
Poland	Q3 2021	Q4 2022	700 / 2,100	Auction, details tbd	tbd	tbd
Romania	Q1 2020	Q2 2020	700 / 800 / 1,500 / 2,600 / 3,400 – 3,800 / 26,000	Auction, details tbd	tbd	tbd
Slovakia	Q1 2020	Q2 2020	700 / 900 / 1,500 / 1,800	Auction (SMRA[a]), expected	tbd	tbd
Czech Republic	Q1 2020	Q2 2020	700 / 3,400 – 3,600	Auction (SMRA[a]), expected	tbd	tbd
Hungary	Q1 2020	Q2 2020	700 / 2,100 / 2,600 / 3,400 – 3,800	Auction (sequential CCA), expected	tbd	tbd
United States		Completed	28,000	Auction (SMRA[a])	367 MHz (all in 24 / 28 GHz)	$ 843 million
United States		Completed	24,000	Auction (CCA[d])	See above	See above
United States	Started	Q1 2020	37,000 / 39,000 / 47,000	Auction (CCA[d])	tbd	tbd
United States	Q2 2020	Q3 2020	3,550 – 3,700	Auction (clock auction)	tbd	tbd
United States	tbd	tbd	3,700 – 4,200	Auction, details tbd	tbd	tbd

[a] Simultaneous electronic multi-round auction with ascending, parallel bids for all available frequency ranges.
[b] Annual installment plan until 2030 agreed, starting in 2019, provided we take on additional build-out obligations.
[c] Sealed-bid tender: auction in which bidders submit their offers in sealed envelopes.
[d] Combinatorial clock auction: three-stage, multi-round auction for spectrum from all available frequency ranges.

DEVELOPMENT OF BUSINESS IN THE GROUP

STATEMENT OF THE BOARD OF MANAGEMENT ON BUSINESS DEVELOPMENT IN 2019

Bonn, February 10, 2020

We successfully closed the 2019 financial year with very strong results. We met our key company targets and made important progress with our innovation fields. Net revenue increased by 6.4 percent to EUR 80.5 billion. In organic terms, net revenue increased by 2.8 percent. In other words, the figure has been adjusted for this year's positive currency translation effects and the effects from the acquisition of Tele2 Netherlands and UPC Austria. Our business continued to record strong growth across all operational segments. This is the result of the great popularity of our mobile and broadband offerings in particular. The integration of UPC Austria and Tele2 Netherlands further improved our position in Europe, especially with regard to the convergent product offering. We continued to post strong growth in the U.S. business in terms of customer additions. We want to further develop this good position by means of the agreed business combination of T-Mobile US and Sprint. With regard to the 5G build-out, we got the spectrum that we need and laid important foundations with the launch of the first 5G networks in Germany, the United States, and Austria.

Adjusted EBITDA AL grew by 7.2 percent to EUR 24.7 billion. The main reason for this increase is a sound operational development, driven by revenue growth and further enhanced cost efficiency. All operating segments reported year-on-year increases in their respected adjusted EBITDA AL. Our free cash flow AL (before dividend payments and spectrum investment) came in at EUR 7.0 billion. This represents growth of approximately 15.9 percent year-on-year.

The strong operational development is also reflected in net profit, which increased by EUR 1.7 billion to EUR 3.9 billion. The decrease in the loss from financial activities also had a positive effect; this was mainly attributable to positive measurement effects from embedded derivatives. By contrast, we recorded higher depreciation and amortization in 2019 as a result of the high level of investment in building and expanding our mobile networks and fixed-network infrastructure, as well as for the forward-looking migration to IP as part of our integrated network strategy. Net profit adjusted for special factors increased by EUR 0.4 billion to EUR 4.9 billion. Adjusted earnings per share was EUR 1.04, exactly in line with our expectations.

ROCE increased year-on-year due largely to the substantial growth in net operating profit after taxes.

Net debt increased from EUR 55.4 billion to EUR 76.0 billion, which is attributable to the new accounting standards for leases in 2019. Since the start of 2019, obligations from operating leases must be recognized as liabilities in the statement of financial position. Previously these obligations had been disclosed in the notes to the consolidated financial statements. Key investments in spectrum licenses also had a negative effect.

The trends in the industry, in particular on the European telecommunications markets, remain challenging due to rising competition and strict regulatory requirements. However, the market for information and communications technologies continues to grow. In order to succeed in the future, we continue to invest heavily in the key to our success: our network infrastructure. In 2019, we made global investments (before spectrum) of EUR 13.1 billion. In the fixed network, our investments were focused on building out the fiber-optic network and deploying vectoring technology. In mobile communications, we invested in LTE and 5G, increased network coverage, and upgraded capacity to meet increasing demand for high-speed data transmission rates. Including spectrum payments, this figure was EUR 14.4 billion in the reporting year. Despite this high level of investment, our rating remained solid through 2019, and we had unrestricted access to the capital market at all times.

There is a sustainable dividend policy for shareholders, which is subject to approval by the relevant bodies and the fulfillment of other legal requirements. For the 2019 financial year, in keeping with our dividend policy as updated in November 2019, we plan to propose a dividend of EUR 0.60 per dividend-bearing share, which will also serve as a baseline for the dividend going forward. Starting from the 2020 financial year, the dividend is 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.

Against this backdrop, 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. This is what we believe in and what we are working to achieve.

COMPARISON OF THE GROUP'S EXPECTATIONS WITH ACTUAL FIGURES

In the 2018 Annual Report, we outlined expectations for the 2019 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 2018, the results expected for the reporting year, and the actual results achieved in 2019. The performance indicators that we also forecast in the 2018 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 2018	Expectations for 2019	Results in 2019
ROCE	%	4.7	increase	5.1
Net revenue	billions of €	76.4	slight increase	80.5
Profit (loss) from operations (EBIT)	billions of €	8.0	increase	9.5
EBITDA AL (adjusted for special factors)	billions of €	23.2	24.1[a]	24.7
Free cash flow AL (before dividend payments and spectrum investment)	billions of €	6.0	6.7	7.0
Cash capex (before spectrum investment)	billions of €	(12.4)	(12.9)[a]	(13.1)
Rating (Standard & Poor's, Fitch)		BBB+	from A- to BBB	BBB+
Rating (Moody's)		Baa1	from A3 to Baa2	Baa1

[a] Contrary to the forecasts published in the 2018 combined management report (2018 Annual Report), we adjusted our 2019 guidance figures in the course of the reporting year and now expect to post adjusted EBITDA AL of around EUR 24.1 billion (up from around EUR 23.9 billion) and cash capex (before spectrum investments) of around EUR 12.9 billion (up from around EUR 12.7 billion) (Interim Group Report as of September 30, 2019).

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

		Pro forma figures for 2018	Expectations for 2019	Results in 2019
Customer satisfaction (TRI*M index)		67.7	slight increase	67.3
Employment satisfaction (commitment index)		4.1	stable trend	4.0
FIXED-NETWORK AND MOBILE CUSTOMERS				
GERMANY				
Mobile customers	millions	44.2	increase	46.2
Fixed-network lines	millions	18.6	decrease	17.8
Retail broadband lines	millions	13.6	slight increase	13.7
UNITED STATES				
Branded postpaid	millions	42.5	increase	47.0
Branded prepay	millions	21.1	slight increase	20.9
EUROPE				
Mobile customers	millions	50.5	slight increase	46.2
Fixed-network lines	millions	9.1	stable trend	9.1
Broadband customers	millions	6.4	increase	6.7
SYSTEMS SOLUTIONS				
Order entry	billions of €	6.8	increase	7.3

We look back on a successful financial year. Our performance in 2019 was once again dominated by substantial growth in revenue and adjusted EBITDA AL. Revenue reached EUR 80.5 billion, achieving the expected rate of increase – adjusted for exchange rate effects and changes in the composition of the Group, we also recorded an increase of EUR 2.2 billion or 2.8 percent. Adjusted EBITDA AL also increased significantly to EUR 24.7 billion – adjusted for exchange rate effects and changes in the composition of the Group, it came in at around EUR 24.1 billion, slightly higher than our most recent guidance. EBIT also echoed this clear growth trend, up by EUR 1.5 billion or 18.2 percent. Free cash flow AL amounted to EUR 7.0 billion, i.e., slightly above our expectations even before adjustments for positive exchange rate effects. At EUR 13.1 billion, cash capex (before spectrum investment) exceeded our most recent guidance figure; this was also due to positive exchange rate effects. Our key performance indicator ROCE (return on capital employed) improved by 0.4 percentage points in the reporting period to 5.1 percent. Growth was thus in line with our expectations.

We are also well on track with our non-financial key performance indicators. The customer base of our Germany operating segment developed as expected. In the United States operating segment, the number of branded postpaid customers continued to rise sharply. After factoring in an intra-year adjustment to the customer base, we recorded 0.3 million branded prepay customer additions. In our Europe operating segment, the total number of mobile customers declined by 8.7 percent to 46.2 million. This decline was largely a result of portfolio streamlining activities and the sale of the national company in Albania. Adjusted for these effects, the mobile customer base was down slightly year-on-year. The number of high-value contract customers rose by 3.4 percent compared with the end of the prior year. Order entry at our Systems Solutions operating segment improved markedly in 2018. This growth is primarily due to a positive trend in our growth areas, in particular digital solutions, public cloud, and also road charging.

At the end of the reporting year, customer satisfaction came in at 67.3 points versus 68.5 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 2019 on the basis of the new structures these changes entailed. The new baseline thus diverges from the figure of 67.7 reported as of December 31, 2018. While the scores for the Germany and Europe operating segments remained largely stable, the negative trend at Group level was the result of a decline in the previously above-average customer satisfaction rating in our Systems Solutions operating segment amidst its transformation efforts. Our goal for the coming years is to again 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."

FIRST-TIME APPLICATION OF NEW ACCOUNTING STANDARDS

The IFRS 16 "Leases" accounting standard has been applied since January 1, 2019. The presentation of the financial position and the results of operations of the Group are materially influenced by the application of this standard. Since the start of the 2019 financial year, we have taken the effects of the mandatory first-time application into account when determining our financial performance indicators.

For further information on IFRS 16, please refer to the sections "Management of the Group" and "Summary of accounting policies" in the notes to the consolidated financial statements.

RESULTS OF OPERATIONS OF THE GROUP

NET REVENUE

In 2019, we generated net revenue of EUR 80.5 billion, which was 6.4 percent or EUR 4.9 billion up on the prior-year level. Even adjusted for positive net exchange rate effects of EUR 1.9 billion – mainly from the translation of U.S. dollars into euros – as well as positive effects of changes in the composition of the Group in the net amount of EUR 0.7 billion resulting primarily from the acquisitions of UPC Austria and Tele2 Netherlands, revenue increased by EUR 2.2 billion or 2.8 percent.

Our United States operating segment contributed to the positive revenue trend with an increase of 10.7 percent – or, adjusted for exchange rate effects, of 5.0 percent. This increase was due primarily to higher service revenues from the rise in the average branded customer base, triggered in particular by the continued growth in existing and greenfield markets, and the growing success in new customer segments and rate plans. In our German home market, revenue increased by 0.9 percent compared with the prior year, due in particular to the strong performance in mobile business, which benefited from higher service and terminal equipment revenues, and higher IT and broadband revenues from fixed-network business. In our Europe operating segment, revenue was up by 2.4 percent year-on-year; adjusted for exchange rate effects and for the inclusion of UPC Austria and the sale of Telekom Albania, it increased by 1.4 percent. Factors in this increase were growth in revenue from our broadband, TV, and wholesale business. Mobile revenue remained at a consistently high level. Total revenue in our Systems Solutions operating segment was down 1.9 percent year-on-year. The upward revenue trend in our growth areas public cloud, security, and health was not sufficient to offset the declines in traditional IT operations and in telecommunications business. Revenue in our Group Development operating segment increased significantly year-on-year on the back of positive developments in operations in the Netherlands and in the GD Towers unit, due in particular to the revenue contributions from Tele2 Netherlands taken into account since the beginning of 2019.

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

Contribution of the segments to net revenue

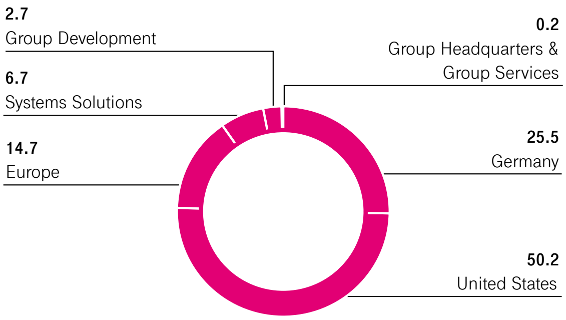
millions of €

	2019	2018	Change	Change %	2017
NET REVENUE	**80,531**	**75,656**	**4,875**	**6.4**	**74,947**
Germany[a]	21,886	21,700	186	0.9	21,931
United States	40,420	36,522	3,898	10.7	35,736
Europe	12,168	11,885	283	2.4	11,589
Systems Solutions	6,805	6,936	(131)	(1.9)	6,918
Group Development	2,797	2,185	612	28.0	2,263
Group Headquarters & Group Services[a]	2,620	2,735	(115)	(4.2)	2,935
Intersegment revenue	(6,166)	(6,307)	141	2.2	(6,425)

[a] We assigned Vivento Customer Services GmbH, a provider of call center services, to our Germany operating segment as of January 1, 2018; previously it was part of our Group Headquarters & Group Services segment. The comparative figures for 2017 have been adjusted accordingly.

Contribution of the segments to net revenue[a]

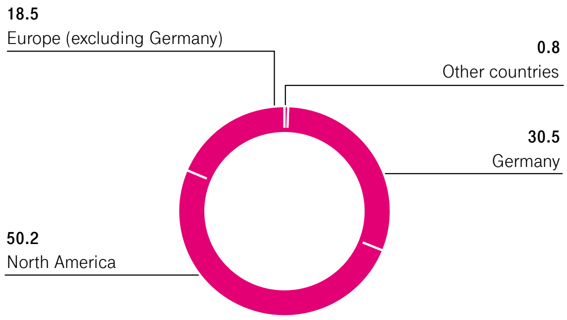
%



[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 50.2 percent, our United States operating segment again provided the largest contribution to net revenue of the Group and was up 1.9 percentage points above the level in the prior year. The proportion of net revenue generated internationally increased from 67.8 percent to 69.5 percent.

EBITDA AL, ADJUSTED EBITDA AL

Excluding special factors, adjusted EBITDA AL increased year-on-year by EUR 1.7 billion or 7.2 percent to EUR 24.7 billion in 2019. This increase was attributable to positive net exchange rate effects of EUR 0.5 billion and slightly positive effects of changes in the composition of the Group. Excluding these effects, adjusted EBITDA AL increased by EUR 1.0 billion or 4.2 percent. All operating segments made a positive contribution to this development: Adjusted EBITDA AL of our United States operating segment had a noticeably positive effect on the back of the higher service revenue. Our Germany operating segment contributed to this result thanks to a positive revenue trend, lower personnel costs, and the successful implementation of further efficiency enhancement and digitalization measures with 2.4 percent higher adjusted EBITDA AL. Adjusted EBITDA AL in our Europe operating segment increased by 5.0 percent. Even adjusted for the inclusion of UPC Austria and the sale of Telekom Albania, and assuming constant exchange rates, it grew by 3.1 percent. Successfully implemented efficiency enhancement measures are taking effect in our Systems Solutions operating segment in the form of higher adjusted EBITDA AL. The increase in adjusted EBITDA AL in our Group Development operating segment was driven by revenue growth and efficient management of costs as well as by the earnings contributed by Tele2 Netherlands, acquired in early 2019.

Contribution of the segments to adjusted Group EBITDA AL

	2019 millions of €	Proportion of adjusted Group EBITDA AL %	2018 millions of €	Proportion of adjusted Group EBITDA AL %	Change millions of €	Change %	2017 millions of €
EBITDA AL (ADJUSTED FOR SPECIAL FACTORS) IN THE GROUP[a]	**24,731**	**100.0**	**23,074**	**100.0**	**1,657**	**7.2**	**n.a.**
Germany[b]	8,720	35.3	8,516	36.9	204	2.4	n.a.
United States	11,134	45.0	10,084	43.7	1,050	10.4	n.a.
Europe	4,005	16.2	3,813	16.5	192	5.0	n.a.
Systems Solutions	519	2.1	442	1.9	77	17.4	n.a.
Group Development	1,033	4.2	892	3.9	141	15.8	n.a.
Group Headquarters & Group Services[b]	(651)	(2.6)	(601)	(2.6)	(50)	(8.3)	n.a.
Reconciliation	(29)	(0.1)	(72)	(0.3)	43	59.7	n.a.

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

[b] We assigned Vivento Customer Services GmbH, a provider of call center services, to our Germany operating segment as of January 1, 2018; previously it was part of our Group Headquarters & Group Services segment.

EBITDA AL increased by EUR 1.6 billion or 7.3 percent year-on-year to EUR 23.1 billion, with special factors changing from EUR -1.5 billion to EUR -1.6 billion. Net expenses incurred in connection with staff-related measures were recorded as special factors and decreased by EUR 0.2 billion year-on-year to EUR -0.9 billion. In addition, expenses of EUR 0.6 billion incurred in connection with the approval process for the business combination of T-Mobile US and Sprint were recorded as special factors. In the prior year, expenses incurred in this context accounted for EUR 0.2 billion. The transfer of our stake of around 11 percent in Ströer SE & Co. KGaA to Deutsche Telekom Trust e.V. as plan assets in August 2019 resulted in income from divestitures classified as special factors of EUR 0.1 billion.

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

EBIT

Group EBIT stood at EUR 9.5 billion in the reporting year, up EUR 1.5 billion or 18.2 percent against the prior year. This increase is partly due to the effects described under EBITDA AL. At EUR 17.7 billion, depreciation, amortization and impairment losses were EUR 3.8 billion higher than in the prior year, due in particular to the depreciation charge for right-of-use assets required to be recognized for the first time in accordance with IFRS 16. In the prior-year period, expenses had been recognized in EBITDA in connection with operating leases. Impairment losses on intangible assets and property, plant and equipment – mainly in our Europe operating segment in the national company in Romania – reduced EBIT by EUR 0.4 billion in total. In the prior year, impairment losses totaling EUR 0.7 billion had been recognized, mainly on goodwill in the Europe operating segment in the national companies in Poland and Romania. Depreciation of property, plant and equipment and amortization of intangible assets were EUR 0.5 billion higher than in the prior year, mainly due to the consistently high investment volume in past years – the prior-year period had included depreciation and amortization on finance lease assets.

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

At EUR 7.3 billion, profit before income taxes was EUR 2.1 billion higher than in the prior year, with loss from financial activities decreasing by EUR 0.7 billion to EUR 2.2 billion. This improvement was attributable in particular to an increase of EUR 0.6 billion in the share of profit/loss of associates and joint ventures accounted for using the equity method, up from EUR 0.1 billion. This item had been negatively impacted by an effect of EUR 0.6 billion in 2018 due to the settlement in connection with ending the Toll Collect arbitration proceedings. Other financial income/expense also improved by EUR 0.6 billion to EUR 0.1 billion, mainly due to positive measurement effects from embedded derivatives at T-Mobile US. By contrast, finance costs increased by EUR 0.5 billion, because the subsequent measurement of recognized lease liabilities since the application of IFRS 16 added EUR 0.9 billion to finance costs. Favorable refinancing terms had a reducing effect on finance costs compared with the prior year.

NET PROFIT/LOSS, ADJUSTED NET PROFIT/LOSS

Net profit increased year-on-year by EUR 1.7 billion to EUR 3.9 billion. Tax expense came to EUR 2.0 billion compared with EUR 1.8 billion in the prior year. Profit attributable to non-controlling interests increased by EUR 0.2 billion year-on-year to EUR 1.4 billion, mainly in our United States operating segment. Excluding special factors, which had an effect of EUR 1.1 billion on net profit, adjusted net profit in 2019 amounted to EUR 4.9 billion, i.e., EUR 0.4 billion higher than in the prior year.

(UNADJUSTED) 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, 2019. With net profit in the amount of EUR 3.9 billion, this gives earnings per share of EUR 0.82. Unadjusted earnings per share in the prior year had amounted to EUR 0.46. Adjusted earnings per share increased to EUR 1.04 in the reporting year. Adjusted earnings per share in the prior year had amounted to EUR 0.96.

For further information on the development of our results of operations, please refer to the disclosures under "Notes to the consolidated income statement" in the notes to the consolidated financial statements.

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

millions of €	EBITDA AL 2019	EBIT 2019	EBITDA AL 2018	EBIT 2018	EBITDA AL 2017	EBIT 2017
EBITDA AL/EBIT	**23,143**	**9,457**	**21,577**	**8,001**	**n.a.**	**9,383**
GERMANY	**(425)**	**(425)**	**(598)**	**(598)**	**(308)**	**(308)**
Staff-related measures	(396)	(396)	(565)	(565)	(221)	(221)
Non-staff-related restructuring	(38)	(38)	(46)	(46)	(26)	(26)
Effects of deconsolidations, disposals and acquisitions	0	0	0	0	0	0
Impairment losses	0	0	0	0	0	0
Other	9	9	13	13	(61)	(61)
UNITED STATES	**(544)**	**(544)**	**(160)**	**(160)**	**1,633**	**1,633**
Staff-related measures	(17)	(17)	(15)	(15)	(7)	(7)
Non-staff-related restructuring	0	0	0	0	0	0
Effects of deconsolidations, disposals and acquisitions	(527)	(527)	(145)	(145)	(11)	(11)
Impairment losses	0	0	0	0	1,651	1,651
Other	0	0	0	0	0	0
EUROPE	**(146)**	**(466)**	**(122)**	**(797)**	**(130)**	**(995)**
Staff-related measures	(116)	(116)	(90)	(90)	(93)	(93)
Non-staff-related restructuring	0	0	0	0	(3)	(3)
Effects of deconsolidations, disposals and acquisitions	(23)	(23)	(14)	(14)	18	18
Impairment losses	0	(320)	0	(674)	0	(865)
Other	(8)	(8)	(19)	(19)	(53)	(53)
SYSTEMS SOLUTIONS	**(331)**	**(358)**	**(266)**	**(322)**	**(229)**	**(1,477)**
Staff-related measures	(169)	(169)	(194)	(194)	(132)	(132)
Non-staff-related restructuring	(5)	(5)	(4)	(4)	(2)	(2)
Effects of deconsolidations, disposals and acquisitions	(11)	(11)	0	0	0	0
Impairment losses	0	(27)	0	(56)	0	(1,248)
Other	(146)	(146)	(68)	(68)	(94)	(94)
GROUP DEVELOPMENT	**97**	**97**	**(27)**	**(27)**	**893**	**893**
Staff-related measures	(19)	(19)	(6)	(6)	1	1
Non-staff-related restructuring	(1)	(1)	0	0	(5)	(5)
Effects of deconsolidations, disposals and acquisitions	111	111	(21)	(21)	708	708
Impairment losses	0	0	0	0	0	0
Other	4	4	(1)	(1)	189	189
GROUP HEADQUARTERS & GROUP SERVICES	**(239)**	**(239)**	**(322)**	**(322)**	**(119)**	**(119)**
Staff-related measures	(197)	(197)	(288)	(288)	(107)	(107)
Non-staff-related restructuring	(38)	(38)	(59)	(59)	(49)	(49)
Effects of deconsolidations, disposals and acquisitions	(13)	(13)	(44)	(44)	63	63
Impairment losses	0	0	0	0	0	0
Other	9	9	69	69	(26)	(26)

millions of €	EBITDA AL 2019	EBIT 2019	EBITDA AL 2018	EBIT 2018	EBITDA AL 2017	EBIT 2017
GROUP	**(1,589)**	**(1,959)**	**(1,497)**	**(2,204)**	**1,740**	**(374)**
Staff-related measures	(913)	(913)	(1,159)	(1,159)	(559)	(559)
Non-staff-related restructuring	(81)	(81)	(109)	(109)	(85)	(85)
Effects of deconsolidations, disposals and acquisitions	(462)	(462)	(223)	(223)	778	778
Impairment losses	0	(370)	0	(707)	1,651	(463)
Other	(132)	(132)	(6)	(6)	(45)	(45)
EBITDA AL/EBIT (ADJUSTED FOR SPECIAL FACTORS)	**24,731**	**11,416**	**23,074**	**10,204**	**n.a.**	**9,757**
Profit (loss) from financial activities (adjusted for special factors)		(2,192)		(2,091)		(2,895)
PROFIT (LOSS) BEFORE INCOME TAXES (ADJUSTED FOR SPECIAL FACTORS)		**9,223**		**8,114**		**6,863**
Income taxes (adjusted for special factors)		(2,454)		(2,225)		949
PROFIT (LOSS) (ADJUSTED FOR SPECIAL FACTORS)		**6,770**		**5,889**		**7,812**
PROFIT (LOSS) (ADJUSTED FOR SPECIAL FACTORS) ATTRIBUTABLE TO						
Owners of the parent (net profit (loss)) (adjusted for special factors)		4,948		4,545		6,039
Non-controlling interests (adjusted for special factors)		1,822		1,344		1,773

millions of €	2019	2018	Change	Change %	2017
NET PROFIT (LOSS)	**3,867**	**2,166**	**1,701**	**78.5**	**3,461**
Special factors affecting EBITDA	(1,589)	(1,497)	(92)	(6.1)	1,740
Staff-related measures	(913)	(1,159)	246	21.2	(559)
Non-staff-related restructuring	(81)	(109)	28	25.7	(85)
Effects of deconsolidations, disposals and acquisitions	(462)	(223)	(239)	n.a.	778
Impairment losses	0	0	0	n.a.	1,651
Other	(132)	(6)	(126)	n.a.	(45)
Special factors affecting net profit	508	(882)	1,390	n.a.	(4,318)
Impairment losses	(370)	(707)	337	47.7	(2,114)
Profit (loss) from financial activities	(4)	(757)	753	99.5	(1,495)
Income taxes	461	401	60	15.0	(392)
Non-controlling interests	421	181	240	n.a.	(317)
TOTAL SPECIAL FACTORS	**(1,081)**	**(2,379)**	**1,298**	**54.6**	**(2,578)**
ADJUSTED NET PROFIT (LOSS)	**4,948**	**4,545**	**403**	**8.9**	**6,039**

FINANCIAL POSITION OF THE GROUP

Condensed consolidated statement of financial position

millions of €

	Dec. 31, 2019	Share of total assets/ liabilities and share-holders' equity %	Change	Dec. 31, 2018	Share of total assets/ liabilities and share-holders' equity %	Dec. 31, 2017	Dec. 31, 2016	Dec. 31, 2015
ASSETS								
CURRENT ASSETS	**24,689**	**14.5**	**2,819**	**21,870**	**15.0**	**20,392**	**26,638**	**32,184**
Cash and cash equivalents	5,393	3.2	1,714	3,679	2.5	3,312	7,747	6,897
Trade receivables	10,846	6.4	858	9,988	6.9	9,723	9,362	9,238
Contract assets	1,876	1.1	111	1,765	1.2	n.a.	n.a.	n.a.
Non-current assets and disposal groups held for sale	97	0.1	(48)	145	0.1	161	372	6,922
Other current assets	6,477	3.8	184	6,293	4.3	7,196	9,157	9,127
NON-CURRENT ASSETS	**145,983**	**85.5**	**22,478**	**123,505**	**85.0**	**120,943**	**121,847**	**111,736**
Intangible assets	68,202	40.0	3,252	64,950	44.7	62,865	60,599	57,025
Property, plant and equipment	49,548	29.0	(1,083)	50,631	34.8	46,878	46,758	44,637
Right-of-use assets	17,998	10.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Capitalized contract costs	2,075	1.2	331	1,744	1.2	n.a.	n.a.	n.a.
Investments accounted for using the equity method	489	0.3	(87)	576	0.4	651	725	822
Other non-current assets	7,671	4.5	2,067	5,604	3.9	10,548	13,765	9,252
TOTAL ASSETS	**170,672**	**100.0**	**25,297**	**145,375**	**100.0**	**141,334**	**148,485**	**143,920**
LIABILITIES AND SHAREHOLDERS' EQUITY								
CURRENT LIABILITIES	**32,913**	**19.3**	**3,769**	**29,144**	**20.0**	**27,366**	**33,126**	**33,548**
Financial liabilities	11,463	6.7	936	10,527	7.2	8,358	14,422	14,439
Lease liabilities	3,987	2.3	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Trade and other payables	9,431	5.5	(1,304)	10,735	7.4	10,971	10,441	11,090
Current provisions	3,082	1.8	(62)	3,144	2.2	3,372	3,068	3,367
Contract liabilities	1,608	0.9	(112)	1,720	1.2	n.a.	n.a.	n.a.
Liabilities directly associated with non-current assets and disposal groups held for sale	29	0.0	(7)	36	0.0	0	194	4
Other current liabilities	3,313	1.9	331	2,982	2.1	4,664	5,001	4,648
NON-CURRENT LIABILITIES	**91,528**	**53.6**	**18,734**	**72,794**	**50.1**	**71,498**	**76,514**	**72,222**
Financial liabilities	54,886	32.2	3,138	51,748	35.6	49,171	50,228	47,941
Lease liabilities	15,848	9.3	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Non-current provisions	9,412	5.5	619	8,793	6.0	11,530	11,771	11,006
Other non-current liabilities	10,925	6.4	(743)	11,668	8.0	10,798	14,515	13,275
Contract liabilities	456	0.3	(129)	585	0.4	n.a.	n.a.	n.a.
SHAREHOLDERS' EQUITY	**46,231**	**27.1**	**2,794**	**43,437**	**29.9**	**42,470**	**38,845**	**38,150**
TOTAL LIABILITIES AND SHAREHOLDERS' EQUITY	**170,672**	**100.0**	**25,297**	**145,375**	**100.0**	**141,334**	**148,485**	**143,920**

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 170.7 billion as of December 31, 2019, up by EUR 25.3 billion against December 31, 2018. The recognition of right-of-use assets and current and non-current lease liabilities resulting from the **first-time application of the IFRS 16 "Leases" accounting standard** had a significant impact.

Cash and cash equivalents increased by EUR 1.7 billion year-on-year.

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

Trade receivables increased by EUR 0.9 billion to EUR 10.8 billion, mainly due to higher receivables in the Systems Solutions, United States, Group Development, and Germany operating segments. In the Systems Solutions operating segment, receivables increased mainly as a result of the expiration of a factoring transaction. Higher receivables in the United States operating segment were driven by a larger customer base, while in the Group Development operating segment, receivables increased as a result of the acquisition of Tele2 Netherlands and the resulting increase in the customer base. Exchange rate effects, especially from the translation of U.S. dollars into euros, also increased receivables.

Other current and non-current assets increased by EUR 2.3 billion to EUR 14.1 billion as follows: Other current and non-current financial assets increased by EUR 2.8 billion to EUR 7.3 billion, due in part to positive effects from the measurement of embedded derivatives at T-Mobile US (EUR 0.5 billion) and to the deposit of cash collateral in connection with forward-payer swaps concluded for future borrowings at T-Mobile US (EUR 0.6 billion). In addition, other financial assets increased by EUR 1.3 billion in connection with the change in approach as of the start of the third quarter of 2019 of capitalizing grants receivable from funding projects for the broadband build-out in Germany upon conclusion of the contract. By contrast, inventories decreased by EUR 0.2 billion to EUR 1.6 billion, primarily as a result of a reduction in mobile terminal equipment inventory levels in the Germany and United States operating segments.

Intangible assets increased by EUR 3.3 billion to EUR 68.2 billion. Additions totaling EUR 6.6 billion increased the carrying amount and mainly relate to capital expenditures in the Germany, United States, Europe, and Group Development operating segments. In the Germany operating segment, additions of EUR 2.2 billion relate to the 5G licenses acquired in Germany. In the United States operating segment, capital expenditures included a total of EUR 1.0 billion for the acquisition of FCC mobile licenses. In the Europe operating segment, 5G licenses acquired in Austria increased the carrying amount by EUR 0.1 billion. Changes in the composition of the Group increased the carrying amount by a further EUR 0.6 billion. The acquisition of Tele2 Netherlands in the Group Development operating segment resulted in identifiable intangible assets totaling EUR 0.5 billion at the acquisition date (including customer base and spectrum licenses) in addition to goodwill of EUR 0.1 billion. Positive exchange rate effects, primarily from the translation of U.S. dollars into euros, increased the carrying amount by EUR 0.8 billion. Amortizations reduced the net carrying amount by EUR 4.8 billion. This includes impairment losses of EUR 0.1 billion.

Property, plant and equipment decreased by EUR 1.1 billion compared with December 31, 2018 to EUR 49.5 billion. The first-time application of IFRS 16 as of January 1, 2019 accounted for a reduction of EUR 2.5 billion. Assets arising from finance leases that were reported under property, plant and equipment until December 31, 2018, for which Deutsche Telekom as the lessee bore substantially all the risks and rewards associated with the lease, are now recognized as rights to use the underlying leased assets. Depreciation and impairment losses of EUR 9.2 billion reduced the carrying amount. This included impairment losses of EUR 0.3 billion primarily relating to technical equipment and machinery in the Romania cash-generating unit in the Europe operating segment. Disposals of EUR 0.6 billion also reduced the carrying amount. Additions of EUR 10.6 billion – especially 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 – increased the carrying amount. Effects of changes in the composition of the Group resulting from the acquisition of Tele2 Netherlands increased the carrying amount by EUR 0.3 billion. Positive exchange rate effects, primarily from the translation of U.S. dollars into euros, increased the carrying amount by EUR 0.2 billion.

Rights to use lease assets were recognized in the amount of EUR 18.0 billion as of December 31, 2019. The remeasurement and reclassification effect reported amounted to EUR 16.2 billion as of January 1, 2019. This includes both rights to use lease assets recognized in the statement of financial position for the first time and rights to use assets arising from finance leases in the amount of EUR 2.5 billion that were previously disclosed under property, plant and equipment. The increase is a result of additions of EUR 5.5 billion relating mainly to leases concluded in the United States operating segment, and of EUR 0.2 billion from the effects of changes in the composition of the Group from the acquisition of Tele2 Netherlands. Positive exchange rate effects, primarily from the translation of U.S. dollars into euros, increased the carrying amount by EUR 0.2 billion. Depreciation and amortization totaling EUR 3.6 billion and disposals of EUR 0.4 billion had an offsetting effect.

Investments accounted for using the equity method decreased by EUR 0.1 billion to EUR 0.5 billion in the reporting year. This was primarily due to the transfer of the around 11 percent stake in Ströer SE & Co. KGaA to the plan assets of Deutsche Telekom Trust e.V. as of August 14, 2019 to cover existing pension obligations.

Current and non-current **financial liabilities** increased by EUR 4.1 billion to EUR 66.3 billion compared with the end of 2018. This was largely attributable to the euro bonds issued by Deutsche Telekom in 2019 with a total volume of EUR 4.5 billion and pound sterling bonds with a total volume of GBP 0.4 billion (EUR 0.5 billion). In addition, OTE issued a euro bond with a volume of EUR 0.4 billion. Scheduled repayments of U.S. dollar bonds totaling USD 1.8 billion (EUR 1.6 billion) and of euro bonds totaling EUR 0.8 billion among other things had an offsetting effect. Liabilities to banks increased by EUR 0.8 billion in connection with short-term borrowing. Financial liabilities increased in connection with the spectrum licenses acquired in Germany. In place of a lump-sum payment, government representatives agreed to let us pay the purchase price in annual installments through 2030. After deducting collateral and the first, already paid installment, financial liabilities increased by EUR 2.0 billion. The transition to IFRS 16 resulted in finance lease liabilities being reclassified from financial liabilities to lease liabilities. Based on the carrying amounts as of December 31, 2018, this reclassification reduced financial liabilities by EUR 2.5 billion. The measurement of forward-payer swaps concluded for future borrowings at T-Mobile US gave rise to a remeasurement loss recognized directly in equity of EUR 0.6 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.

The first-time application of IFRS 16 led to the recognition of current and non-current **lease liabilities** totaling EUR 18.1 billion. These also included the finance lease liabilities that used to be reported under financial liabilities. The carrying amount of the recognized lease liabilities increased to EUR 19.8 billion as of December 31, 2019. Lease liabilities primarily relate to the United States operating segment.

Trade and other payables decreased year-on-year by EUR 1.3 billion to EUR 9.4 billion. The reduction in the level of liabilities in the United States, Europe, and Germany operating segments contributed to this decrease. Exchange rate effects from the translation from U.S. dollars into euros had an increasing effect.

Current and non-current **provisions** increased against the prior-year level by EUR 0.6 billion to EUR 12.5 billion, of which EUR 5.8 billion (December 31, 2018: EUR 5.5 billion) related to provisions for pensions and other employee benefits. This increase is primarily due to interest rate adjustments and the decline in the share price of the stake in BT, which had been transferred to plan assets. The transfer of the stake of around 11 percent in Ströer SE & Co. KGaA to plan assets as of August 14, 2019 had an offsetting effect. At EUR 6.7 billion, other provisions were slightly higher than in the prior year.

Other current and non-current liabilities decreased by EUR 0.4 billion to EUR 14.2 billion as of December 31, 2019. These were reduced by liabilities of EUR 2.2 billion from straight-line leases, mainly for cell sites in the United States operating segment that were no longer required to be reported under IFRS 16. In connection with the change in approach for the accounting treatment of contractual grants receivable from funding projects for the broadband build-out in Germany, non-financial other liabilities of EUR 1.2 billion were recognized for existing build-out obligations.

Shareholders' equity increased by EUR 2.8 billion as of December 31, 2018 to EUR 46.2 billion, due in particular to profit of EUR 5.3 billion. Non-cash effects from currency translation of EUR 0.5 billion, capital increases from share-based payments of EUR 0.5 billion, and income taxes relating to components of other comprehensive income of EUR 0.3 billion increased shareholders' equity. The transition to IFRS 16 as of January 1, 2019 also increased the carrying amount by EUR 0.3 billion. The cumulative effect of this was an increase of EUR 0.3 billion in retained earnings (including shares attributable to non-controlling interests) recognized directly in equity as of January 1, 2019. The acquisition of Tele2 Netherlands in the Group Development operating segment resulted in transactions with owners which increased shareholders' equity by EUR 0.5 billion, and effects of EUR 0.2 billion from changes in the composition of the Group. The OTE share buy-back program reduced transactions with owners by EUR 0.1 billion. The carrying amount was reduced by dividend payments for the 2018 financial year to Deutsche Telekom AG shareholders in the amount of EUR 3.3 billion and to other shareholders of subsidiaries in the amount of EUR 0.2 billion. Shareholders' equity was also reduced by EUR 0.6 billion due to the remeasurement of defined benefit plans and by a total of EUR 0.6 billion due to losses from hedging instruments, mainly in connection with forward-payer swaps concluded for future borrowings at T-Mobile US.

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

For further information on the acquisition of Tele2 Netherlands, please refer to the section "Changes in the composition of the Group and other transactions" in the notes to the consolidated financial statements.

NET DEBT

Calculation of net debt

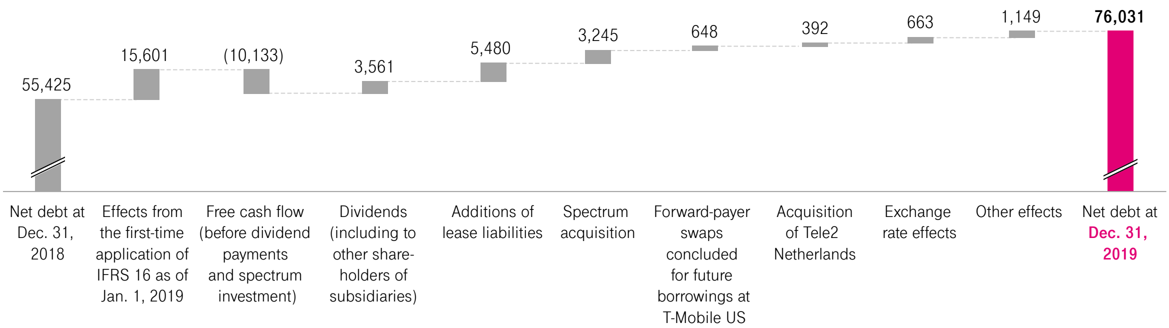
millions of €

	Dec. 31, 2019	Dec. 31, 2018	Change	Change %
Financial liabilities (current)	11,463	10,527	n.a.	n.a.
Financial liabilities (non-current)	54,886	51,748	n.a.	n.a.
Lease liabilities	19,835	n.a.	n.a.	n.a.
FINANCIAL LIABILITIES AND LEASE LIABILITIES	**86,184**	**62,275**	**n.a.**	**n.a.**
Accrued interest	(748)	(719)	(29)	(4.0)
Other	(739)	(928)	189	20.4
GROSS DEBT	**84,697**	**60,628**	**n.a.**	**n.a.**
Cash and cash equivalents	5,393	3,679	1,714	46.6
Derivative financial assets	2,333	870	1,463	n.a.
Other financial assets	940	654	286	43.7
NET DEBT	**76,031**	**55,425**	**n.a.**	**n.a.**

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.

Changes in net debt

millions of €



Our net debt increased from EUR 55.4 billion year-on-year to EUR 76.0 billion, largely due to the first-time application of IFRS 16. Other effects of EUR 1.1 billion include, among other factors, financing options under which the payments for trade payables become due at a later point in time by involving banks in the process, increased liabilities for the acquisition of broadcasting rights, 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, 2019 amounted to EUR 4.2 billion (December 31, 2018: EUR 4.7 billion). This mainly relates to factoring agreements in the United States and Germany operating segments. The agreements are used in particular for active receivables management.

Furthermore, in the reporting year, we chose financing options totaling EUR 0.7 billion (2018: EUR 0.2 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.

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.

The rating of Deutsche Telekom AG

	Standard & Poor's	Moody's	Fitch
LONG-TERM RATING			
Dec. 31, 2015	BBB+	Baa1	BBB+
Dec. 31, 2016	BBB+	Baa1	BBB+
Dec. 31, 2017	BBB+	Baa1	BBB+
Dec. 31, 2018	BBB+	Baa1	BBB+
Dec. 31, 2019	**BBB+**	**Baa1**	**BBB+**
OUTLOOK	**CreditWatch negative**	**Negative**	**Stable**
SHORT-TERM RATING	**A-2**	**P-2**	**F2**

Financial flexibility

		2019	2018	2017	2016	2015
RELATIVE DEBT $\frac{\text{Net debt}}{\text{EBITDA (adjusted for special factors)}}$		**2.65x**	**2.4x**	**2.3x**	**2.3x**	**2.4x**
EQUITY RATIO	%	**27.1**	**29.9**	**30.0**	**26.2**	**26.5**

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 €

	2019	2018	2017
Net cash from operating activities	23,074	17,948	17,196
Cash capex	(14,357)	(12,492)	(19,494)
Spectrum investment	1,239	269	7,395
CASH CAPEX (BEFORE SPECTRUM INVESTMENT)	**(13,118)**	**(12,223)**	**(12,099)**
Proceeds from the disposal of intangible assets (excluding goodwill) and property, plant and equipment	176	525	400
Free cash flow (before dividend payments and spectrum investment)	10,133	6,250	5,497
Repayment of lease liabilities[a,b]	(3,120)	(199)	n.a.
FREE CASH FLOW AL (BEFORE DIVIDEND PAYMENTS AND SPECTRUM INVESTMENT)[a]	**7,013**	**6,051**	**n.a.**

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

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

Free cash flow of the Group before dividend payments and spectrum investment grew from EUR 6.2 billion in the prior year to EUR 10.1 billion, with **net cash from operating activities** increasing by EUR 5.1 billion to EUR 23.1 billion. Due to the first-time application of the IFRS 16 accounting standard, the principal repayment portion of lease payments is presented in net cash used in/from financing activities. These payments totaling EUR 3.1 billion were taken into account in the calculation of free cash flow AL. The strong performance of our operating segments, in particular the United States, significantly increased net cash from operating activities. Compared with the prior year, factoring agreements – especially in the Germany and Systems Solutions operating segments – resulted in negative effects of EUR 0.3 billion on net cash from operating activities. In addition, in the previous year, dividends received in the amount of EUR 0.2 billion had had an increasing effect. Net cash from operating activities was also reduced by a EUR 0.5 billion increase in net interest payments and a EUR 0.1 billion increase in tax payments in the reporting year.

Cash capex (before spectrum investment) increased by EUR 0.9 billion compared with 2018. This increase relates almost entirely to the United States operating segment and was primarily attributable to the infrastructure build-out for the 600 MHz spectrum, which also lays the groundwork for 5G. Other capital expenditures were focused primarily on the Germany and Europe operating segments and went toward the build-out and upgrade of our networks. Exchange rate effects increased free cash flow AL and cash capex.

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 €		2019	2018	2017
ROCE	%	**5.1**	**4.7**	**5.8**
Profit (loss) from operations (EBIT)		9,457	8,001	9,383
Share of profit (loss) of associates and joint ventures accounted for using the equity method		87	(529)	76
Interest component of unrecognized rental and lease obligations[a]		n.a.	630	525
Other NOP adjustments		n.a.	1	0
NET OPERATING PROFIT (NOP)		**9,544**	**8,103**	**9,984**
Tax (imputed tax rate 2019: 27.8%; 2018: 27.8%; 2017: 31.5%)		(2,653)	(2,253)	(3,145)
NET OPERATING PROFIT AFTER TAXES (NOPAT)		**6,891**	**5,850**	**6,839**
Cash and cash equivalents		5,393	3,679	3,312
Operating working capital		2,983	(511)	(3,555)
Intangible assets		68,202	64,950	62,865
Property, plant and equipment		49,548	50,631	46,878
Right-of-use assets[a]		17,998	n.a.	n.a.
Non-current assets and disposal groups held for sale and liabilities[b]		68	145	161
Investments accounted for using the equity method		489	576	651
Other assets		n.a.	331	410
Present value of unrecognized rental and lease obligations		n.a.	15,760	13,127
Other provisions		(6,663)	(6,435)	(6,527)
Other NOA adjustments		n.a.	0	0
NET OPERATING ASSETS (NOA)		**138,018**	**129,126**	**117,322**
AVERAGE NET OPERATING ASSETS (Ø NOA)		**135,618**	**124,024**	**118,927**

[a] The calculation method used to determine this financial performance indicator was adjusted as a result of the new IFRS 16 accounting standard.

[b] Excluding the carrying amounts of companies accounted for using the equity method.

ROCE improved in the reporting year by 0.4 percentage points to 5.1 percent. This positive trend was due to a substantial increase in net operating profit after taxes (NOPAT), which posted stronger percentage growth than the average amount of net operating assets (NOA). The positive development in NOPAT was driven primarily by the increase in EBIT. The higher share of profit of associates and joint ventures accounted for using the equity method also had a positive effect; this item had been negatively impacted by an effect of EUR 0.6 billion in 2018 due to the settlement in connection with ending the Toll Collect arbitration proceedings. Overall, NOPAT amounted to EUR 6.9 billion in 2019, up from EUR 5.9 billion in 2018. The average amount of net operating assets (NOA) increased to EUR 135.6 billion in 2019 from EUR 124.0 billion in the prior year. This increase was due mainly to higher intangible assets (including spectrum acquisitions in Germany and the United States) and higher operating working capital. Other non-current assets remained virtually on a par with the prior-year level. The overall development of NOA 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.”

DEVELOPMENT OF BUSINESS IN THE OPERATING SEGMENTS

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

GERMANY

For further information on changes resulting from the first-time application of the IFRS 16 “Leases” accounting standard, please refer to the section “Management of the Group.”

CUSTOMER DEVELOPMENT

thousands	Dec. 31, 2019	Dec. 31, 2018	Change	Change %	Dec. 31, 2017
Mobile customers	46,189	44,202	1,987	4.5	43,125
Contract customers	25,291	25,435	(144)	(0.6)	25,887
Prepay customers	20,898	18,767	2,131	11.4	17,238
Fixed-network lines	17,824	18,625	(801)	(4.3)	19,239
Of which: retail IP-based	17,479	15,356	2,123	13.8	11,996
Retail broadband lines	13,730	13,561	169	1.2	13,209
Of which: optical fiber	8,529	7,236	1,293	17.9	5,803
Television (IPTV, satellite)	3,618	3,353	265	7.9	3,139
Unbundled local loop lines (ULLs)	4,638	5,236	(598)	(11.4)	6,138
Wholesale broadband lines	7,372	6,722	650	9.7	5,639
Of which: optical fiber	5,863	4,970	893	18.0	3,783

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. Thanks to the sustained popularity of our convergent MagentaEINS offering, our MagentaEINS customer base totaled 4.7 million at the end of 2019.

High demand for mobile rate plans with included data volumes resulted in an increase in the number of branded contract customers under the Telekom and congstar brands. Our initiatives in the automotive sector drove growth in the number of prepay customers.

We made further headway with our IP transformation program, and by the end of 2019 had migrated 24.8 million retail and wholesale lines to IP, bringing the total migration level to 99 percent of all lines.

We continued to see strong demand for our fiber-optic-based lines. As of the end of the reporting year, the number of these lines had increased to around 14.4 million overall. In other words, we connected 2,186 thousand lines to our fiber-optic network in Germany in 2019. 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 1,987 thousand mobile customers in 2019. Of these, 549 thousand were contract customers under our Telekom and congstar brands. The number of mobile contract customers with resellers (service providers) decreased, primarily due to the volatile developments at some of our service providers. The number of prepay customers increased by 2,131 thousand. The StreamOn option, with which customers can stream certain music, gaming, or video services without reducing their included data allowance, was extremely popular. At the end of 2019, around 3.1 million customers were using this option, up by almost 70 percent 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 with innovative products. Our focus is on convergent offerings and their further development – for instance, MagentaTV with exclusive access to a wide range of additional content in the Megathek library and via popular streaming services – as well as TV lines and fiber-optic lines. The number of broadband lines continues to rise steadily, with the growth in fiber-optic-based lines particularly marked. This year, we recorded an increase of 265 thousand in the number of TV customers. In the traditional fixed network, the number of lines decreased by 801 thousand.

Our MagentaZuhause rate plans offer a comprehensive product portfolio for the fixed network based on IP technology and rate plan-specific bandwidths. MagentaZuhause Hybrid bundles fixed-network and mobile technology in a single router. To date, 519 thousand customers have selected this innovative product.

Wholesale

As of December 31, 2019, fiber-optic lines accounted for 48.8 percent of all lines – 7.2 percentage points higher than at the end of 2018. This growth was driven largely by high demand for our contingent model. The number of unbundled local loop lines decreased by 598 thousand or 11.4 percent compared with the end of the prior year. This is due first to the move to higher-quality fiber-optic lines, and second to retail customers switching to cable operators. In addition, our wholesale customers are migrating their retail customers to their own fiber-optic lines. The total number of lines in the wholesale sector increased slightly against the prior year.

DEVELOPMENT OF OPERATIONS

millions of €

		2019	2018	Change	Change %	2017
TOTAL REVENUE		21,886	21,700	186	0.9	21,931
Consumers		11,621	11,543	78	0.7	11,797
Business Customers		6,181	6,082	99	1.6	6,017
Wholesale		3,739	3,720	19	0.5	3,747
Other		345	355	(10)	(2.8)	370
Profit from operations (EBIT)		4,063	3,969	94	2.4	4,276
EBIT margin	%	18.6	18.3			19.5
Depreciation, amortization and impairment losses		(4,256)	(4,042)	(214)	(5.3)	(3,828)
EBITDA		8,319	8,012	307	3.8	8,104
EBITDA AL[a]		8,295	7,918	377	4.8	n.a.
Special factors affecting EBITDA		(425)	(598)	173	28.9	(308)
EBITDA (adjusted for special factors)		8,744	8,610	134	1.6	8,412
EBITDA AL (ADJUSTED FOR SPECIAL FACTORS)[a]		8,720	8,516	204	2.4	n.a.
EBITDA AL margin (adjusted for special factors)[a]	%	39.8	39.2			n.a.
CASH CAPEX		(4,349)	(4,240)	(109)	(2.6)	(4,214)

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

Total revenue

Total revenue was up slightly year-on-year by 0.9 percent, mainly due to an increase of 2.4 percent in mobile business thanks to higher service and terminal equipment revenues. Higher IT and broadband revenues year-on-year had a positive effect on fixed-network business and almost completely offset the decrease in fixed-network revenue (primarily from voice components).

Revenue from **Consumers** grew by 0.7 percent 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 increased. Mobile business also grew – by 1.9 percent.

Revenue from **Business Customers** increased by 1.6 percent. Mobile revenues increased year-on-year by 3.5 percent and IT revenues by 19.0 percent. In the fixed network, by contrast, a decline was recorded in traditional voice telephony, due largely to the increasing number of customers moving to flat-rate plans in connection with the migration to IP.

Wholesale revenue was up slightly on the prior-year level, by 0.5 percent. Positive revenue contributions, largely from our contingent model and a regulation-induced price increase in ULL monthly charges, offset the generally declining level of revenues in ULL and voice business driven by volume losses.

EBITDA AL, adjusted EBITDA AL

EBITDA AL amounted to EUR 8.3 billion in 2019, an increase of 4.8 percent against the prior year. In addition to the positive contributions from the development of revenue, this increase was primarily due to lower personnel costs, mainly as a result of a lower headcount, and a decline in expenses recognized as special factors for socially responsible instruments in connection with the staff restructuring. The successful implementation of efficiency and digitalization measures also had a positive impact. Adjusted EBITDA AL increased by 2.4 percent to EUR 8.7 billion year-on-year due to the reasons mentioned. Our adjusted EBITDA AL margin increased to 39.8 percent, up from 39.2 percent in the prior year.

EBIT

Profit from operations increased by 2.4 percent to around EUR 4.1 billion year-on-year. EBIT was negatively affected by higher depreciation, amortization and impairment losses on account of sustained high investments in our network infrastructure.

Cash capex

Cash capex increased by 2.6 percent year-on-year. As part of our integrated network strategy, we again made significant investments in the broadband and fiber-optic rollout, our IP transformation, and our mobile infrastructure.

UNITED STATES

For further information on changes resulting from the first-time application of the IFRS 16 "Leases" accounting standard, please refer to the section "Management of the Group."

CUSTOMER DEVELOPMENT

thousands	Dec. 31, 2019	Dec. 31, 2018	Change	Change %	Dec. 31, 2017
Mobile customers	86,046	79,651	6,395	8.0	72,585
Branded customers[a]	67,895	63,656	4,239	6.7	58,715
Branded postpaid	47,034	42,519	4,515	10.6	38,047
Branded prepay[a]	20,860	21,137	(277)	(1.3)	20,668
Wholesale customers	18,152	15,995	2,157	13.5	13,870

[a] On July 18, 2019, we entered into an agreement whereby certain T-Mobile US branded prepaid products are now being offered and distributed by a current MVNO partner. As a result, we included a base adjustment to reduce branded prepaid customers by 616 thousand in the third quarter of 2019. Prospectively, from the agreement date new customer activity associated with these products is recorded within wholesale customers.

Total

At December 31, 2019, the United States operating segment (T-Mobile US) had 86.0 million customers, compared to 79.7 million customers at December 31, 2018. Compared to the year ended December 31, 2018, net customer additions remained stable at 7.0 million for the year ended December 31, 2019, due to the factors described below.

Branded customers. Branded postpaid net customer additions remained stable at 4.5 million for the year ended December 31, 2019. The increase resulted from higher branded postpaid phone net customer additions primarily due to lower churn, and higher branded postpaid other net customer additions primarily due to the higher number of connected devices; partially offset by higher deactivations from a growing customer base.

Branded prepay net customer additions were 339 thousand for the year ended December 31, 2019, compared to 460 thousand branded prepay net customer additions for the year ended December 31, 2018. The decrease in net customer additions was primarily due to continued competitor promotional activities in the marketplace, partially offset by lower churn.

Wholesale customers. Wholesale net customer additions were 2.2 million for the year ended December 31, 2019, compared to 2.1 million for the year ended December 31, 2018. The increase was due primarily to higher additions from the continued success of our M2M and MVNO partnerships.

DEVELOPMENT OF OPERATIONS

millions of €		2019	2018	Change	Change %	2017
TOTAL REVENUE		40,420	36,522	3,898	10.7	35,736
Profit from operations **(EBIT)**		5,488	4,634	854	18.4	5,930
EBIT margin	%	13.6	12.7			16.6
Depreciation, amortization and impairment losses		(7,777)	(5,294)	(2,483)	(46.9)	(5,019)
EBITDA		13,265	9,928	3,337	33.6	10,949
EBITDA AL[a]		10,590	9,924	666	6.7	n.a.
Special factors affecting EBITDA		(544)	(160)	(384)	n.a.	1,633
EBITDA (adjusted for special factors)		13,809	10,088	3,721	36.9	9,316
EBITDA AL (ADJUSTED FOR SPECIAL FACTORS)[a]		11,134	10,084	1,050	10.4	n.a.
EBITDA AL margin (adjusted for special factors)[a]	%	27.5	27.6			n.a.
CASH CAPEX		(6,369)	(4,661)	(1,708)	(36.6)	(11,932)

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

Total revenue
Total revenue for the United States operating segment of EUR 40.4 billion in 2019 increased by 10.7 percent, compared to EUR 36.5 billion in 2018. In U.S. dollars, T-Mobile US' total revenues increased by 5.0 percent year-over-year due primarily to an increase in service revenues driven by growth in our average branded customer base from the continued growth in existing and greenfield markets, including the growing success of new customer segments and rate plans such as Un-limited 55+, Military, Business, and Essentials, and growth in other connected devices and wearables, specifically the Apple watch; partially offset by lower branded postpaid phone Average Revenue per User (ARPU).

EBITDA AL, adjusted EBITDA AL
In euros, adjusted EBITDA AL increased by 10.4 percent to EUR 11.1 billion in 2019, compared to EUR 10.1 billion in 2018. Adjusted EBITDA AL margin of 27.5 percent in 2019 remained relatively flat compared to 2018. In U.S. dollars, adjusted EBITDA AL increased by 4.7 percent during the same period. Adjusted EBITDA AL increased due primarily to higher service revenues, as further discussed above. These increases were partially offset by higher employee-related costs, costs related to outsourced functions, commission costs including a USD 0.3 billion increase related to amortization expense from costs that were capitalized upon the adoption of IFRS 15 on January 1, 2018, and the impact from hurricane-related reimbursements of USD 0.2 billion received in 2018. There was no significant impact from hurricanes in 2019.

EBITDA AL for 2019 included special factors of EUR -0.5 billion compared to special factors of EUR -0.2 billion in 2018. The change in special factors was primarily due to an increase in expenses associated with the proposed Sprint transaction. Overall, EBITDA AL increased by 6.7 percent to EUR 10.6 billion in 2019, compared to EUR 9.9 billion in 2018, due to the factors described above, including special factors.

EBIT
EBIT increased to EUR 5.5 billion in 2019, compared to EUR 4.6 billion in 2018, driven by higher EBITDA AL as discussed above. Depreciation and amortization expense increased due to the application of IFRS 16 as of January 1, 2019, which results in higher depreciation charges for capitalized right-of-use-assets previously recognized as operating expenses for operating leases. Excluding the impacts of IFRS 16, depreciation increased due to network expansion, including the continued deployment of low band spectrum, including 600 MHz, and the nationwide launch of our 5G network; partially offset by lower depreciation expense resulting from a lower total number of customer devices under lease.

Cash capex
Cash capex increased to EUR 6.4 billion in 2019, compared to EUR 4.7 billion in 2018, primarily due to growth in network build-out as we continued deployment of low band spectrum, including 600 MHz, and the nationwide launch of our 5G network, and an increase in spectrum licenses acquired.

EUROPE

For further information on changes resulting from the first-time application of the IFRS 16 "Leases" accounting standard and changes in the organizational structure, please refer to the sections "Management of the Group" and "Group organization."

CUSTOMER DEVELOPMENT

thousands

		Dec. 31, 2019	Dec. 31, 2018	Change	Change %	Dec. 31, 2017
EUROPE, TOTAL	Mobile customers[a]	46,165	50,542	(4,377)	(8.7)	48,842
	Contract customers	27,566	26,665	901	3.4	25,483
	Prepay customers[a]	18,598	23,877	(5,279)	(22.1)	23,359
	Fixed-network lines[b,c]	9,105	9,039	66	0.7	8,439
	Of which: IP-based[c]	8,311	7,391	920	12.4	5,734
	Broadband customers	6,672	6,405	267	4.2	5,530
	Television (IPTV, satellite, cable)	4,945	4,835	110	2.3	4,244
	Unbundled local loop lines (ULLs)/wholesale PSTN	2,294	2,275	19	0.8	2,265
	Wholesale broadband lines	431	411	20	4.9	389
GREECE	Mobile customers	7,365	7,893	(528)	(6.7)	7,981
	Fixed-network lines	2,638	2,566	72	2.8	2,547
	Broadband customers	2,033	1,893	140	7.4	1,757
ROMANIA	Mobile customers	4,916	5,360	(444)	(8.3)	5,258
	Fixed-network lines	1,560	1,741	(181)	(10.4)	1,865
	Broadband customers	1,014	1,101	(87)	(7.9)	1,134
HUNGARY	Mobile customers	5,369	5,330	39	0.7	5,293
	Fixed-network lines	1,703	1,663	40	2.4	1,632
	Broadband customers	1,231	1,148	83	7.2	1,073
POLAND	Mobile customers	10,954	10,787	167	1.5	10,454
	Fixed-network lines	18	18	0	0.0	32
	Broadband customers	18	18	0	0.0	25
CZECH REPUBLIC	Mobile customers	6,265	6,188	77	1.2	6,176
	Fixed-network lines[c]	533	394	139	35.3	197
	Broadband customers	320	251	69	27.5	176
CROATIA	Mobile customers	2,274	2,273	1	0.0	2,244
	Fixed-network lines	908	931	(23)	(2.5)	967
	Broadband customers	621	618	3	0.5	624
SLOVAKIA	Mobile customers	2,428	2,369	59	2.5	2,243
	Fixed-network lines	860	853	7	0.8	858
	Broadband customers	576	543	33	6.1	516
AUSTRIA	Mobile customers[a]	5,019	7,194	(2,175)	(30.2)	5,702
	Fixed-network lines[b]	549	538	11	2.0	0
	Broadband customers	612	594	18	3.0	0
OTHER[d]	Mobile customers	1,576	3,149	(1,573)	(50.0)	3,490
	Fixed-network lines	335	333	2	0.6	340
	Broadband customers	249	238	11	4.6	225

[a] As of January 1, 2019, the portfolio of M2M SIM cards in Austria was streamlined. 2.4 million customers were deactivated. Prior-year comparatives were not adjusted.

[b] Following the acquisition of UPC Austria, we have reported fixed-network lines and broadband customers since the third quarter of 2018. The 2018 comparatives for fixed-network lines were adjusted to exclude TV-only customers.

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

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

Total

The markets in our segment also remained intensely competitive throughout the reporting year. We rose to this challenge, achieving an increase of 45.3 percent in the number of FMC customers as of December 31, 2019, thanks in particular to our convergent product portfolio, MagentaOne. We also made important progress on our journey to becoming an integrated provider of mobile and fixed-network products across our entire segment: Following the successful integration of UPC Austria, in May 2019 we added convergent products to our portfolio in Austria under the new Magenta brand. At the end of June 2019, we also began offering our customers in Poland the MagentaOne product bundle, which combines mobile communications over the fiber-optic-based internet and an entertainment package. We parted ways with our last remaining mobile-only subsidiary, Telekom Albania, on May 7, 2019.

Our broadband/TV operations are making progress consistently, not least thanks to our large-scale build-out of the network with state-of-the-art fiber-optic-based lines (FTTH, FTTB, and FTTC), in particular in the national companies of Greece and Hungary. As a result, the number of IP lines increased by 12.4 percent to 8.3 million as of December 31, 2019, also thanks to the migration from traditional PSTN lines to IP technology.

In our mobile business, we recorded growth in the number of high-value contract customers. The number of prepay customers decreased sharply, mainly due to the streamlining of the portfolio in Austria and the sale of Telekom Albania. In addition, our national companies in Greece and Romania recorded reductions in their prepay customer bases. The positive outcome of the 5G spectrum auction in Austria in the first quarter of 2019 marked the achievement of a first major milestone in the rollout of 5G in our Europe operating segment: Our national company in Austria has now put the first 5G cell sites into operation using the spectrum acquired in the 3.4 to 3.8 GHz range. Successful testing is already underway in other countries. The plan is to add more 5G networks following the anticipated spectrum auctions in 2020.

Mobile communications

The number of mobile customers totaled 46.2 million at the end of the reporting year, down by 8.7 percent or 4.4 million customers compared with the end of 2018. Two main effects contributed to this decline: Firstly, the streamlining of the prepay portfolio at our Austrian subsidiary, which resulted in the removal of 2.4 million cross-border M2M SIM cards from our customer base. We had made these cards available internally to the Germany segment. The second factor was the sale of our national company in Albania. Adjusted for these two effects, the mobile customer base was down only slightly year-on-year. The number of high-value contract customers rose by 3.4 percent compared with the end of the prior year. Overall, all of our national companies reported positive trends in their contract customer base, with particularly high growth recorded in Poland, Hungary, Slovakia, and Austria. Contract customers accounted for 59.7 percent of the total customer base. In the reporting year, our innovative services and rate plans were joined in several 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, 2019, we already covered 97.6 percent of the population in the countries of our operating segment with LTE, reaching around 107 million people in total.

Fixed network

Our TV and entertainment services saw customer growth of 2.3 percent to a total of 4.9 million customers as of December 31, 2019, partly as a result of new business in Croatia and partly from the stronger customer growth in Hungary and the Czech Republic. The lower customer numbers in our national companies in Romania and Austria were more than offset by growth in the remaining national companies. With both telecommunication providers and OTT players offering TV services, the TV market is already saturated in many countries of our segment.

The broadband business also recorded growth of 4.2 percent compared with the end of the prior year to 6.7 million customers. In particular, the customer bases of our national companies in Greece, Hungary, and the Czech Republic saw growth, partly on the back of sustained high investment in innovative fiber-optic-based technologies. For example, we increased household coverage with optical fiber at our four largest national companies to 3.3 million households as of December 31, 2019 (December 31, 2018: 2.6 million).

Consistent growth in IP-based lines as a percentage of all fixed-network lines confirms that we are making good progress: At the end of December 2019, this share amounted to 91.3 percent. The number of fixed-network lines in our Europe operating segment increased slightly year-on-year to 9.1 million.

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 the reporting year, we had 4.8 million FMC customers; this corresponds to significant growth of 45.3 percent or 1.5 million additions compared with the end of the prior year. The main driver of this trend was our national company in Greece, which since fall 2018 also offers its convergent product portfolio to prepay customers. Additionally, the first FMC customer figures were reported by our national company in Austria, which has been offering convergent product bundles since the launch of the new Magenta brand. Pleasing customer growth trends were reported in Hungary, the Czech Republic, and Slovakia. We have also been increasingly successful in marketing our MagentaOne Business product to business customers.

DEVELOPMENT OF OPERATIONS

millions of €		2019	2018	Change	Change %	2017
TOTAL REVENUE		12,168	11,885	283	2.4	11,589
Greece		2,943	2,888	55	1.9	2,846
Romania		980	933	47	5.0	972
Hungary		1,872	1,889	(17)	(0.9)	1,808
Poland		1,486	1,526	(40)	(2.6)	1,509
Czech Republic		1,088	1,047	41	3.9	1,011
Croatia		960	966	(6)	(0.6)	955
Slovakia		785	761	24	3.2	748
Austria		1,276	1,055	221	20.9	900
Other[a]		975	1,031	(56)	(5.4)	1,069
Profit from operations **(EBIT)**		1,182	744	438	58.9	462
EBIT margin	%	9.7	6.3			4.0
Depreciation, amortization and impairment losses		(3,131)	(3,013)	(118)	(3.9)	(3,157)
EBITDA		4,313	3,757	556	14.8	3,619
EBITDA AL[b]		3,858	3,691	167	4.5	n.a.
Special factors affecting EBITDA		(146)	(122)	(24)	(19.7)	(130)
EBITDA (adjusted for special factors)		4,460	3,880	580	14.9	3,749
EBITDA AL (ADJUSTED FOR SPECIAL FACTORS)[b]		4,005	3,813	192	5.0	n.a.
Greece		1,212	1,173	39	3.3	n.a.
Romania		141	135	6	4.4	n.a.
Hungary		551	540	11	2.0	n.a.
Poland		383	382	1	0.3	n.a.
Czech Republic		448	432	16	3.7	n.a.
Croatia		360	374	(14)	(3.7)	n.a.
Slovakia		327	320	7	2.2	n.a.
Austria		467	336	131	39.0	n.a.
Other[a]		114	121	(7)	(5.8)	n.a.
EBITDA AL margin (adjusted for special factors)[b]	%	32.9	32.1			n.a.
CASH CAPEX		(1,824)	(1,887)	63	3.3	(1,874)

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 national company of Albania (sold as of May 7, 2019), as well as IWS (International Wholesale), consisting of Telekom Global Carrier (TGC, formerly International Carrier Sales & Solutions (ICSS)) and units assigned to TGC in the national companies, as well as the GTS Central Europe group in Romania, and the Europe Headquarters.

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

Total revenue

Our Europe operating segment generated total revenue of EUR 12.2 billion in the reporting year, a year-on-year increase of 2.4 percent. In organic terms, i.e., assuming constant exchange rates and adjusted for the inclusion of UPC Austria as of July 31, 2018 and the sale of Telekom Albania as of May 7, 2019, revenue increased by 1.4 percent.

Fixed-network business was the biggest driver of organic growth in the reporting year, with positive revenue effects reported in both our broadband and TV operations – partly as a result of larger customer bases and partly driven by prices. Both the systems solutions business and the wholesale business increased compared with the prior year, driven in part by higher revenue in Romania, especially from the termination of international voice traffic in wholesale operations. As in the prior year, mobile revenues remained at a consistently high level: Lower revenues from the lower-margin terminal equipment business were offset in full by rising higher-margin service revenues, in particular in Greece, Poland, Hungary, and the Czech Republic. In addition, intense competition on the telecommunications markets in some countries of our operating segment had a negative impact on revenue.

Looking at the development by country, our national companies in Greece, Romania, the Czech Republic, Slovakia, and Austria made the largest contributions to the organic development of revenue in the reporting year. This offset the decline in revenue in Poland in particular.

Revenue from **Consumers** developed positively, up 3.0 percent year-on-year driven mainly by fixed-network business. Here, revenue from broadband and TV business increased substantially thanks to our innovative TV and program management activities as well as the continuous rollout of fiber-optic technology in most of our national companies. In addition, strong growth in the number of FMC customers had a positive impact on revenue. Higher service revenues almost offset the decline in revenue from terminal equipment business. As a result, mobile revenues overall remained on a par with the prior-year level.

Revenue from **Business Customers** ended the year on an upward trend with growth of 2.4 percent. We also increased the profitability of our business-to-business operations in Europe, thanks largely to our efforts in product development and customer experience (MagentaOne Business). With the launch of the Magenta brand in Austria, we now offer small and medium-sized enterprises solutions that are more closely tailored to their needs. In addition, the already very popular MagentaOne Business offering is a strong driver of revenue in Poland. Our ICT/cloud business was also successful in 2019 – thanks to our international partnership with Microsoft, our industry-specific marketing and technology solutions (e.g., for the retail sector), and 5G and SD-WAN offerings for production sites (primarily in Hungary, the Czech Republic, and Austria), we always offer our customers products with state-of-the-art technology.

EBITDA AL, adjusted EBITDA AL

In the reporting year, the Europe operating segment generated adjusted EBITDA AL of EUR 4.0 billion, an increase of 5.0 percent. In organic terms, i.e., assuming constant exchange rates and adjusted for the inclusion of UPC Austria and the sale of Telekom Albania, adjusted EBITDA AL increased by 3.1 percent compared with the prior year, thus continuing the positive trend, primarily as a result of higher-margin service revenues as well as savings in indirect costs.

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 Greece, Austria, Hungary, the Czech Republic, and Slovakia. Contrasting developments were reported primarily at the national company in Croatia, mainly as a result of more intense competition in fixed-network business.

Our EBITDA AL increased by 4.5 percent year-on-year to EUR 3.9 billion, due largely to the effects described under adjusted EBITDA AL. At EUR -146 million, special factors were EUR 24 million higher than in the prior year. In organic terms, EBITDA AL grew by 2.5 percent.

Development of operations in selected countries

Greece. In Greece, revenue developed positively in the reporting year, coming in at EUR 2.9 billion or 1.9 percent higher than in the prior year. This was driven primarily by higher mobile revenue, in particular service revenues, and consistently high fixed-network revenue. Broadband business posted particularly strong growth as a result of the ongoing rollout of fiber-optic lines and vectoring. Wholesale and systems solutions business also grew substantially. The FMC offering developed positively, with rising customer numbers and corresponding revenue.

In the 2019 financial year, adjusted EBITDA AL in Greece increased significantly by 3.3 percent year-on-year to EUR 1.2 billion. Higher revenue along with savings in indirect costs were partially offset by higher direct costs.

Hungary. In the reporting year, revenue in Hungary stood at EUR 1.9 billion, down slightly by 0.9 percent year-on-year. In organic terms, revenue was up 1.1 percent compared with the prior year. Mobile business posted strong year-on-year growth, driven by volume and price-based increases in service revenues. Fixed-network business was primarily impacted by a decline in systems solutions business, which was unable to replicate the number of major contracts won in the prior year. Higher revenue in broadband and terminal equipment business partially offset this decline. Rising customer numbers and revenues reflect the consistently positive development of our MagentaOne convergent offering.

Adjusted EBITDA AL stood at EUR 0.6 billion, up 2.0 percent year-on-year. In organic terms, adjusted EBITDA AL grew by 4.0 percent.

Austria. Revenue in Austria totaled EUR 1.3 billion in the reporting year, an increase of 20.9 percent. In organic terms, i.e., adjusted for the inclusion of UPC Austria, revenue increased by 0.9 percent, largely as result of rising higher-margin service revenues and the positive trend in broadband business. Alongside the existing mobile-based broadband internet solutions already being successfully marketed to customers, the acquisition of UPC Austria enabled us to add fixed-network technology to our portfolio and introduce convergent products with the launch of our new Magenta brand in May 2019.

Adjusted EBITDA AL increased by 39.0 percent year-on-year to EUR 0.5 billion. In organic terms, i.e., adjusted for the inclusion of UPC Austria, adjusted EBITDA AL increased by 8.6 percent as a result of higher revenues and savings in direct and indirect costs, some of which were a result of synergy effects that had already been realized.

Poland. Revenue at our national company in Poland decreased by 2.6 percent compared with the prior year to EUR 1.5 billion. In organic terms, revenue declined by 1.8 percent, largely as a result of lower revenues in business with mobile terminal equipment. This was partially offset by rising higher-margin service revenues, as well as revenue in systems solutions business. In traditional fixed-network business, which we are still working to expand, revenue declined once again year-on-year. We are investing heavily in the development of technologies with the goal of becoming a one-stop shop for our customers as an integrated service provider.

Adjusted EBITDA AL came in at EUR 0.4 billion, on a par with the prior-year level. In organic terms, adjusted EBITDA AL grew by 0.9 percent.

EBIT

EBIT in our Europe operating segment increased by EUR 0.4 billion in the reporting year to EUR 1.2 billion. This increase is partly due to the effects described under EBITDA AL. Whereas previously expenses had been recognized in connection with operating leases, the right-of-use assets recognized in this context since the application of accounting standard IFRS 16 as of January 1, 2019 result in particular in higher depreciation charges. Impairment tests carried out at the end of 2019 resulted in the recognition of impairment losses in the amount of EUR 0.3 billion on property, plant and equipment and intangible assets in Romania. In the prior year, impairment losses totaling EUR 0.6 billion had been recognized on goodwill in Poland and Romania.

Cash capex

In the reporting year, our Europe operating segment reported cash capex of EUR 1.8 billion, down 3.3 percent year-on-year. We continue to make significant investments in rolling out broadband and fiber-optic technology as part of our integrated network strategy, primarily in Greece, Austria, Poland, and Hungary. Cash capex in the reporting year also included cash outflows for the acquisition of spectrum licenses in Hungary and for 5G spectrum in Austria.

SYSTEMS SOLUTIONS

> For further information on changes resulting from the first-time application of the IFRS 16 “Leases” accounting standard, please refer to the section “Management of the Group.”

ORDER ENTRY

millions of €

	2019	2018	Change	Change %	2017
ORDER ENTRY	7,329	6,776	553	8.2	5,241

Development of business

The 2019 financial year was dominated by efforts to establish our realigned Systems Solutions business. Investments in growth areas and innovation fields (such as the public cloud, the Internet of Things (IoT), digital solutions, security) create the basis for us to continue to focus our segment strategy on a sustainable shift into strategic growth areas. In parallel, we are working to strengthen our telecommunications operations and successfully manage the decline in traditional IT business.

With this in mind, we are executing a comprehensive transformation program, launched in 2018, under which we realigned our organization and workflows, adjusted capacities, developed a new strategy for our portfolio, and created three offering clusters. Ten portfolio units look after not only our traditional IT and telecommunications businesses, but also our growth areas (public cloud, Internet of Things (IoT), digital solutions including health, security, SAP, classified ICT, and road charging). Consistent with our efforts to implement the Group’s strategy pillar “Lead in business productivity,” the next step in the course of 2020 will be to combine our telecommunications business for business customers with that of our Germany operating segment.

Order entry in our Systems Solutions operating segment was up by 8.2 percent in the reporting year, continuing the positive development of the already strong prior year. This growth is primarily due to a positive trend in our growth areas, in particular digital solutions, public cloud, and also road charging.

DEVELOPMENT OF OPERATIONS

millions of €

		2019	2018	Change	Change %	2017
TOTAL REVENUE		6,805	6,936	(131)	(1.9)	6,918
Of which: external revenue		5,380	5,497	(117)	(2.1)	5,504
Loss from operations **(EBIT)**		(218)	(291)	73	25.1	(1,356)
Special factors affecting EBIT		(358)	(322)	(36)	(11.2)	(1,477)
EBIT (adjusted for special factors)		140	32	108	n.a.	121
EBIT margin (adjusted for special factors)	%	2.1	0.5			1.7
Depreciation, amortization and impairment losses		(532)	(453)	(79)	(17.4)	(1,636)
EBITDA		314	163	151	92.6	280
EBITDA AL[a]		188	176	12	6.8	n.a.
Special factors affecting EBITDA		(331)	(266)	(65)	(24.4)	(229)
EBITDA (adjusted for special factors)		645	429	216	50.3	509
EBITDA AL (ADJUSTED FOR SPECIAL FACTORS)[a]		519	442	77	17.4	n.a.
EBITDA AL margin (adjusted for special factors)[a]	%	7.6	6.4			n.a.
CASH CAPEX		(384)	(462)	78	16.9	(383)

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

Total revenue

Total revenue in our Systems Solutions operating segment in the reporting year amounted to EUR 6.8 billion, down slightly on the prior-year level. The upward revenue trend in our growth areas public cloud, security, and health was not sufficient to offset the declines in traditional IT operations and in telecommunications business. The general downward trend in traditional IT operations was primarily a result of the decline in our international corporate customer operations and the falling market trend in our core market of Western Europe, as well as of deliberate portfolio decisions (such as the termination of desktop services).

EBITDA AL, adjusted EBITDA AL

In the reporting year, adjusted EBITDA AL at our Systems Solutions operating segment increased by EUR 77 million year-on-year to EUR 519 million, mainly due to effects from our transformation program and a positive development in the Open Telekom Cloud. EBITDA AL increased by EUR 12 million compared with the prior year to EUR 188 million. The disparity between EBITDA AL and adjusted EBITDA AL is mainly due to portfolio streamlining activities. As a result of both this and ongoing restructuring measures, special factors were up EUR 65 million year-on-year.

EBIT, adjusted EBIT

Adjusted EBIT in our Systems Solutions operating segment increased by EUR 108 million year-on-year to EUR 140 million. The effects described under adjusted EBITDA AL were the main drivers of this increase. Whereas previously expenses had been recognized in connection with operating leases, the right-of-use assets recognized in this context since the application of accounting standard IFRS 16 as of January 1, 2019 result in particular in higher depreciation charges. EBIT increased by EUR 73 million in the reporting year to EUR -218 million, also due to the effects described under EBITDA AL.

Cash capex

Cash capex in the Systems Solutions operating segment stood at EUR 384 million in the 2019 financial year, compared with EUR 462 million in the prior year. This decrease was a result of high investments in a new ERP system in 2018. Capital expenditures remain focused on developing our operations in growth areas, such as the Internet of Things (IoT), digital solutions, and security.

GROUP DEVELOPMENT

For further information on changes resulting from the first-time application of the IFRS 16 “Leases” accounting standard and changes in the organizational structure, please refer to the sections “Management of the Group” and “Group organization.”

Since the spin-off from T-Mobile Netherlands on January 1, 2019, the cell tower business of T-Mobile Netherlands has been reported under GD Towers, the new unit set up in the Group Development operating segment. This unit comprises DFMG and the cell tower business of T-Mobile Netherlands. Prior-year comparatives were not adjusted.

CUSTOMER DEVELOPMENT

thousands

		Dec. 31, 2019	Dec. 31, 2018	Change	Change %	Dec. 31, 2017
NETHERLANDS	Mobile customers	5,610	4,021	1,589	39.5	3,850
	Fixed-network lines	619	241	378	n.a.	191
	Broadband customers	619	241	378	n.a.	191

The number of mobile customers and fixed-network lines in the Netherlands increased significantly compared with the end of 2018 due to the customer base acquired in connection with Tele2 Netherlands. There was also clear customer growth in the operating business. Despite intense competition, we won a high number of new customers in mobile business in particular thanks to our rate plans, which offer large inclusive data volumes through to unlimited data. The number of customers in the fixed-network consumer portfolio also continued to grow.

DEVELOPMENT OF OPERATIONS

millions of €

		2019	2018	Change	Change %	2017
TOTAL REVENUE		2,797	2,185	612	28.0	2,263
Of which: Netherlands		1,910	1,322	588	44.5	1,355
Of which: GD Towers		945	862	83	9.6	864
Profit from operations (EBIT)		615	560	55	9.8	1,504
Depreciation, amortization and impairment losses		(812)	(334)	(478)	n.a.	(304)
EBITDA		1,427	893	534	59.8	1,808
EBITDA AL[a]		1,130	865	265	30.6	n.a.
Special factors affecting EBITDA		97	(27)	124	n.a.	893
EBITDA (adjusted for special factors)		1,330	921	409	44.4	915
Of which: Netherlands		591	425	166	39.1	421
Of which: GD Towers		771	529	242	45.7	510
EBITDA AL (ADJUSTED FOR SPECIAL FACTORS)[a]		1,033	892	141	15.8	n.a.
Of which: Netherlands		502	413	89	21.5	n.a.
Of which: GD Towers		563	509	54	10.6	n.a.
EBITDA AL margin (adjusted for special factors)[a]	%	36.9	40.8			n.a.
CASH CAPEX		(452)	(271)	(181)	(66.8)	(290)

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

Total revenue

Total revenue in our Group Development operating segment increased in 2019 by 28.0 percent year-on-year to EUR 2.8 billion, primarily due to the inclusion of Tele2 Netherlands since the start of 2019. Both business customer and consumer operations contributed to this revenue growth, on the back of customer growth and a positive trend in business with MVNOs in the Netherlands. The GD Towers unit also recorded a year-on-year increase in revenue, driven by volume-based growth at DFMG.

EBITDA AL, adjusted EBITDA AL

EBITDA AL increased year-on-year from EUR 0.9 billion to EUR 1.1 billion. In August 2019, we transferred our stake of around 11 percent in Ströer SE & Co. KGaA to the Group’s own trust, Deutsche Telekom Trust e.V., to use as plan assets to cover pension obligations. The resulting income of around EUR 0.1 billion was recorded as a special factor. The revenue-increasing effects and the inclusion of Tele2 Netherlands also contributed to the increase in EBITDA AL. Adjusted EBITDA AL increased from EUR 0.9 billion to EUR 1.0 billion due to the effects described. Initial synergy effects, measures to improve cost management efficiency, and rising customer numbers and revenues from business operations also contributed to the EBITDA AL growth. The GD Towers business continues to post consistent growth on the back of rising volumes.

EBIT

EBIT increased by 9.8 percent year-on-year to EUR 0.6 billion as a result of the effects described under adjusted EBITDA AL. An increase in depreciation, amortization and impairment losses in connection with the consolidation of Tele2 Netherlands at T-Mobile Netherlands as well as non-recurring effects in the course of the integration had a negative effect. GD Towers’ high investments in new cell sites also increased depreciation, amortization and impairment losses. Whereas previously expenses had been recognized in connection with operating leases, the right-of-use assets recognized in this context since the application of accounting standard IFRS 16 as of January 1, 2019 result in particular in higher depreciation charges.

Cash capex

Cash capex increased year-on-year by EUR 0.2 billion to EUR 0.5 billion, due mainly to the additional investments required to integrate Tele2 Netherlands and higher capital expenditure at DFMG in connection with building out mobile infrastructure in Germany.

GROUP HEADQUARTERS & GROUP SERVICES

> For further information on changes resulting from the first-time application of the IFRS 16 "Leases" accounting standard, please refer to the section "Management of the Group."

DEVELOPMENT OF OPERATIONS

millions of €

	2019	2018	Change	Change %	2017
TOTAL REVENUE	2,620	2,735	(115)	(4.2)	2,935
Loss from operations **(EBIT)**	(1,648)	(1,662)	14	0.8	(1,437)
Depreciation, amortization and impairment losses	(1,159)	(825)	(334)	(40.5)	(657)
EBITDA	(489)	(837)	348	41.6	(780)
EBITDA AL[a]	(889)	(923)	34	3.7	n.a.
Special factors affecting EBITDA	(239)	(322)	83	25.8	(119)
EBITDA (adjusted for special factors)	(250)	(515)	265	51.5	(661)
EBITDA AL (ADJUSTED FOR SPECIAL FACTORS)[a]	(651)	(601)	(50)	(8.3)	n.a.
CASH CAPEX	(1,028)	(1,078)	50	4.6	(1,005)

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

Total revenue

Total revenue in our Group Headquarters & Group Services segment in 2019 decreased by 4.2 percent year-on-year. This trend was mainly due to lower intragroup revenue at Deutsche Telekom IT from the licensing of the ERP system, which does not impact on earnings at Group level. A slight negative factor resulted from the fact that, as of January 2016, the costs of intragroup development services newly commissioned from Deutsche Telekom IT in Germany are no longer charged internally.

EBITDA AL, adjusted EBITDA AL

Adjusted EBITDA AL at Group Headquarters & Group Services decreased by EUR 50 million year-on-year to EUR -651 million, due to two main effects: lower proceeds from real estate sales and lower revenue at Deutsche Telekom IT from the licensing of the ERP system. By contrast, the reduction in headcount at Vivento as a result of continued staff restructuring, and lower operating costs at our Group Services had a positive impact.

Overall, EBITDA AL was negatively impacted in the reporting year by special factors amounting to EUR 239 million, especially for staff-related measures. Negative net special factors affecting EBITDA AL in the prior year had amounted to EUR 322 million – with expenses for staff-related measures being partially offset by the positive effect of the reversal of provisions for legal risks in connection with the conclusion of the Toll Collect arbitration proceedings.

EBIT

The year-on-year increase of EUR 14 million in EBIT was mainly due to the effects described under EBITDA AL. Whereas previously expenses had been recognized in connection with operating leases, the right-of-use assets recognized in this context since the application of accounting standard IFRS 16 as of January 1, 2019 result in particular in higher depreciation charges. The increase in other depreciation, amortization and impairment losses was mainly due to higher depreciation and amortization following the decision to capitalize newly commissioned intragroup development services at Deutsche Telekom IT instead of charging them internally. By contrast, depreciation, amortization and impairment losses decreased as a result of lower capitalization in connection with declines both in the licensing of the ERP system and in land and buildings due to the ongoing optimization of our real estate portfolio.

Cash capex

Cash capex decreased by EUR 50 million year-on-year, primarily owing to decreased investment in IT 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. Revenue in our home market was up slightly from the prior-year level, due in particular to an increase in service and terminal equipment revenues in the mobile business. Higher IT and broadband revenues were not sufficient to completely offset the decrease in fixed-network revenue (primarily from voice components). Total revenue in our Systems Solutions operating segment was down slightly year-on-year. The upward revenue trend in our growth areas (in particular public cloud, security, and health) was not sufficient to make up for the declines in traditional IT and telecommunications business. Despite persistent intensive competition in some countries in our Europe operating segment, total revenue increased. Here, the main driver of growth was the fixed-network business. In the United States operating segment, revenue increased due to higher service revenues, primarily attributable to the increase in the average number of customers. This increase resulted from continued growth in existing and greenfield markets, new customer segments and rate plans, as well as connected devices.

Deutsche Telekom AG reported income after taxes for the 2019 financial year of EUR 1.7 billion. In addition to the operating business, the development of business in the reporting year was influenced by a number of very different factors, including the write-ups on Hellenic Telecommunications Organization S.A. (OTE), Athens, which were required under German GAAP (HGB) law due to improved earnings prospects, as well as on Ströer SE & Co. KGaA, Cologne, dividend payments from subsidiaries, associated, and related companies, the extension of the early retirement program for civil servants, and lower net income related to subsidiaries, associated and related companies.

RESULTS OF OPERATIONS OF DEUTSCHE TELEKOM AG

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

millions of €

	2019	2018	Change	Change %	2017
NET REVENUE	**3,423**	**3,546**	**(123)**	**(3.5)**	**3,603**
Other own capitalized costs	7	7	0	0.0	4
TOTAL OPERATING PERFORMANCE	**3,430**	**3,553**	**(123)**	**(3.5)**	**3,607**
Other operating income	2,387	2,672	(285)	(10.7)	2,769
Goods and services purchased	(1,037)	(1,024)	(13)	(1.3)	(1,060)
Personnel costs	(2,326)	(2,537)	211	8.3	(2,732)
Depreciation, amortization and write-downs	(254)	(289)	35	12.1	(341)
Other operating expenses	(3,081)	(4,521)	1,440	31.9	(4,251)
OPERATING RESULTS	**(881)**	**(2,146)**	**1,265**	**58.9**	**(2,008)**
Net financial income (expense)	3,131	6,488	(3,357)	(51.7)	7,151
Income taxes	(484)	(143)	(341)	n.a.	(198)
INCOME AFTER INCOME TAXES	**1,766**	**4,199**	**(2,433)**	**(57.9)**	**4,945**
Other taxes	(17)	(13)	(4)	(30.8)	(18)
INCOME AFTER TAXES	**1,749**	**4,186**	**(2,437)**	**(58.2)**	**4,927**

The negative operating results improved by approximately EUR 1.3 billion year-on-year, due mainly to a year-on-year decrease in other operating expenses of EUR 1.4 billion and a decline in personnel costs of EUR 0.2 billion. A decrease in other operating income of EUR 0.3 billion and a decline of EUR 0.1 billion in net revenue had an offsetting effect.

Net revenue decreased by EUR 0.1 billion year-on-year, mainly due to lower intragroup cost allocations.

A decrease of EUR 0.5 billion in foreign currency translation gains and lower income from derivatives in connection with exchange rate hedges, a EUR 0.2 billion decrease in income from asset disposals, and a EUR 0.1 billion decline in income from cost transfers and reimbursements were the main drivers of the year-on-year decline in other operating income, which was down by EUR 0.3 billion overall. The 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 that were required under German GAAP due to improved earnings prospects had a particularly positive effect in the reporting year. In the prior year, other operating income had included the write-ups on Deutsche Telekom Europe Holding GmbH, Bonn, of EUR 0.4 billion, and on T-Mobile Global Zwischenholding GmbH, Bonn, of EUR 0.1 billion.

The year-on-year decrease in personnel costs of EUR 0.2 billion was largely attributable to a lower headcount due to the take-up of the early retirement program for civil servants and to other staff restructuring measures.

The year-on-year decrease of EUR 0.2 billion in other operating expenses of EUR 1.4 billion was mainly attributable to lower expenses from derivatives, EUR 0.1 billion to lower exchange rate losses, in each case in connection with exchange rate hedges, EUR 0.1 billion to lower rental and leasing expenses, and EUR 0.1 billion to lower other staff-related expenses. Expenses of EUR 0.6 billion arising from the settlement in the Toll Collect arbitration proceedings had been included in the previous year.

Net financial income decreased by EUR 3.4 billion year-on-year to EUR 3.1 billion, primarily as a result of a EUR 3.6 billion decrease in income related to subsidiaries, associated and related companies. A decrease in net interest expense of EUR 0.3 billion compared with the previous year had an offsetting effect.

Income related to subsidiaries, associated and related companies, which declined by EUR 3.6 billion compared with the prior year, was positively affected in the reporting year by profits transferred by Telekom Deutschland GmbH, Bonn, of EUR 3.7 billion (2018: EUR 3.7 billion), DFMG Holding GmbH, Bonn, of EUR 0.3 billion (2018: EUR 2.5 billion), and GMG Generalmietgesellschaft mbH, Cologne, of EUR 0.2 billion (2018: EUR 0.1 billion). The transfer of the losses from Deutsche Telekom IT GmbH, Bonn, of EUR 0.7 billion (2018: EUR 0.7 billion), and from T-Systems International GmbH, Frankfurt/Main, of EUR 0.2 billion (2018: EUR 0.3 billion), had an offsetting effect. Profits transferred by T-Mobile Global Zwischenholding GmbH, Bonn, in the amount of EUR 1.6 billion were also included in the prior year.

Income related to subsidiaries, associated and related companies was impacted in particular by the operating business of the consolidated subsidiaries. In the prior year, income related to subsidiaries, associated and related companies had also included effects arising from reorganization measures and from a capital repayment based on fair values by T-Mobile Global Holding GmbH, Bonn, plus the loss on the intragroup sale of the indirectly held stake in BT Group plc, London.

The decrease in the net interest expense of EUR 0.3 billion compared with the prior year was primarily the result of higher income from plan assets for pension obligations.

Income after income taxes was particularly impacted by the aforementioned effects and decreased by EUR 2.4 billion year-on-year in 2019.

Other tax expense of EUR 17 million combined with the aforementioned factors resulted in income after taxes of EUR 1,749 million in 2019. Taking into account EUR 3,711 million in unappropriated net income carried forward, unappropriated net income totaled EUR 5,460 million.

FINANCIAL POSITION OF DEUTSCHE TELEKOM AG

Balance sheet of Deutsche Telekom AG under German GAAP

millions of €

	Dec. 31, 2019	Dec. 31, 2019 %	Dec. 31, 2018	Change	Dec. 31, 2017
ASSETS					
Intangible assets	217	0.2	186	31	195
Property, plant and equipment	2,313	1.9	2,376	(63)	2,698
Financial assets	111,020	89.5	94,431	16,589	93,807
NONCURRENT ASSETS	**113,550**	**91.5**	**96,993**	**16,557**	**96,700**
Inventories	0	0.0	1	(1)	1
Receivables	6,695	5.4	22,325	(15,630)	22,073
Other assets	1,313	1.1	1,630	(317)	1,659
Cash and cash equivalents	2,076	1.7	680	1,396	157
CURRENT ASSETS	**10,084**	**8.1**	**24,636**	**(14,552)**	**23,890**
Prepaid expenses and deferred charges	463	0.4	522	(59)	676
Difference between plan assets and corresponding liabilities	13	0.0	7	6	51
TOTAL ASSETS	**124,110**	**100.0**	**122,158**	**1,952**	**121,317**
SHAREHOLDERS' EQUITY AND LIABILITIES					
Capital stock and reserves	53,021	42.7	53,015	6	53,011
Unappropriated net income	5,460	4.4	7,031	(1,571)	5,928
SHAREHOLDERS' EQUITY	**58,481**	**47.1**	**60,046**	**(1,565)**	**58,939**
Accruals for pensions and similar obligations	3,780	3.0	3,747	33	3,164
Tax accruals	411	0.3	238	173	238
Other accruals	2,602	2.1	2,377	225	2,321
ACCRUALS	**6,793**	**5.5**	**6,362**	**431**	**5,723**
Debt	10,928	8.8	6,705	4,223	6,398
Other liabilities	47,776	38.5	48,904	(1,128)	50,101
LIABILITIES	**58,704**	**47.3**	**55,609**	**3,095**	**56,499**
Deferred income	132	0.1	141	(9)	156
TOTAL SHAREHOLDERS' EQUITY AND LIABILITIES	**124,110**	**100.0**	**122,158**	**1,952**	**121,317**

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

The balance sheet total increased by EUR 2.0 billion year-on-year to EUR 124.1 billion.

The development of total assets was attributable in particular to the increase of EUR 16.6 billion in noncurrent assets and the increase of EUR 1.4 billion in cash and cash equivalents. By contrast, receivables decreased by EUR 15.6 billion and other assets by EUR 0.3 billion.

The growth in financial assets of EUR 16.6 billion year-on-year resulted in particular from long-term loans granted to Telekom Deutschland GmbH, Bonn, in the amount of EUR 12.0 billion, and to DFMG Holding GmbH, Bonn, in the amount of EUR 5.7 billion, as part of an intragroup restructuring of receivables from cash management to noncurrent loan receivables. Financial assets also increased as a result of the write-ups on the stake in Hellenic Telecommunications Organization S.A. (OTE), Athens, and in Ströer SE & Co. KGaA, Cologne, totaling EUR 1.0 billion, as well as through capital increases at subsidiaries in the amount of EUR 0.1 billion. Repayments of loans to subsidiaries (including interest) had a total offsetting effect of EUR 2.5 billion on financial assets; these mainly related to Telekom Deutschland GmbH, Bonn, in the amount of EUR 1.6 billion, T-Mobile USA, Inc., Bellevue, in the amount of EUR 0.5 billion, and Magyar Telekom Telecommunications Public Limited Company, Budapest, in the amount of EUR 0.3 billion.

The decrease in receivables of EUR 15.6 billion year-on-year was primarily due to the EUR 15.8 billion decrease in receivables from cash management, mainly resulting from the intragroup restructuring of receivables to noncurrent loans.

The EUR 0.3 billion decrease in other assets was largely due to lower receivables from collateral, attributable in particular to regular fluctuation in market values resulting from changes in exchange rates, interest rates, and maturities of derivative financial instruments.

The development of total shareholders' equity and liabilities was mainly influenced by the increase of EUR 4.2 billion in debt. By contrast, shareholders' equity decreased by EUR 1.6 billion and other liabilities by EUR 1.1 billion.

The EUR 1.6 billion decline in shareholders' equity was primarily attributable to the dividend payment of EUR 3.3 billion for the previous year. Income after taxes for the 2019 financial year of EUR 1.7 billion had an offsetting effect on shareholders' equity.

Debt increased by EUR 4.2 billion, primarily as a result of the issue of new bonds with a volume of EUR 5.1 billion. In particular, the repayment of commercial paper had an offsetting effect.

Other liabilities decreased year-on-year, due mainly to loan repayments to Deutsche Telekom International Finance B.V., Maastricht, in the amount of EUR 2.1 billion and the payment of EUR 0.2 billion in the reporting year of the second tranche from the settlement of the Toll Collect arbitration proceedings. By contrast, liabilities from collateral increased by EUR 0.9 billion and liabilities from cash management to subsidiaries rose by EUR 0.6 billion. The increase in liabilities from collateral is attributable to regular fluctuation in market values resulting from changes in exchange rates, interest rates, and maturities of derivative financial instruments.

Statement of cash flows of Deutsche Telekom AG under German GAAP

millions of €

	2019	2018	Change	2017
INCOME AFTER TAXES	**1,749**	**4,186**	**(2,437)**	**4,927**
Net cash provided by operating activities	17,760	4,409	13,351	2,988
Net cash (used for) provided by investing activities	(14,536)	1,940	(16,476)	(12,890)
Net cash (used for) provided by financing activities	(1,828)	(5,826)	3,998	9,851
NET CHANGE IN CASH AND CASH EQUIVALENTS	**1,396**	**523**	**873**	**(51)**
Cash and cash equivalents, at the beginning of the year	680	157	523	208
CASH AND CASH EQUIVALENTS, AT THE END OF THE YEAR	**2,076**	**680**	**1,396**	**157**

Net cash provided by operating activities increased year-on-year by EUR 13.4 billion to EUR 17.8 billion. The increase was mainly due to a EUR 16.6 billion higher reduction in receivables from cash management compared with the previous year, mainly due to the intragroup restructuring of receivables to noncurrent loan receivables. The decrease in income after taxes, which was adjusted for non-cash write-ups on financial assets, had an offsetting effect.

Net cash used for/provided by investing activities in the reporting year was mainly impacted by medium- and long-term investments at subsidiaries of EUR 17.9 billion, largely due to the restructuring of receivables from cash management – from Telekom Deutschland GmbH, Bonn, and from DFMG Holding GmbH, Bonn – to noncurrent loans. Primarily repayments of medium- and long-term investments by subsidiaries in the amount of EUR 1.8 billion, mainly by Telekom Deutschland GmbH, Bonn, and T-Mobile USA, Inc., Bellevue, had an offsetting effect. Net cash used for/provided by investing activities also included interest received of EUR 1.5 billion. In the previous year, net cash provided by investing activities amounting to EUR 1.9 billion was mainly the result of a capital repayment of EUR 1.3 billion, cash inflows from intragroup disposals in the amount of EUR 1.0 billion, the repayment of a current intragroup investment of EUR 0.5 billion, and interest received of EUR 0.9 billion. The main offsetting effect was from a capital increase at a subsidiary in the amount of EUR 1.8 billion.

Net cash used for financing activities decreased by EUR 4.0 billion year-on-year to EUR 1.8 billion. Net cash used for financing activities in the reporting year resulted primarily from net repayments of current financial liabilities of EUR 3.2 billion, the payment of the dividend for the 2018 financial year of EUR 3.3 billion, and interest paid of EUR 1.2 billion. The net issuance of medium- and long-term financial liabilities of EUR 5.9 billion had an offsetting effect. The year-on-year increase is attributable in particular to net repayments of current financial liabilities, which decreased by EUR 4.2 billion.

In all, this resulted in an increase in cash and cash equivalents of EUR 1,396 million 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

2019 was dominated by the climate crisis and worldwide protests about climate policy. We know how urgent the situation is: That is why we initiated further decisive steps in the reporting year to strengthen our contribution to fighting climate change. At the beginning of 2019, CEO Timotheus Höttges set a new ambitious science-based target: We aim to turn the Deutsche Telekom network into a "green network" by 2021 – 100 percent electricity from renewable sources and 90 percent lower direct and indirect emissions by 2030. SDG 13 Furthermore, the CEO called for a holistic approach to developing a "greener Deutsche Telekom." We have affirmed this approach by extending our Group strategy. Initial measures have already been put in place as part of our new Group program "We care for our planet," like the introduction of our "we care" label and the first sustainable smartphone recycling scheme in Germany. SDG 15 We were also faced in 2019 with rising populism, fake news, and the manipulation of public opinion on the Net. In order to take a stand against these phenomena, we made "digital democracy" the focus of our activities to promote media skills in 2019. SDG 16 We also launched a campaign for participation in 2019 under #TAKEPART. The idea behind the campaign is that everyone should have access to the many opportunities afforded by digitalization. We want to bring everyone into the digital society. Participation for all is the key target for Deutsche Telekom. SDG 10

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."

We meet our reporting obligation under the CSR Directive Implementation Act. For this reason, we publish this associated combined non-financial statement (NFS) in the management report. When selecting the subjects for the present 2019 NFS, we again not only considered legal requirements, but also the results of our materiality analysis. SDG 17 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 2019 CR report in March 2020. 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 repetitions 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.

In 2019, we once again received accolades for our sustainability performance and associated reporting: Timotheus Höttges was given the Appeal of Conscience award by the foundation of the same name for his outstanding contributions to education, culture, and sustainability through Deutsche Telekom AG, and for his commitment to strengthening digital literacy, and his high respect for human rights. SDG 17 In 2018, our CR report reached third place in the 10th ranking of sustainability reports by the Institute for Ecological Economy Research (IÖW) and Future e.V. The Ethisphere Institute also named us one of the World's Most Ethical Companies in 2019 for the second time in a row.

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 on the basis of our Leading European Telco strategy: We want to be the leading telecommunications provider in Europe. For us, social and ecological responsibility is inextricably linked with such a leadership role. We underlined this once again in 2019 by extending our Group strategy. Our mission statement is "Act responsibly. Enable sustainability." 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, human rights, 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.

We use the Socially Responsible Investment ESG KPI to determine how the finance markets rate our sustainability activities. This indicator measures the proportion of T-Shares held by investors whose investment strategy is based not only on economic but also, at least in part, on environmental and social aspects of corporate governance. As of September 30, 2019, around 18 percent of all T-Shares were held by SRI (socially responsible investment) investors, and 3 percent were held by investors who manage their funds primarily in accordance with SRI aspects. In the reporting year, our share was included in four additional sustainability indexes: the Euronext Vigeo Europe 120 and the Euronext Vigeo Eurozone 120 by Vigeo Eiris, the S&P Europe 350 ESG by RobecoSAM, and the EURO STOXX 50 ESG by Sustainalytics. SDG 8

8 DECENT WORK AND ECONOMIC GROWTH
FINANCE

Listing of the T-Share in sustainability indexes/ratings

Rating agency	Indexes/ratings/ranking	2019	2018	2017	2016	2015
RobecoSAM	DJSI World	✔	✔	✔	✔	✔
	DJSI Europe	✔	✔	✔	✔	✔
	S&P Europe 350 ESG	✔	–	–	–	–
CDP	STOXX Global Climate Change Leaders	✔	✔	✔	✔	✔
ISS-oekom	“Prime” (Sector Leader)	✔	✔	✔	✔	✔
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 Europe 120	✔	✖	✖	✖	✖
	Euronext Vigeo Eurozone 120	✔	✖	✖	✖	✖

✔ Listed successfully ✖ Not listed – New index since 2019

We are making our contributions towards solving social challenges measurable and have defined a uniform process for evaluating selected products, solutions, and programs. This process helps us to keep our key sustainability activities results-oriented and to make our contribution to achieving the SDGs visible. SDG 8 Detailed information will be published in our 2019 CR report.

8 DECENT WORK AND ECONOMIC GROWTH
FINANCE

PROCESS FOR DETERMINING SIGNIFICANT TOPICS

We conduct a comprehensive materiality process to determine the topics that are relevant for our reporting. For example, we carry out a document analysis which includes evaluating existing legislation and determining the topics’ influence on our value chain. The results of the materiality analysis give us important indications of how to direct our sustainability strategy. Detailed information on our approach will be published in our 2019 CR report.

In 2019, we again considered the main topics key to understanding business operations, the operating result, the Company’s situation, and the effects on non-financial aspects. 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 2019.

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."

Our holistic environmental management system is based on the international ISO 14001 standard. We have a Group-wide environmental guideline that covers almost all existing and Group-wide voluntary commitments. You can access this policy on our Group website.

CLIMATE PROTECTION AND RESOURCE CONSERVATION SDG 13

13 CLIMATE ACTION

ENVIRONMENT

Demand for faster data services with full-coverage availability is growing rapidly. That is why we continue to drive forward the build-out of our infrastructure and increase data transmission rates. Our investments in the network build-out make us one of the biggest investors in the industry. Operating our network consumes energy. However, rising energy consumption can lead to an increase in CO_2 emissions and thus accelerate climate change. We therefore ensure by increasing energy efficiency – for instance at our data centers – that our energy consumption grows to a much lesser extent than the volumes of data we transmit, and we use renewable energies to set energy consumption apart 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 strategy covers the following aspects: "Emissions from the value chain," "Renewable energies," "Energy efficiency," and "Positive social effects." In March 2019, the Group Board of Management adopted new, ambitious climate goals:

1. From 2021, we intend to source 100 percent of the electricity used by the Group from renewable energies (Scope 2). SDG 7
2. By 2030, we plan to reduce our CO_2 emissions (Scope 1 and 2) by 90 percent (compared to 2017).
3. 80 percent of our CO_2 footprint arises from the production and use of our products. By 2030, we want to reduce these emissions (Scope 3, categories: Purchased goods and services, Capital goods, Use of sold products, Downstream leased assets) by 25 percent (compared to 2017).

7 AFFORDABLE AND CLEAN ENERGY

ENVIRONMENT

In September 2019, we joined an international industry initiative launched by GSMA. Under this initiative we undertake to reduce our CO_2 emissions (Scope 1 and 2) to "net zero" by 2050 at the latest and thus to make our business operations completely climate neutral.

We developed our new climate goals in line with the current scientific and political conditions. The Science Based Targets initiative (SBTi) confirmed us as the third DAX company whose climate protection targets contribute to compliance with the Paris Climate Agreement. We have thus followed our national companies in the United States and Hungary, whose targets were already endorsed by SBTi in 2018 and at the start of 2019, respectively. 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. As a result, in the United States, two new wind farms have already been set up and a further wind farm and four solar parks are to follow by 2021.

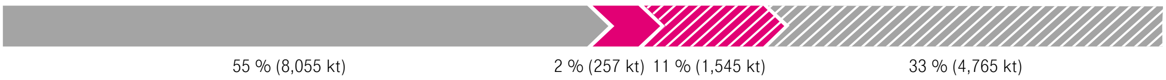
On top of these new climate goals, the Board of Management commissioned an evaluation in 2019 of the additional measures that we can implement on our way to becoming a "green Deutsche Telekom." A holistic integrated approach was developed, which in addition to customer-centric initiatives, also provides for greater integration of CR in all central functions of our internal value chain. As well as reducing CO_2 emissions, we are also increasingly focusing on the circular economy and material efficiency. The Board of Management approved the concept in October 2019 which will be implemented throughout the Group over the next few years as part of our new Group program "We care for our planet." This also allows us to meet the growing expectations of our stakeholders in terms of our engagement in the area of climate and environmental protection. SDG 15

Our climate goal, adopted in 2013, to reduce the Group's CO_2 emissions by 20 percent (compared to 2008, excluding T-Mobile US) by 2020 is still in place. In all, 40 business units in 29 countries have undertaken to work toward this climate goal. They are helping us achieve this goal in different ways and to different extents, depending on developments in their local markets. GCR reports to the Board of Management in detail on the status of target achievement each year. We have further reduced our emissions over the last few years, bringing us to the level forecast for 2019. We expect to achieve our goal.

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

CO_2e emissions (Scope 1–3)

Deutsche Telekom Group in 2019 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

In 2019, we substantially reduced our emissions, bringing us to the forecast level. The switch to green electricity, in particular the purchase of renewable energy at T-Mobile US, was the major contributor to this reduction in our carbon footprint.

The PUE metric serves as one indicator for enhancing the energy efficiency in our data centers. This Green Grid Association method takes the total energy consumed by data centers into account, not only that used to operate the servers. In 2019, the global PUE metric for our T-Systems data centers was 1.64. From 2008 to 2019, we reduced the average PUE metric for T-Systems data centers in Germany from 1.85 to 1.56. Our data center in Biere, Saxony-Anhalt, is extremely efficient. It was awarded the respected LEED Gold sustainability certification (Leadership in Energy and Environmental Design). By taking steps such as migrating data from inefficient data centers to Biere, we achieved a PUE metric there of 1.32 by the end of 2019.

We determine the effectiveness of our climate protection measures using key performance indicators (KPIs). The KPIs Energy Intensity and Carbon Intensity for Deutsche Telekom 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 120 and 23 for the Carbon Intensity KPI. For the Group as a whole in Germany, the Energy Intensity KPI stands at 74 and the Carbon Intensity KPI at 10. The Renewable Energy KPI shows how much of our Company's overall electricity consumption is obtained from renewable sources. In 2019, this amounted to 64 percent. 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."

Energy Intensity ESG KPI

Deutsche Telekom Group in 2019

Energy consumption in millions of kWh: 9,113 / IP data volume in millions of terabytes: 76.2 = 120 ENERGY INTENSITY kWh/terabyte

Carbon Intensity ESG KPI

Deutsche Telekom Group in 2019

Emissions in millions of kg of CO_2e: 1,741 / IP data volume in millions of terabytes: 76.2 = 23 CARBON INTENSITY $kgCO_2e$/terabyte

In order to effectively curb climate change, all relevant players must work together, which is why we participate in many 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 supplier engagement rating of the rating organization CDP has assessed how well companies have integrated the topic of climate protection into their supply chains. In 2019, we were awarded an A rating by CDP and included on its Supplier Engagement Leader Board. Almost 63 percent of our procurement volume is covered by the participation of our suppliers in CDP's 2019 supply chain program. SDG 17

Last but not least, handling valuable resources efficiently also plays a vital role in a holistic approach to ecological responsibility. Our "Stop wasting – start caring!" initiative aims to use and recycle resources as efficiently as possible in line with the circular economy concept. To this end we are, for example, reducing the use of plastic, paper, and packaging in key processes throughout the value chain. For example, we have halved the size of SIM punch cards, thereby saving 20.8 metric tons of plastic in the reporting year. Further examples are the replacement of paper bags with sturdy bags made from recycled PET bottles in our Telekom shops, and clothes for our shop staff made from certified organic cotton. We are also capitalizing on the change from within: Our employee initiative Green Pioneers was established in 2018 and within a year won more than 200 members at around 40 sites, who are committed to greater sustainability in their everyday life and work. They have launched all kinds of projects, such as a cell-phone collection campaign, in which almost 10,000 old, private devices were collected from employees and professionally recycled. Or the Print-on-Demand project, in which quick guides to our Magenta Zuhause and MagentaTV products are only printed on request. Since the project was launched in 2018 it has saved 140 metric tons of paper and almost 180 metric tons of CO_2 (reduction in paper production and transport) per year in Germany. Measures to conserve resources are also being implemented in our national companies, including lots of campaigns for the return of cell phones and avoidance of plastic waste. SDG 15

ASPECT 2: EMPLOYEE CONCERNS

The digital transformation is expected to improve people's lives. That is why people will remain a priority for us. This applies in particular to the 211,000 or so employees working in our Company. They use their commitment, their expertise, and their abilities to smooth the path towards a digital society and thus make a key contribution to our business success. Five 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

Our Guiding Principles are stated in the section "Group organization." For further information about our HR work, please refer to the "Employees" section.

COLLABORATION WITH EMPLOYEES' REPRESENTATIVES AND TRADE UNIONS SDG 17

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 just overcome change, but 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. 62 collective agreements were concluded with the trade union in the course of 2019. The focus was on harmonizing the remuneration systems in 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 involved in all major issues as a matter of principle.

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, 2019). 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, 2019, 73.4 percent of employees in Germany were covered by collective agreements. We record the Group-wide coverage rate every two years. As of December 31, 2018, it stood at 52.3 percent.

We carefully monitored trade union matters in the United States over the course of 2019. 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.

The results of employee surveys conducted at T-Mobile US in 2019 showed that 93 percent of respondents take pride in working for the company. 89 percent said they would recommend T-Mobile US as a great place to work, and 84 percent 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 2019, 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 86 (2018) to 49 (2019). Ethisphere Institute named T-Mobile US as one of the World's Most Ethical Companies for the eleventh year in a row. T-Mobile US also scored 100 in the Human Rights Campaign Corporate Equality Index for the seventh time in a row, making T-Mobile US the best place to work in terms of equal treatment of homosexual, bisexual, and transgender people.

Collaboration with employees' representatives is founded on our commitment to trusting cooperation – anchored in our Group-wide Employee Relations Policy, which sets out eleven 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: 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. In the most recent employee survey (excluding T-Mobile US) from 2019, the commitment index remained at a high level, coming in at 4.0 (on a scale of 1.0 to 5.0).

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

DIVERSITY AND EQUAL OPPORTUNITY SDG 10

10 REDUCED INEQUALITIES

EMPLOYEES

Just as much as demographic developments and different perceptions of roles, social trends such as globalization must not lead to certain groups being shut out of the labor market. Equal opportunities are essential for social stability and business alike. Respecting human individuality and harnessing individuals' distinctive traits for joint success is just as important for our Group as developing a shared identity. A Culture & Diversity Team has been set up in the Human Resources Board of Management department to ensure this is implemented successfully.

People with different abilities and cultural backgrounds from roughly 150 countries work together very effectively at our Company. This diversity helps us remain competitive around the world with good ideas and outstanding products, and consolidate our position as an attractive employer. 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 every six months. For us, diversity also means offering our employees numerous opportunities to develop personally and grow professionally, regardless of their gender, age, sexual preference, health situation, ethnic background, religion, or culture. Our Group-wide Diversity Policy, five 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.

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

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.

OCCUPATIONAL HEALTH AND SAFETY SDG 3

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 OHSAS 18001, ISO 45001, ISO 14001, and 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. Quarterly reports on the health rate are just one example of its commitment in this area. We pool together and manage our occupational safety and health protection programs at a Group level, with on-site health and safety managers responsible for putting them into practice. We systematically evaluate our programs to ensure they are effective. To do so, we review the results of our employee survey, evaluating stress prevention measures under collective agreements, 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. For example, all teams across 29 countries are issued recommendations and granted access to services depending on their health index rating. Occupational health promotion in Germany covers a range of services for employees such as stress prevention programs; flu vaccinations; colon cancer screening; information on diet and nutrition, exercise, and relaxation; and a comprehensive annual health check-up. 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. 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. By raising awareness and implementing preventive measures, 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 94.0 percent in 2019 (prior year: 93.6 percent). Excluding long-term illnesses, the health rate in 2019 stood at 95.5 percent (prior year: 95.3 percent). The health rate is reported to the Board of Management at the end of each quarter. We aim to bring the Group-wide health rate up to 95.9 percent by 2020 (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 6.8 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).

ASPECT 3: SOCIAL CONCERNS

We are finding new solutions to many different challenges our society is currently facing as a result of the digital transformation. Since this development affects every area of our lives, access to state-of-the-art information technologies is key to participating in a knowledge and information society. As a telecommunications company, we are responsible for providing such access to as many people as possible and for promoting the competent use of ICT. The security of our customers' data is our top priority in this respect. When used properly, ICT can also make a valuable contribution to sustainable development.

DEPLOYMENT OF ICT PRODUCTS TO THE BENEFIT OF SOCIETY SDG 12

As part of our climate protection activities, we are systematically working toward shrinking our carbon footprint. We can make a much larger contribution to climate protection with our products and services. According to the GeSI study “Digital with Purpose: Delivering a SMARTer 2030,” ICT products have the potential to save almost four times as many CO_2 emissions in 2030 in other industries as the ICT industry itself produces. We can also use our products, services, and activities to contribute to tackling many other ecological and social challenges, as was made clear in a comparison with the 17 Sustainability Development 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, 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.

Since 2014, we have been analyzing the scope of the sustainability benefits offered by selected products. These benefits include, for example, the expansion of electromobility in towns and cities: For instance, our Croatian subsidiary Hrvatski Telekom has set up 11 connected charging stations for electric vehicles on the island of Krk, which enable a range of functions. The initiative is part of Krk's long-term strategy to become Croatia's first "smart" island. Hrvatski Telekom's e-mobility solution offers state-of-the-art services infrastructure and "turnkey" charging technology. The network currently comprises 150 publicly accessible charging stations with more than 200 charging points in 80 towns and cities across Croatia and it is continuously being expanded. SDG 7

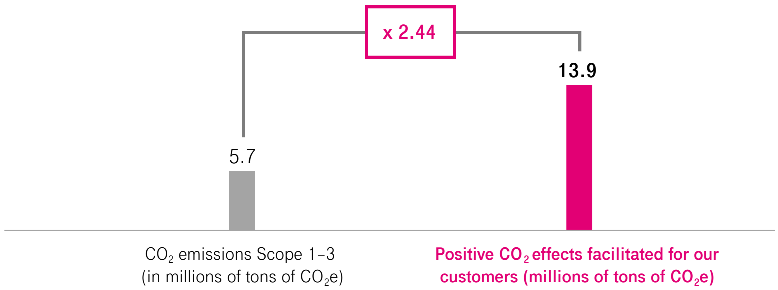
7 AFFORDABLE AND CLEAN ENERGY

FINANCE

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 2019, this share amounted to almost 43 percent. 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 144 percent higher in 2019 than our own CO_2 emissions (enablement factor of 2.44 to 1).

Enablement Factor ESG KPI

Deutsche Telekom Group in Germany in 2019



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 such as the Blue Angel. The majority of Telekom Deutschland's fixed-network devices and media receivers, for example, carry the Blue Angel seal of approval. In the reporting year, the Blue Angel was also awarded to the joint system of Telekom Deutschland and Teqcycle for taking back cell phones. SDG 12

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

FINANCE

To also make our efforts transparent for our customers, we introduced the "we care" label in 2019. This includes two categories for labeling products, services, measures, and initiatives offering ecological or social sustainability added value. For example, our sustainable smartphone recycling scheme for Germany has been included in the "Environment" category. Customers can sell their old devices back to us; these are then refurbished as much as possible and packed into biodegradable boxes. Other customers can then buy these good-as-new refurbished devices at a reduced price. This saves resources like water and energy, which are used in large quantities in the manufacture of new smartphones, and valuable raw materials like tantalum or tungsten, used in their components. Further information on the second category of the "we care" label – Digital participation – can be found in the next section. SDG 12

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

ENVIRONMENT

CONNECTING THE UNCONNECTED – ACCESS TO AND PARTICIPATION IN THE INFORMATION AND KNOWLEDGE SOCIETY

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. At the same time, we use our social initiatives to reduce potential obstacles to ICT use. SDG 8

8 DECENT WORK AND ECONOMIC GROWTH

RELATIONSHIPS

Demand for faster data services with full-coverage availability is growing continuously. The majority of the Group's investment volume in Germany, which currently amounts to around EUR 5.5 billion a year, is for the build-out of broadband networks. 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. By the end of 2019, we already covered more than 98 percent of German households with LTE. We also began the 5G build-out in eight German towns and cities in 2019. The biggest 5G area in Germany is in Berlin. At the end of the reporting year, our fixed network provided around 35 million households with fiber-optic-based technology. In addition to 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. SDG 9

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 was public debate in 2019 around the potential effects of 5G on health. We have been providing information on the scientific evidence regarding mobile communications and health for 20 years now. Together with Telefónica Deutschland, we also support the information platform www.informationszentrum-mobilfunk.de. This platform provides expert and evidence-based information on mobile communications topics subject to controversial public debate: about health, research, technology, benefits, and applications. In 2019, Informationszentrum published a brochure on 5G and interviews with scientific experts on these topics. 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 communication and health-related matters. SDG 3

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. Under the auspices of Group Compliance Management, we adopted guidelines on the ethical use of AI in 2018, which set out how we, Deutsche Telekom, want to use AI in a responsible manner. In 2019, we carried out training and workshops on implementing the guidelines, held a conference on digital ethics, provided employees with comprehensive information using a range of formats, integrated the AI guidelines in contract-relevant provisions for our suppliers, and developed an internal test seal for ethical AI products: AI applications that satisfy our high standards carry the seal. SDG 8

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, and responsibly. More and more, this issue not only has 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 skills in the population. We are led here by our aspiration #TAKEPART – after all, digital participation is also social participation. SDG 10

Within the company, GCR is the linchpin when it comes to digital media skills. The individual national companies are responsible for developing and implementing media literacy projects, which allows regionally specific conditions to be better taken into account. One example of the commitment of our national companies is the strategic partnership of our Greek company COSMOTE with the two charitable organizations STEM Education and WRO Hellas. STEM Education promotes education in STEM subjects (science, technology, engineering, and mathematics). WRO Hellas holds youth competitions for robotics. Since 2013, this partnership has reached more than 18,000 school students, more than 1,500 teachers have taken part in free workshops and webinars, and more than 500 construction kits that allow children and young people to explore the world of robotics through play have been put in schools. What's more, in 2019 COSMOTE directly helped a Greek school to set up a Junior Engineering Academy (JEA). JEA is a two-year program launched by the Deutsche Telekom Foundation that aims to promote STEM subjects at middle-school level. In 2019, the Deutsche Telekom Foundation set up such academies in cooperation with STEM Education at 16 Greek secondary schools. 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

We present all of our initiatives for greater media literacy in Germany on the website "Media, sure! But secure." (www.medienabersicher.de/en/), where we provide informational material for all ages. The #TAKEPART stories examine socially-relevant issues arising from digitalization from a practical perspective and translate them into a range of offers for multipliers. Many of the modules are also available in simple language. Our multi-award-winning Teachtoday initiative (www.teachtoday.de/en/) helps children and young people learn how to navigate the internet safely and skillfully. Our focus for

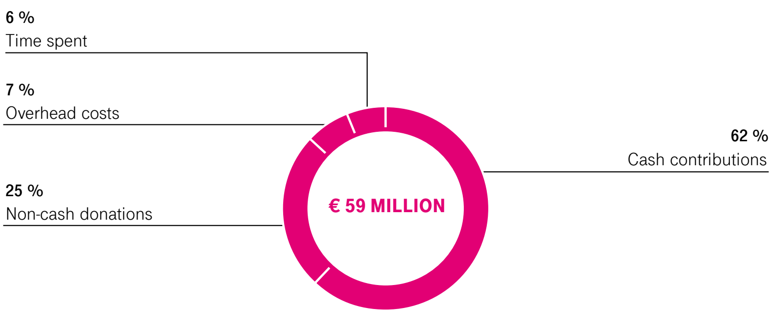
2019 was "digital democracy": What benefits does the digital world offer for political participation and opinion forming? Where is democracy threatened by what happens on the internet – for instance through open or veiled populism, hate speech, fake news, and the manipulation of public opinion? Our "Media sure, but secure." offer carries the "we care" label in the "Digital participation" category. In this category, the label highlights a positive contribution toward solving social challenges in the digital world. SDG 16 SDG 4

In addition, in 2019, we reached many thousands of people with snackable content, discussion rounds, and workshops on the topic of "digital democracy," for instance at IFA in Berlin. We aim to raise awareness and highlight alternative courses of action, for example on the question of how to identify fake news and how to apply this knowledge when using social media. We also have a media skills offering aimed at senior citizens in collaboration with the German Association of Senior Citizens' Organizations (Bundesarbeitsgemeinschaft der Senioren-Organisationen – BAGSO). Teaching media literacy skills is also a core focus of our corporate volunteering programs, where employees devote their free time so as to share their expertise.

Data security is another focal point of our efforts. Our advisory service www.telekom.com/en/corporate-responsibility/data-protection-data-security/digitally-secure 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 2019, this amounted to EUR 59 million. The Beneficiaries ESG KPI shows the number of people involved in community activities and how many people we have reached – 13 million in 2019. The Media Literacy ESG KPI calculates the proportion of the target group reached through media literacy programs as part of our social commitment efforts. In 2019, this KPI decreased slightly to 41 percent, down from 42 percent in the prior year. We aim to reach 45 percent by 2020. The 2019 ESG KPIs for the Deutsche Telekom Group in Germany were EUR 32 million (Community Investment), 11 million people reached (Beneficiaries), and 46 percent (Media Literacy).

Community Investment ESG KPI



Helping refugees integrate into the German labor market constitutes another core element of our social commitment efforts, in part through the continuing awarding of internships. To encourage long-term integration, follow-on employment was found for 56 participants either with Deutsche Telekom itself or with partner companies. This was done, for example, by switching from an internship to vocational training or a cooperative study program, or from training to a permanent position. In 2019, a total of around 450 refugees held positions in the various ongoing measures and new offers. Over the last few years, we have gained a lot of experience in integrating refugees in the labor market. The special processes initially necessary for this were incorporated into our standard processes in 2019, permanently embedding them in our Company. SDG 4

DATA PRIVACY AND DATA SECURITY SDG 16

The process of digitalization comes with new kinds of threats, such as hacker attacks on the sensitive data of private individuals or companies. People will only actually use new 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.

As of March 31, 2020, the current Board of Management member responsible for Data Privacy, Legal Affairs and Compliance (DRC) is leaving the Company. At its meeting on May 22, 2019, the Supervisory Board of Deutsche Telekom AG thus resolved to assign the Data Privacy, Legal Affairs, and Compliance units to the Board of Management department for Human Resources, which has been renamed Human Resources and Legal Affairs. As part of this step, the Risk Management and Internal Audit units were assigned to the Board of Management department for Finance, and the Security unit was assigned to the Board department for Technology and Innovation. Since 2009, the 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 change of the year, the role of the Advisory Board was strengthened by adding additional members from the ranks of the Board of Management and the Supervisory Board of Deutsche Telekom AG.

Data privacy and data security are subject to the corresponding Binding Corporate Rules Privacy (BCRP): The Data Privacy Policy governs how the Group treats personal data. 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 security and data privacy 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. In doing so, we are 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 regularly by internal and external experts. This includes the certification of the Telekom Security management in accordance with ISO 27001, regular Group-wide internal security checks, and the 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.

We use two surveys – the Group Data Privacy Audit (GDPA) and the Online Awareness Survey (OAS) – to measure awareness of data privacy and security within the Company by means of random checks every two years. For the GDPA, we survey 50,000 Deutsche Telekom employees on topics related to data privacy and data security. 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 percent. It is based on what the employees said they thought, did, and knew about data protection. The Data Protection Award indicator was last calculated in 2018 and stood at 76 percent (excluding T-Mobile US; 2017: 75 percent). The OAS surveys roughly 42,000 employees and provides key data on their awareness of security issues. 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 78.3 (excluding T-Mobile US; 2017: 78.4) 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 2018 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 data privacy in call centers.

Our Telekom Security unit is responsible for internal security matters for the protection of all Group units, and offers security solutions for consumers, business customers, public authorities, and state agencies. In 2019, the unit broadened its cyber defense and threat intelligence capacities, and gained further DAX-listed and international companies as customers. In our 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: Cybercrime continues to rise at a dramatic rate. Cyberattacks on companies are becoming more aggressive and sophisticated across all industries. Attack numbers are increasing exponentially: In the reporting period alone, we registered on average almost 40 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, Telekom Security even develops its own malware and uses it to test whether new systems can reliably detect and mitigate new 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 2019, Telekom Security brought a wide range of new solutions to market maturity. 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

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. In 2019, we hosted the fourth Telekom Security congress in Bonn, Germany, inviting partners and customers. Issues such as data security and transparency are also becoming increasingly important at the political 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

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

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, our primary focus is on safeguarding the right to conclude collective agreements and on guaranteeing diversity and equal opportunity.

For further information, please refer to the passages entitled "Collaboration with employees' representatives and trade unions" and "Diversity and equal opportunity" in this section under Aspect 2 "Employee concerns."

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 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: Firstly, we compile a central Human Rights & Social Performance Report each year. In 2019, all 117 of the companies surveyed declared in this report that they comply with the rules and principles of the Code of Human Rights & Social Principles. The report indicated no violations for 2019. Secondly, we have a central point of contact for human rights issues, available at the email address humanrights@telekom.de or through an anonymous whistleblower system. We have summarized all relevant contact information on our whistleblower portal Tell me!. We look into all tip-offs received and introduce countermeasures, provided the information is identified as plausible. In 2019, the point of contact received eight tip-offs relating to human rights. 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.

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

In addition, we conduct an annual formal review of compliance with the Employee Relations Policy. The results are discussed with the regional managers in our national companies. If necessary, we agree upon 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 these effects altogether. In 2019, we began holding local workshops to provide training on and raise awareness of human rights issues. We completed such an assessment at T-Systems India and carried out Employee Relations Policy reviews at T-Mobile Polska and in Deutsche Telekom’s field service in 2019.

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 CHRO and CFO, respectively. 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. We train our employees throughout the Group using an e-learning tool. In addition, a buyer handbook provides an overview of which CR criteria must be considered at which point of the procurement process. SDG 8

8 DECENT WORK AND ECONOMIC GROWTH

RELATIONSHIPS

We cannot guarantee that all our suppliers conform to the principles of our Supplier Code of Conduct. However, 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. These criteria were updated most recently in 2018.

For the supplier evaluation itself, we use a three-stage approach:

Stage 1: The Supplier Code of Conduct 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 percent. 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.

Stage 2: 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 17 other companies in the Joint Audit Cooperation (JAC). In 2019, we completed a total of 84 social audits – 26 at our direct and 58 at our indirect suppliers. Since 2010, we have carried out 550 audits within the framework of the JAC. SDG 10

10 REDUCED INEQUALITIES

RELATIONSHIPS

Stage 3: 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 primarily done as part of the development program we initiated for suppliers. Since 2018, this has been set up as an industry-wide Sustainable Development Program (SDP) at the ICT association Global e-Sustainability Initiative (GeSI). In 2019, the telecommunications company Swisscom also joined the industry program. As a result, five additional suppliers (three of Deutsche Telekom and two of Swisscom) were included in the SDP in the course of the year. Since the program was launched in 2014, a total of 23 suppliers have joined the SDP. In 2019, we again achieved not only social and ecological improvements, but also economic ones: For example, an increase in job satisfaction of 18 percent at one of our suppliers was accompanied by an 8 percent reduction in staff turnover. Ecological improvements at another of our suppliers who is part of the SDP include an 88 percent reduction of CO_2 emissions caused by logistics and a 14 percent saving of CO_2 emissions per product unit. SDG 17

17 PARTNERSHIPS FOR THE GOALS

ENVIRONMENT

We use the Sustainable Procurement ESG KPI to measure and manage our sustainability performance in procurement. This KPI represents the procurement volume attributable to suppliers who have accepted our Supplier Code of Conduct and have been checked on the basis of the information they have disclosed, for example, via EcoVadis or in a social audit, with regard to social and ecological criteria. This calculation relates to our procurement volume throughout the entire Group (excluding T-Mobile US). The share of the procurement volume subject to a risk assessment remained at around 81 percent in 2019, which is the target level we had set for 2020. The TOP 200 CR-qualified Suppliers ESG KPI complements the Sustainable Procurement KPI. It reflects the share of our top 200 suppliers audited for sustainability criteria. In 2019, the share of TOP 200 CR-qualified suppliers was 87 percent.

Our aspiration to increase social and ecological sustainability in the value chain is increasingly also reflected in our product portfolio. In 2019, we added the Fairphone smartphone to the product range of our online shops in Germany. Our Austrian national company has been offering its customers the Fairphone since April 2016. The Fairphone discloses all of its manufacturing processes, from responsible materials procurement through to a commitment to the wellbeing of workers.

ASPECT 5: FIGHTING CORRUPTION

Corruption and unfair business practices violate national and international law. We reject every form of corruption, which is why we focus on corruption avoidance measures.

ETHICAL BUSINESS PRACTICES AND COMPLIANCE SDG 16

16 PEACE, JUSTICE AND STRONG INSTITUTIONS

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 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 current legal standards. 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 that addresses both of these aspects as a way to reduce risks and make sure conduct throughout the Group abides by the regulations in place. All our activities comply both with legal and statutory requirements and with our own policies and internal data privacy regulations. Responsibility for the compliance management system lies with the Board of Management department for Data Privacy, Legal Affairs and Compliance. Its individual units Data Privacy, Legal Affairs, and Compliance were reassigned to the extended Human Resources and Legal Affairs Board of Management department as of January 1, 2019. 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 80 companies and covered almost 97 percent of the workforce (according to the headcount figures for the fully consolidated companies as of September 2019). 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 certified, with particular attention paid to anti-corruption measures. Since 2016, a total of 25 German and international companies have been reviewed.

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 the best preventative measures, 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 2019, 122 compliance-related tip-offs were submitted via the Tell me! portal (prior year: 137 tip-offs). Over the course of the year, 38 of these were confirmed to be cases of misconduct and dealt with accordingly. We systematically pursue all tip-offs, including those that reach us via other channels, within the scope of the legal framework available to us, and implement commensurate sanctions. We have introduced a Group-wide reporting process to control and monitor these activities.

By signing our Supplier Code of Conduct, our suppliers undertake to refrain from any kind of corruption or conduct that could be interpreted as such. We expect, and work to ensure, that our suppliers observe these obligations, principles, and values, and take all necessary measures to prevent and penalize active and passive corruption. Since 2014, we have offered our suppliers regular e-learning training courses on compliance, besides providing them with a compliance guideline. We select our business partners based on compliance criteria and conduct risk-oriented compliance business assessments. SDG 17

17 PARTNERSHIPS FOR THE GOALS

RELATIONSHIPS

INNOVATION AND PRODUCT DEVELOPMENT

VTI STRATEGY: WE ENABLE TODAY'S BUSINESS AND SHAPE THE FUTURE

The digital transformation and the ongoing change process triggered by it are unstoppable. Real-time connections between people and things will continue to grow and become a widespread phenomenon. The new 5G mobile communications standard will ensure that the virtual and real worlds coalesce more and more. Smart robots and factories, self-driving cars, and artificial intelligence will increasingly become part of our everyday lives. While this ongoing change is a challenge to everyone – users, customers, and providers alike – it also offers many opportunities.

The Board of Management department Technology and Innovation (VTI) helps ensure that Deutsche Telekom can tackle these changes faster and more flexibly. To this end, VTI combines and integrates the technology, innovation, and IT functions. That enables us to align our efforts with the next generation of networks and with the customer requirements they will give rise to. Our goal is always to remain one step ahead of the radical changes in our industry, including digitalization, big data, software-defined networks, virtualization, and cloud services. Conventional network technology and IT are converging more and more. At the interface between them, crucial innovations are arising, and our task is to develop these and bring them to market quickly.

The goal we are pursuing with our VTI strategy is to enable today's business and to shape the future. We are convinced that, in line with the priorities of our operating segments, we can reliably deliver results, constantly develop product, industry, and technological innovations, and simultaneously hone and refine our working methods – all in the best interests of Deutsche Telekom.

- **Delivery:** VTI is a provider to the entire 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.
- **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 operating segments in order to meet all customer requirements, and create useful and meaningful innovations.
- **Transformation:** Our focus here is on how we work and lead, and the way in which we continuously develop and grow. The Academy programs we have created offer employees options to enhance their skills to match profiles such as software engineer, software architect, agile product owner, scrum master, product developer/marketer, and designer. Transformation is not an end in itself, but a necessary part of meeting the challenges posed by a dynamic environment, remaining innovative, and retaining our ability to perform.

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 nine interconnected innovation areas, which are grouped according to the areas of our Group strategy, provide a holistic framework that can be applied across the Group. In addition, the success of our innovations hinges on maintaining our focus on just a handful of topics – but on the right ones. In the reporting year, we continued to evolve our innovation priorities in close coordination with the operating segments.

- **5G/XR Cloud:** 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 driving, robotics, and Industry 4.0. Our corresponding prototypes include Cloud Gaming beta, campus networks for Industry 4.0, and XR apps for immersive sporting, entertainment, and tourism experiences. In 2019, we also continued the 5G prototyping program in cooperation with our incubator hubraum, and developed our first commercially viable industrial and multimedia applications together with international start-ups.
- **Fixed Wireless Access (FWA):** New FWA technologies based on the 60 GHz band achieve bandwidths comparable to optical fiber, but without the expense of spectrum license fees, and with shorter installation times. They are thus an ideal and efficient way of rolling out broadband in rural regions (virtual optical fiber). We performed successful tests of this technology in 2019 and launched commercial operation of it in Hungary. SDG 9
- **Network Automation:** In this newly implemented innovation program, we are developing software solutions for the automated analysis and operation of network infrastructure based on artificial intelligence and machine learning. In the future, these activities will continue under the auspices of the Network Differentiation initiatives. Based on cloud and software technologies, this innovative approach to network production will considerably enhance the user experience and improve both flexibility and scalability, simultaneously lowering production costs and opening up new monetization options.
- **Connectivity:** By seamlessly managing the different access technologies from Wi-Fi through to 5G, and combining them with modern data analytics and machine learning processes, we can create a unique connectivity experience. We want our customers to be able to use their digital services and content anytime, anywhere – simply, securely, and in top quality. Step by step, we have made improvements in our existing services and apps, such as the DSL Help app, and added connectivity control to the Connect app. Our next step to achieve seamless customer access will involve integrating the Connect app functions into our subsidiaries' service apps.
- **Magenta Voice:** The second half of 2019 marked the successful launch of Deutsche Telekom's first smart speaker for the German market. 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. On top of that, we are continually adding new content to the voice platform and integrating new partners in it.
- **Home Orchestration:** We want to improve the customer experience by ensuring easy, seamless, and uniform interaction of all Deutsche Telekom's services and devices, and by enabling services from selected partners. This integration and orchestration of the home network, TV, smart speakers, smart home applications, and entertainment services has commenced with an array of successful prototypes.
- **Smart City:** Deutsche Telekom aims to be a trustworthy, reliable, and long-term partner for municipalities on their path to digitalization. The aim is to deliver future-proof connections and IT solutions for the benefit of residents and visitors, thus helping meet environmental and economic challenges. In partnership with the cities themselves and with the German Association of Towns and Municipalities (DStGB), we are putting in place intelligent services and apps for smart parking, air pollution measurement and control, lighting, waste management, etc., with a view to saving energy, cutting costs, and enhancing the quality of life. In cooperation with Green City Solutions, we launched the first connected CityTree in the German city of Darmstadt. SDG 11

For more information on CityTree, please refer to section "2. Partnerships."

- **AI Enterprise:** By integrating artificial intelligence (AI), we will ensure that our products and services remain competitive into the future. For example, AI turns voice control, which simply compares entered words against a list of keywords, into a smart assistant. In conjunction with effective chatbots in the customer service field (e.g., the Digital Service Assistant), it enables us to free up capacity that can be devoted to further enhancing customer support. The chatbots can be reached at any time of the day or night and handle routine tasks without incurring waiting time for our customers. We are working continuously on the convergence of AI and digital processes, and supplying prototypes for a wide range of internal applications.
- **Big Data:** In this new innovation area, our focus is on formulating Group-wide principles for data processing and analytics. A uniform data model will enhance our data analyses and enable us to easily transpose successful analyses to new markets. In this context, we ensure that our customer and network data does not leave the country and data network of the corresponding subsidiary. The privacy and integrity of our customers' data has top priority. SDG 16

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

The establishment of our Strategy & Technology Innovation unit (S&TI), Product Innovation & Customer Experience unit (PIC), and Innovation Hub (IHUB), the optimization of our structures, and our cultural transformation – all these had a key positive impact on our priorities in 2019, as the following examples show:

- **Delivery innovation:** 5G is already available in eight cities across Germany; 450 5G antennas are transmitting data in our network (as of the end of December 2019). Our national company in Austria launched Europe's first 5G network in March 2019. The Digital Service Assistant (AI chatbot) is constantly evolving and receiving more and more positive customer ratings.
- **Customer innovation:** The Smart Speaker and MagentaGaming beta were launched at IFA and Gamescom in the third quarter of 2019.
- **Industry innovation:** Nine pilot projects are currently in progress for industrial campus networks in Germany and our footprint countries in Europe.
- **Technology innovation:** We have defined a Network Differentiation strategy that will serve as a basis for accelerating our transformation into a software-based telecommunications provider, and we have already taken key initial steps to implement this strategy.
- **Transformation:** We are implementing new-skilling initiatives for more than 1,500 employees.

Thanks to our centralized research unit, **Telekom Innovation Laboratories (T-Labs)**, we have access to our own R&D centers. At our T-Labs locations in Berlin, Darmstadt, Be'er Sheva, Budapest, and Vienna, we are surrounded by universities, start-ups, potential investors, research institutes, and other companies' innovation centers – all of them of international standing. In collaboration with them, T-Labs is conducting R&D into the interfaces between science and entrepreneurship, with a view to shaping the future in the key areas of Blockchain, Intelligence, Experience, and Academia as a Service. T-Labs is solving specific customer problems, enhancing Deutsche Telekom's innovative strength, and tapping into the topics of the future. T-Labs' motto in all it does is: Disrupt. Make. Connect. SDG 9

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

RELATIONSHIPS

- **Blockchain** focuses on two aspects. The first is examining blockchain technologies to develop solutions for internal issues at Deutsche Telekom. A specific example is wholesale roaming, where we have implemented a prototype for creating, signing, and billing contracts together with other telecommunications companies. The second is using the blockchain as infrastructure. One example of this is the pilot e-mobility platform Xride. Xride is powered by a blockchain operating stack, called Ståx. Ståx enables decentralized, trusted, and secure IoT ecostructures by connecting blockchain technologies to create a single ecosystem stack and making them easy to handle by, and between, the enterprises involved. Structures like these are crucial to development of the M2M economy, where producers and consumers connect in a decentralized manner and share trusted data.
- **Intelligence** relates to all aspects of teaching cognitive abilities to machines. The resulting artificial intelligence 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. Its research is 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 (in order to protect Deutsche Telekom's customers and its own infrastructure); and quantum AI (to enhance both the speed and quality of machine learning processes).
- **Experience** enables users to experience smart media and progress in extended-reality technologies (XR), and draw benefit from integrated smart-city solutions. The services developed by the Experience team 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.
- **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 corporate brand in the R&D community. What is more, Academia as a Service is responsible for striking a balance between ongoing research in current focus areas and disruptive topics that arise unexpectedly. In this way, it makes a positive contribution to Deutsche Telekom's strategy.

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:

- **CityTree:** As part of its Smart City strategy, Deutsche Telekom has entered into a partnership with Green City Solutions, a pioneer in the field of green technology. The core product of this partnership is CityTree, the world's first biotech filter made of moss. It improves air quality in urban areas and springs from the idea of combining nature with cutting-edge IoT technology. The two partners collaborated to develop a new version of CityTree and to combine the IoT technology with the latest network and mobile communications technology. SDG 13
- **WalkMe:** We have added a new partner to our cloud ecosystem: WalkMe, a specialist in the digital transformation of enterprises. With its Digital Adoption Platform (DAP), WalkMe has become one of the fastest-growing software companies worldwide. DAP was developed to help companies streamline their work processes and to lower the costs they incur to develop, deliver, and run web and mobile apps – both for their customers and themselves. The platform puts a company's employees in a position to roll out new software and processes quickly, easily, and efficiently, thus raising levels of acceptance all round. Our customers can benefit from our own experience in integrating WalkMe, which enables us to offer them comprehensive advice and support when rolling out the platform.
- **StreamOn:** Depending on their rate plan, our customers can stream music and videos, use social media on the move, and enjoy online gaming without having to worry about using up the high-speed data volume included in their plan. Several million StreamOn customers in Germany and other European markets are already benefiting from the more than 440 partner services on offer.
- We have taken digitalization another step forward with our partners **moj.io** and **ADAC**, launching a digital ADAC breakdown service as part of the CarConnect app. CarConnect is set to make driving safer all over Europe. In the event of a breakdown, drivers can, with just a few clicks of the app, get assistance from the ADAC breakdown service anywhere in the European Union. The vehicle's location is transmitted automatically, meaning the driver no longer has to make a call.
- The partnership with **PayPal** enables our subsidiaries to offer their clients the best customer experience for digital payment processes. The payment function is a key component of One App, the service app that has been launched across Europe. The partnership helps the Group achieve its goals as regards cost efficiency, digitalization, and customer experience. PayPal's platform also supports the seamless integration of future e-commerce/marketplace services and new payment methods such as Google Pay and Apple Pay.

3. START-UP FUNDING SDG 9

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 25 companies and worked together closely with around another 300 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). The hubraum Campus at our site in Berlin has been upgraded and, among other things, now offers one of the first 5G networks in Europe and edge cloud infrastructure. Besides coworking office space and mentoring, start-ups now also have exclusive access to our Group's networks, product platforms, and test data to help their business develop faster. Initial results include the implementation in 2019 of 16 projects on the new infrastructure as part of the hubraum edge and 5G prototyping programs. These are set to continue in 2020. In addition, the Consumer IoT program generated five implementation projects with eSIM solutions that are to be marketed as products by our national companies in 2020.

In the following, we describe two examples each from the 5G and IoT-eSIM innovation programs:

- **Immersive.io** uses augmented reality (AR) to offer sports fans an even more attractive experience, by enabling them to access live data on teams and players during match broadcasts. The interaction of AR and live tracking data calls for extremely low latencies – which is where 5G comes into its own.
- **E&K Automation** is one of the leading manufacturers of automated vehicle systems for the European market and offers smart, efficient, and cost-optimized intralogistics and transportation robotics solutions. Edge computing promises lower latency for time-critical aspects of transportation robot control (e.g., recognizing obstacles) and can protect industrial customers' sensitive internal data. With low latency and high bandwidths, 5G expands the potential of robots in the direction of artificial intelligence.
- Croatian start-up **Greyp** teamed up with Deutsche Telekom to present its new e-bike at IFA. The connected bike is equipped with cameras, an on-board computer, and fitness accessories. Its motor output can be adjusted, for example, to suit the rider's heart rate and level of activity. The special thing about this e-bike is its uninterrupted internet connection using eSIM technology. A SIM embedded in the system transmits data between the bike and an app.

- **Neebo by Daatrics** is a prime example of a product developed to solve an existing customer problem. Founder and CEO Andrey Khayrullaev could not find a baby monitoring system in the market to match his requirements as regards child safety. What is special about the solution developed by Neebo and Deutsche Telekom is that it uses both eSIM and LTE-M, enabling a direct connection to the cloud and making the device independent of both Wi-Fi and Bluetooth. SDG 3

3 GOOD HEALTH AND WELL-BEING

FINANCE

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. It ensures that we prioritize correctly by identifying and selecting key areas of innovation for our Group and deciding on the method of implementation. Our efforts are guided primarily by our innovation priorities 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 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 is dedicated to providing venture and growth capital and private equity investments to the technology, media, and telecommunications sectors in the United States, Europe, and Asia. The prime motive for DTCP's investments is financial: It acquires shares in companies still in the growth phase and aids those companies' further growth, with the 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.

For its Venture & Growth Fund II, which was launched in 2018, DTCP succeeded in winning over not only Deutsche Telekom and several notable international financial investors as sponsors, but also SK Telecom, South Korea's biggest mobile communications group, and ZEISS, a leading optics and technology company. Since mid-2018, DTCP has used this fund to invest in eight high-growth companies, one of which, Fastly, celebrated its successful IPO in New York in May 2019. DTCP's Venture & Growth Fund I continues to deliver positive results as well. In a profitable transaction, for instance, DTCP sold its stake in Dynamic Yield to McDonald's in March 2019. At the end of 2019, DTCP opened an office in Seoul, South Korea, in order to expand the reach of its investment strategy into the Asian market.

The strategic investment fund Telekom Innovation Pool (TIP) is available for investments that are mainly strategy-motivated. Advised by DTCP, Deutsche Telekom makes investments here 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 blockchain and artificial intelligence.

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 8,000 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.

EXPENDITURE AND 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 45.4 million in 2019 (2018: EUR 57.7 million). In 2019, our Group's investments in internally generated intangible assets to be capitalized were also up year-on-year at EUR 344.2 million compared with EUR 284.2 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, at the same time, are engaged in the digital transformation of our own company. In many areas, 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 methods of work. Beyond that, we are constantly endeavoring to expand our existing training options in order to entrench a culture of learning and build up the new skills needed to meet current and future challenges. SDG 8

We have derived our **strategic priorities** from the requirements of our employees and our business. Our approach in the pursuit of these priorities is agile, focusing on the business topics of relevance to us.

Our priorities in 2019

1. Recruiting, placing, and developing people
2. Evolving our culture
3. Enabling a customer-centric and agile way of working

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. RECRUITING, PLACING, AND DEVELOPING PEOPLE

Our employees play a crucial role in the transformation of our Group. It is hugely important to us to have the right people in the right jobs and to further develop their individual skills.

Recruiting. We want to be the magnet for global digital talent. In Germany alone, we recruited over 2,000 new employees in 2019, including in the ICT environment. A quick digital recruiting process with a positive candidate journey is the key to success here. We offer a global careers website as a platform to search for jobs. 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. We also 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. 2019 marked the seventh 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

Employer brand. A strong employer brand is essential for recruiting and retaining talented individuals, especially in today's increasingly competitive labor market for IT and tech specialists. To target this group, we developed a new employer branding strategy and employer campaign (#IWILLNOTSTOP) in 2019 and rolled them out worldwide. We are pursuing a digital communications strategy in order to individualize and personalize the way we address this group of potential employees. It involves enhancing our presence with digital image ads and employee stories in video format, which are designed to underscore how our employees can make a difference in their jobs, help achieve social progress, and shape the digital transformation. The message of our campaign is: Become one of us and experience for yourself what we can achieve together.

Succession management. Our own employees are the most important source of candidates for leadership positions at Deutsche Telekom. In order to proceed in a structured manner, we take a global approach to succession planning. A digital process allows us to plan on an ongoing basis and affords us an overview of potential successors for management positions.

The 80/20 model. The 80/20 model is an innovative program to improve employee motivation and collaboration across departments. It gives employees the freedom – on a voluntary basis and in agreement with the superior – to dedicate 20 percent of their working hours to Group-wide projects. The model allows employees to close skills gaps and gives them an opportunity to apply their skills in other areas, irrespective of their department. Introducing this level of flexibility not only promotes the success of the Company as a whole, but also creates a new and innovative way of working, in which employees' skills are valued and managers receive targeted support. SDG 5

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 recent years, more than 1,400 Deutsche Telekom executives have taken part in the first, very successful, levelUP! program, which focused on the topic of Ambidextrous Leadership. In 2019, the levelUP! program underwent a change of content and was given a new title: "Leading Agile." Some 700 executives participated in the first round of the levelUP! Leading Agile program. SDG 5

levelUP!NextGeneration. The huge success of the levelUP! program prompted us to launch a similar program for motivated high potentials in 2019: levelUP!NextGeneration. Around 600 employees worldwide took part in this four-month development program, which utilizes digital learning methods to teach innovative leadership topics and skills. SDG 5

skillsUP! In order to secure the Company's competitiveness and employment, skillsUP! – a successfully piloted strategic skills management program – was further evolved in 2019. In addition to revising task descriptions and skills profiles for qualitative HR planning, and identifying potential retraining measures, the aim of the program is to recognize skills gaps at an early stage and develop tailored training programs. The program is scheduled for rollout in 2020. SDG 5

Youlearn. The purpose of our new Youlearn initiative is to entrench self-paced learning in everyday working life. We are convinced that companies with a pronounced culture of learning also enjoy success in the marketplace. In 2019, we launched a Group-wide campaign for a new way of learning and created a range of innovative portals, tools, and offerings for our employees. These are not only easier to locate, they also help make the learning process a more enjoyable experience for employees. We will also offer our workforce mobile access to learning content as well as new video-based applications that will increasingly enable them to learn whenever and wherever they like. SDG 5

2. EVOLVING OUR CULTURE

We are convinced that, in addition to economic factors, a company's culture is decisive for its long-term success. Our corporate culture is strong and our regular employee surveys underscore that our colleagues identify with our Company and our brand. We want to strengthen this feeling. At the same time, the needs of customers and employees alike, the technologies we use, and our entire market and business environment are changing so fast that we need to evolve our corporate culture too.

Living culture. What culture is the right fit for future business and market trends? What motivates people? Do they enjoy going to work, do they feel appreciated, are their accomplishments recognized? These and other questions were ones we asked ourselves in the Living Culture project launched in 2019. The goal of the project is to work on our future corporate culture together with our employees, developing it, and devising specific measures to make it something we can all experience personally. In the reporting year, we surveyed more than 3,200 employees in 11 countries – from technicians through to the CEO – actively asking them about our culture and staging over 40 workshops. We intend to communicate the results of this project and begin implementing the planned measures in 2020.

Practicing diversity. For over a decade, we have sustainably and comprehensively practiced and promoted diversity throughout the Group. In 2015, we launched a campaign on unconscious bias, which is now running internationally across all levels of the hierarchy. The goal is to raise employee awareness of this issue and bring fresh stimulus for greater diversity within the Company. In the reporting year, we took part in the German Diversity Day, organizing several activities. Together with the successor companies of the former Deutsche Bundespost and with Völklinger Kreis, an association for LGBT managers and self-employed persons, we staged a DiverseCity event at Deutsche Telekom Headquarters. The purpose was to raise managers' awareness of issues such as equality and sexual orientation. Together with almost 250 colleagues, we also demonstrated for greater acknowledgment and respect at the Christopher Street Day parade in Cologne. SDG 5

Gender equality remains a particular concern of ours. Back in 2010, Deutsche Telekom set itself the target of filling 30 percent of management positions across the Group with women. Around the world, the proportion of women in middle and upper management stood at 26 percent at the end of 2019. Following the introduction of the Act on Equal Participation of Women and Men in Executive Positions in the Private and the Public Sector (Gesetz für die gleichberechtigte Teilhabe von Frauen und Männern an Führungspositionen in der Privatwirtschaft und im öffentlichen Dienst), the Board of Management has set a goal of 30 percent women at the two management levels below the Board of Management. We aim to meet these targets by the end of 2020. The proportion of women occupying positions on Deutsche Telekom AG's Supervisory Board was 40 percent as of December 2019. We are constantly working to achieve equal opportunity and diversity through our involvement in the Chefsache initiative and our membership in schemes such as the Diversity Charter and the Technology-Diversity-Equal Chances Competence Center.

Achieving a good work-life balance. Alongside offering traditional support in the form of childcare facilities and family care options, we are also moving increasingly to an HR policy oriented to different life phases that offers flexible working conditions for greater self-determination, and, in doing so, exploits the opportunities provided by digitalization. After concluding the general collective agreement with ver.di in 2017, we rolled out mobile working across the Group as a new way of working. This allows our employees to work from home or on the move, provided the nature of the task lends itself to this. In addition, flexible working hours, the opportunity to go part-time with a guaranteed option to return to full-time work, and lifetime work accounts all give employees greater freedom to structure their working day and achieve a better work-life balance. SDG 8

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. Several initiatives are in place to further enhance employee satisfaction. We expect the results of the next employee survey to once again indicate a high level of satisfaction among our employees.

Employee satisfaction (commitment index)[a]

	2019	2017
GROUP (excluding T-Mobile US)[b]	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.
[b] T-Mobile US conducts its own employee survey.

Employee health. Our health management strategy is designed to maintain our employees' health and performance. We view occupational health and safety legislation as minimum requirements. Our corporate culture encourages our employees to take responsibility for their own health. Managers make an important contribution in this respect. SDG 3

For further information on the subject of occupational health and safety, please refer to the section "Corporate responsibility and non-financial statement."

3. ENABLING A CUSTOMER-CENTRIC AND AGILE WAY OF WORKING

We want to be able to offer our customers value-added products, outstanding performance, and excellent service. Customer-oriented and agile working methods can contribute to achieving this goal and also enable us to respond quickly to change. That is why our HR work focuses on creating the framework for these working methods and empowering our employees to apply them.

Creating the framework. Our Agile Compass provides employees, teams, and managers with orientation for the agile transformation. Its six dimensions provide specific recommendations for action that are based on the experience gained by internal and external experts. Together with the Group Works Council, we have also drawn up a Manifesto on Agile Working to provide corresponding underpinnings across the Group. In the future, agile methods are to be placed on an equal footing with existing ones and used wherever they are considered to be appropriate. SDG 8

Empowering employees. In 2019, we continued our internal training course for design thinking facilitators and practitioners, and succeeded in increasing the number of members of this important community to 425. This helped us disseminate customer-centric methods and encourage their deployment. In addition, a broad-based Agile Enabling program was launched to familiarize our employees, teams, and managers at all levels with agile working methods. We support agile and digital collaboration – from the basics of methods and tools, and training courses for agile coaches through to consultation for specific transformation projects. For example, the Digitales Seepferdchen – a badge that can be earned in several training steps – teaches employees how to get to grips with topics such as virtual collaboration and agile working methods, and acquaints them with the world of digital trends and technologies. Our Agility Check assists managers in assessing the agile maturity of their particular spheres of responsibility and in developing specific action points and offerings.

Major HR awards in 2019

Q1

- **Carbon Disclosure Project**
  Deutsche Telekom was included in the A-list of the CDP's climate protection rankings and consequently in the STOXX Global Climate Change Leaders Index
- **Silicon Valley US Global Excellence Awards**
  Gold and silver prizes for "Best App of the Year"
- **Employer Branding Awards**
  Magyar Telekom was awarded the main prize of the Hungarian public relations association, including gold in the category "Campaign – Large companies"

Q2

- **LinkedIn Top Companies 2019**
  The LinkedIn professional networking site ranked Deutsche Telekom among the top five companies to work for in Germany
- **Inclusion Prize for Business 2019**
  Deutsche Telekom was honored for its exemplary achievements as a company in the training and employment of people with disabilities
- **Female Recruiting Award 2019**
  For the ninth consecutive time, women attending the women& work trade fair rated Deutsche Telekom as the employer with the most attractive image
- **German Stevie Awards 2019**
  Deutsche Telekom wins several gold awards, including for "Best video – PR: technology" and "Company of the year – Telecommunications"

Q3

- **First Choice Employer Survey**
  According to a survey carried out by the MojPosao portal, Hrvatski Telekom is among the most attractive employers in Croatia
- **Deutscher Personalwirtschaftspreis 2019**
  Second place in the category "HR Organization" at the awards bestowed by Personalwirtschaft, a German HR management magazine
- **Best Employer for Women 2019**
  Deutsche Telekom was given top marks in a study conducted by Brigitte, a German magazine for women (issue 21/2019)

Q4

- **HR Best Awards 2019**
  Magyar Telekom won gold in the category "Communication" for agile transformation achievements and silver for agile service management in the category "Life@Work"
- **Most Attractive Employer Award 2019**
  PwC Hungary named Magyar Telekom the country's most attractive employer in the category "Telecommunications"
- **Trendence Awards 2019**
  Deutsche Telekom occupied first place with its recruiting dashboard HR Spot in the category "Data Driven HR"
- **HR Excellence Award 2019**
  First place in the category "Groups, new work" for our Manifesto on Agile Working

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 fell by 2.4 percent compared with the end of the prior year. Development across the segments was varied. The number of employees in our Germany operating segment declined by 3.4 percent as a result of efficiency enhancement measures and the take-up of socially responsible instruments in connection with the staff restructuring. The total number of employees in our United States operating segment increased by 0.9 percent as of December 31, 2019 compared with the prior year, primarily due to ongoing growth in our business. In our Europe operating segment, the headcount was down 7.4 percent compared with the end of the prior year. This was due in part to the sale of Telekom Albania. The headcount also decreased in Romania, Hungary, and Poland in particular. The number of employees in our Systems Solutions operating segment increased by 1.7 percent compared with the end of 2018, mainly due to the first-time inclusion and expansion of a service unit in India. The remaining headcount in this segment decreased by 3.5 percent on account of restructuring measures. In the Group Development operating segment, the 31.7 percent increase in the number of employees can be attributed to the inclusion of Tele2 Netherlands in the Netherlands. The headcount in the Group Headquarters & Group Services segment was down 6.3 percent compared with the end of 2018, mainly due to the ongoing staff restructuring at Vivento and the lower headcount in the Technology and Innovation unit.

WORKFORCE STATISTICS

Headcount development

		Dec. 31, 2019	Dec. 31, 2018	Change %	Dec. 31, 2017	Dec. 31, 2016	Dec. 31, 2015
NUMBER OF FTEs IN THE GROUP		**210,533**	**215,675**	**(2.4)**	**217,349**	**218,341**	**225,243**
Of which: Deutsche Telekom AG		17,461	19,259	(9.3)	21,428	22,571	26,205
Of which: civil servants (in Germany, with an active service relationship)		12,153	13,507	(10.0)	15,482	15,999	18,483
Germany operating segment		60,501	62,621	(3.4)	64,798	66,410	67,927
United States operating segment		47,312	46,871	0.9	45,888	44,820	44,229
Europe operating segment		44,591	48,133	(7.4)	47,421	46,808	48,920
Systems Solutions operating segment		38,096	37,467	1.7	37,924	37,472	37,850
Group Development operating segment		2,603	1,976	31.7	1,967	2,572	2,768
Group Headquarters & Group Services		17,430	18,606	(6.3)	19,351	20,258	23,548
BREAKDOWN BY GEOGRAPHIC AREA							
Germany		94,111	98,092	(4.1)	101,901	104,662	110,354
International		116,422	117,582	(1.0)	115,448	113,679	114,888
Of which: other EU member states		58,743	61,249	(4.1)	59,952	59,456	60,710
Of which: rest of Europe		2,055	2,471	(16.8)	2,620	2,581	2,945
Of which: North America		47,652	47,245	0.9	46,332	45,364	44,803
Of which: rest of world		7,971	6,618	20.4	6,543	6,278	6,431
NATURAL ATTRITION	%	**5.3**	**5.1**	**3.9**	**4.7**	**4.0**	**4.4**
Of which: Germany	%	2.3	1.9	21.1	1.7	1.4	1.3
Of which: international	%	9.5	9.8	(3.1)	9.2	8.1	9.3
PRODUCTIVITY TREND[a]							
Net revenue per employee	thousands of €	378	350	8.2	346	331	306

[a] Based on average number of employees.

Personnel costs

billions of €

		2019	2018	Change %	2017	2016	2015
Personnel costs in the Group		16.7	16.4	1.7	15.5	16.4	15.8
Of which: Germany		8.7	9.2	(5.4)	8.5	9.8	9.4
Of which: international		8.0	7.3	9.9	7.0	6.6	6.4
Special factors[a]		1.0	1.2	(13.6)	0.6	1.6	1.2
Personnel costs in the Group (adjusted for special factors)		15.7	15.2	3.4	14.9	14.8	14.6
Net revenue		80.5	75.7	6.4	74.9	73.1	69.2
ADJUSTED PERSONNEL COST RATIO	%	**19.5**	**20.1**	**(3.0)**	**19.9**	**20.3**	**21.2**
PERSONNEL COSTS AT DEUTSCHE TELEKOM AG UNDER GERMAN GAAP		**2.3**	**2.5**	**(8.3)**	**2.7**	**3.5**	**2.9**

[a] Expenses for staff-related measures.

FORECAST [1]

STATEMENT BY THE BOARD OF MANAGEMENT ON THE EXPECTED DEVELOPMENT OF THE GROUP

We successfully continued our growth course on both sides of the Atlantic again in 2019. We already set ourselves apart by having the best and most modern networks, and we want to continue building on this technology leadership. Over the coming years, we will also focus more on convergent offerings, in line with the expectations of our customers. This goes hand in hand with our Leading European Telco strategy, where our aim is to become Europe's leading telecommunications provider. This is closely related to our financial targets for the period up to 2021. 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:

- **Revenue:** 1 to 2 percent
- **Adjusted EBITDA:** 2 to 4 percent
- **Free cash flow:** approx. 10 percent

For 2020, we expect to post the following year-on-year growth trends, assuming a comparable consolidated group and constant exchange rates:

- **Revenue** is likely to increase again in 2020.
- For 2020, we expect **adjusted EBITDA AL** of around EUR 25.5 billion. In the reporting year, adjusted EBITDA AL totaled EUR 24.7 billion.
- **Free cash flow AL**[2] is expected to grow to around EUR 8.0 billion in 2020. In 2019, free cash flow AL came in at EUR 7.0 billion.

ECONOMIC OUTLOOK

In its economic forecast from January 2020, the International Monetary Fund (IMF) expects global economic growth of 3.3 percent in 2020 and of 3.4 percent in 2021. We expect growth in our core markets to slow, but are not anticipating a recession. The economies of Germany, the United States, and the footprint countries of our Europe operating segment are recording positive growth rates, driven by robust domestic demand. Labor markets are benefiting from this trend as well.

Forecast on the development of GDP and the unemployment/non-employment rates in our core markets for 2020 and 2021

%

	GDP for 2020 compared with 2019	GDP for 2021 compared with 2020	Unemployment/ non-employment rate in 2020	Unemployment/ non-employment rate in 2021
Germany	0.9	1.0	5.1	5.1
United States	1.9	2.0	3.6	3.7
Greece	2.1	2.1	15.4	14.0
Romania	3.6	3.3	4.2	4.3
Hungary	2.8	2.8	3.4	3.4
Poland	3.3	3.3	3.6	3.5
Czech Republic	2.2	2.1	2.2	2.3
Croatia	2.6	2.4	5.8	4.9
Netherlands	1.4	1.3	3.7	4.1
Slovakia	2.6	2.7	5.7	5.6
Austria	1.2	1.4	4.6	4.6

Source: Consensus Economics, European Commission; last revised: January 2020.

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.

[2] Free cash flow AL for 2020, excluding the interest component from the repayment of Deutsche Bundespost treasury notes (zero-coupon bonds) falling due and the potential market value realization of interest rate swaps entered into by T-Mobile US to hedge interest rates.

EXPECTATIONS FOR THE GROUP

Expectations up to 2021. We expect profitable growth to continue over the next two years. Revenue and adjusted EBITDA AL are expected to rise at the Group level in 2020 – providing a good basis to achieve our financial ambitions through 2021 as communicated at our 2018 Capital Markets Day.

We expect our **financial performance indicators** to develop as follows in 2020 and 2021:

- **Revenue** should increase year-on-year in 2020 and also continue to rise slightly in 2021. This forecast is based on a slight increase in revenue in the Germany operating segment and on rigorous implementation of the Un-carrier strategy in our United States operating segment. Our other operating segments will also contribute to revenue growth in 2020 and 2021.
- **Adjusted EBITDA AL** is expected to come in at around EUR 25.5 billion in 2020 and to rise further in 2021 due to the expected upward trend in revenue and planned cost savings. All operating segments will contribute to growth in both years of the forecast.
- **EBITDA AL** is likely to increase in 2020 compared with the prior year, and expected to rise further in 2021. EBIT is also expected to increase in 2020 and 2021 on account of the above-mentioned expected upward trend in revenue and planned cost savings.
- The **return on capital employed (ROCE)** is likely to increase slightly in 2020. This confirms that we are well on track for ROCE to be higher than the expected weighted average cost of capital (WACC) and hence to fulfill the promise we made at the 2018 Capital Markets Day.
- Our investments – measured in terms of **cash capex** (before spectrum investment) – are expected to amount to around EUR 13.0 billion in 2020. 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. Consequently, our cash capex is likely to remain stable relative to 2019.
- **Free cash flow AL**[1] (before dividend payments and spectrum investment) is expected to reach around EUR 8.0 billion in 2020 and to rise further in 2021. Free cash flow should make a contribution toward keeping our relative debt – expressed as the ratio of net debt to adjusted EBITDA – within the target corridor of 2.25 to 2.75x in 2020 and 2021. In the reporting year, the target corridor shifted from 2.00 to 2.50x to 2.25 to 2.75x due to application of the IFRS 16 accounting standard.
- At the end of 2019, we had the following **ratings**: BBB+ (Standard & Poor's – S&P); negative (CreditWatch); BBB+ with a stable outlook (Fitch); and Baa1 with a negative outlook (Moody's). We therefore continue to be a solid investment-grade company. S&P also announced that it would likely lower Deutsche Telekom AG's rating to BBB in the event of a business combination between T-Mobile US and Sprint. Maintaining an investment grade rating within the A– to BBB range will enable us to retain unrestricted access to the international capital markets and is thus a key component of our finance strategy.

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. Our finance strategy continues to include a liquidity reserve that, at any given time, covers at least our capital market maturities over the next 24 months.

Bonds and loans in the amount of EUR 4.5 billion and EUR 5.1 billion will fall due for repayment in 2020 and 2021, respectively. In order to refinance our maturities and maintain the liquidity reserve, we plan to issue new bonds in various currencies. In January 2020, for example, we issued a U.S. dollar bond with a volume of USD 1.25 billion and a term of 30 years. The business combination between T-Mobile US and Sprint would result in the early repayment of intragroup loans of USD 8 billion by T-Mobile US to Deutsche Telekom AG, which would significantly influence refinancing requirements. Further financing transactions are thus dependent firstly on the approval of the business combination of T-Mobile US and Sprint, and secondly on trends in the international financial markets. 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 2021 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. 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.

[1] Free cash flow AL for 2020, excluding the interest component from the repayment of Deutsche Bundespost treasury notes (zero-coupon bonds) falling due and the potential market value realization of interest rate swaps entered into by T-Mobile US to hedge interest rates.

Financial performance indicators

		Results in 2019	Pro forma in 2019[a]	Expectations for 2020[b,c,f]	Expectations for 2021[b,c]
NET REVENUE					
Group	billions of €	80.5	80.5	increase	slight increase
Germany	billions of €	21.9	21.9	slight increase	slight increase
United States (in local currency)	billions of $	45.2	45.2	increase	increase
Europe	billions of €	12.2	12.1	slight increase	slight increase
Systems Solutions	billions of €	6.8	6.8	stable trend	slight increase
Group Development	billions of €	2.8	2.8	increase	increase
PROFIT (LOSS) FROM OPERATIONS (EBIT)	billions of €	9.5	9.5	increase	increase
EBITDA AL	billions of €	23.1	23.1	increase	increase
EBITDA AL (ADJUSTED FOR SPECIAL FACTORS)					
Group	billions of €	24.7	24.7	25.5	increase
Germany	billions of €	8.7	8.7	8.9	increase
United States (in local currency)	billions of $	12.5	12.5	13.0	increase
Europe	billions of €	4.0	4.0	4.1	slight increase
Systems Solutions	billions of €	0.5	0.5	0.6	strong increase
Group Development	billions of €	1.0	1.0	1.1	increase
ROCE	%	5.1	5.1	slight increase	–
CASH CAPEX (BEFORE SPECTRUM INVESTMENT)					
Group	billions of €	13.1	13.1	13.0	–
Germany	billions of €	4.2	4.2	slight decrease	stable trend
United States (in local currency)	billions of $	6.0	6.0	stable trend	–
Europe	billions of €	1.7	1.7	stable trend	slight decrease
Systems Solutions	billions of €	0.4	0.4	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 €	7.0	7.0	8.0	increase
RATING					
Standard & Poor's, Fitch		BBB+		from A- to BBB	from A- to BBB
Moody's		Baa1		from A3 to Baa2	from A3 to Baa2
OTHER					
Dividend per share[d,e]	€	0.60		Dividend follows EPS (adjusted for special factors) growth, minimum of € 0.60	Dividend follows EPS (adjusted for special factors) growth, minimum of € 0.60
EPS (adjusted for special factors)	€	1.04		slight increase	–
Equity ratio	%	27.1		25 to 35	25 to 35
Relative debt		2.65x		2.25–2.75x	2.25–2.75x

[a] Changes in the organizational structure and major changes 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 sale of Telekom Albania).

[b] On a comparable basis.

[c] Possible effects of the planned transaction with Sprint in the United States and of the reorganization of business-to-business telecommunications operations are not included in the expectations.

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

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

[f] Free cash flow AL for 2020, excluding the interest component from the repayment of Deutsche Bundespost treasury notes (zero-coupon bonds) falling due and the potential market value realization of interest rate swaps entered into by T-Mobile US to hedge interest rates.

Non-financial performance indicators

		Results in 2019	Pro forma for 2019[a]	Expectations for 2020[b]	Expectations for 2021[b]
GROUP					
Customer satisfaction (TRI*M index)		67.3		slight increase	slight increase
Employment satisfaction (commitment index)		4.0		stable trend	stable trend
FIXED-NETWORK AND MOBILE CUSTOMERS					
GERMANY					
Mobile customers	millions	46.2	46.2	increase	increase
Fixed-network lines	millions	17.8	17.8	slight decrease	slight decrease
Of which: retail IP-based	millions	17.5	17.5	stable trend	slight decrease
Retail broadband lines	millions	13.7	13.7	slight increase	slight increase
Television (IPTV, satellite)	millions	3.6	3.6	increase	increase
UNITED STATES					
Branded postpaid	millions	47.0	47.0	increase	increase
Branded prepay	millions	20.9	20.9	slight increase	slight increase
EUROPE					
Mobile customers	millions	46.2	46.2	stable trend	slight increase
Fixed-network lines	millions	9.1	9.1	stable trend	stable trend
Of which: IP-based	millions	8.3	8.3	slight increase	stable trend
Broadband customers	millions	6.7	6.7	increase	increase
Television (IPTV, satellite, cable)	millions	4.9	4.9	increase	increase
SYSTEMS SOLUTIONS					
Order entry	billions of €	7.3	7.3	stable trend	slight increase
ESG KPIs					
Energy Intensity ESG KPI	MWh/terabyte	120		strong decrease	strong decrease
Carbon Intensity ESG KPI	t CO_2/terabyte	23		strong decrease	strong decrease
Sustainable Procurement ESG KPI	%	81		stable trend	stable trend

[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.
[b] Possible effects of the planned transaction with Sprint in the United States and of the reorganization of business-to-business telecommunications operations are not included in the expectations.

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 2020 and 2021, 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 2019, 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	7.42
Polish zloty	PLN	4.30
Czech koruna	CZK	25.67
Hungarian forint	HUF	325.28
U.S. dollar	USD	1.12

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 2019 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 going forward. 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 each of the coming financial years, subject to approval by the relevant bodies and the fulfillment of other legal requirements. This applies irrespective of the successful closing of the business combination of T-Mobile US and Sprint.

EXPECTATIONS FOR THE OPERATING SEGMENTS

GERMANY

The German market for telecommunications services saw a slight contraction of 0.4 percent in 2019. The downward trend is expected to slow in 2020, with revenues anticipated to decline by 0.1 percent. The negative trends resulting from regulatory effects and the decline in traditional fixed-network telephony will not be fully compensated for by 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 again in 2020 – by 1.0 percent (source: EITO).

For the wider ICT market, which covers IT services as well as telecommunications, EITO forecasts growth of 1.9 percent for 2020. This plus will primarily result from IT market growth, which, at 2.8 percent, will continue to exceed growth in telecommunications revenues in 2020. This growth will be down to continuing strong demand in two areas: services for business customers (B2B) (e.g., outsourcing, project business, consulting) and software-based services (virtualization and cloud business, e.g., in the shape of software as a service, platform as a service, and infrastructure as a service).

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 StreamOn Gaming, and innovative fixed-network products like the Smart Speaker. We are the first telecommunications company in Germany to tackle 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 introduction of the first sustainable smartphone recycling scheme is another of our initiatives.

The mobile communications market in Germany is currently dominated by three providers, each with its own network infrastructure, who deploy 4G/LTE technology – and also 5G going forward – 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 acquired mobile spectrum and has announced its intention to set up a fourth mobile network. 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.

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. As of the end of 2019, we had for the most part implemented the migration to IP in Germany. We will complete it in full before the end of 2020 and continue building out the infrastructure of our high-performance networks. 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. With the digital transformation and online boom driving a notable shift in market trends and customer behavior, footfall in brick-and-mortar retail is dropping and the number of attractive shopping locations is on the decline. The aim of our realignment activities is to improve the organizational structure and make the necessary workforce adjustments. The new organization is scheduled to be in place as of July 1, 2020. 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.

In the fixed network, we want to offer the best customer experience with fiber-optic-based products. We are paving the way for this with our integrated network strategy – building an IP-based network with high transmission bandwidths so that we can consistently offer our customers competitive high-speed lines, e.g., by systematically building out our fiber-optic network. In addition, we are investing heavily to offer greater coverage and even higher speeds in rural areas as well. For this purpose, we will continue in the future to rely on our hybrid router, which combines the bandwidths of fixed-network and mobile communications, thus enabling much higher transmission speeds. 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 the leader in terms of network coverage, speeds, and customer experience. Our high capital expenditure on 5G technology is geared to our customers' requirements. Over the coming the months, we will focus on Germany's biggest cities, where data usage levels are high. We set ourselves apart from our competitors by offering the best convergent connectivity and will continue to grow with MagentaEINS, our integrated, convergent fixed-network/mobile product. 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. 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. Deutsche Telekom's 5G network is already available in eight German cities. 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, focusing on our entertainment and exclusive streaming offers (e.g., with exclusive series such as “The Handmaid's Tale” and “Godfather of Harlem” on MagentaTV and more than 100 seasons from the FOX+ series catalog). To enable us to offer our customers the best-possible TV experience, we optimized MagentaTV in 2019, introducing the MagentaTV Netflix rate plan and marketing the MagentaTV stick. 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 2020. We will improve customer satisfaction by actively evolving our mobile services (e.g., Magenta apps) and ensuring seamless service across all channels (e.g., web, hotline, shop).

We expect revenue to grow slightly in our Germany operating segment in 2020, despite considerable adverse 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 number of mobile customers as well as slight growth in our broadband products, fueled by demand for TV, high-speed, and hybrid 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. Wholesale sales volumes should remain on a positive trajectory thanks to strong demand for our contingent model.

In each of the next two years, we expect to post year-on-year increases in earnings in our Germany operating segment. For 2020, we expect adjusted EBITDA AL of around EUR 8.9 billion, driven in particular by revenue growth and a simultaneous reduction in indirect costs, mainly through digitalization and automation. Our adjusted EBITDA AL is likely to rise further in 2021. We are also forecasting a slight improvement in the adjusted EBITDA AL margin in both 2020 and 2021.

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 are reducing investments in legacy systems. The focus of our capital expenditures in the coming years will thus fall on our network infrastructure and our mobile network (e.g., FTTH, super vectoring, MIMO, 5G). At the same time, we want to continue building out our fiber-optic network and close gaps in the network in rural areas. In this context, the focus is on business parks. We are expediting the build-out of FTTH accordingly. We want to continue this rollout efficiently and, to this end, are participating in funding programs. We expect our cash capex to decline slightly year-on-year in 2020 and to remain stable year-on-year in 2021.

Changes to the organizational structure in 2020. Business-to-business (B2B) telecommunications business is to be realigned throughout 2020. The changes include setting up a new B2B unit within the Germany operating segment. The new unit will incorporate the TC Services and Classified ICT units which are currently assigned to the Systems Solutions operating segment – with the exception of a number of activities assigned to Classified IT project business. Our expectations for 2020 and 2021 do not include the effects of these changes.

UNITED STATES

The U.S. economy's positive momentum in 2019 did not impact as heavily as in years past the country's ICT market, for which overall spending grew by 2.1 percent in 2019. Growth in ICT sectors either slowed or reversed, almost across the board, with a 0.2 percent negative growth in IT equipment expenditures, and slowed growth rates in IT services, software, and telecommunications equipment. Some reversals are forecast for 2020 – with stronger growth expected in total market ICT growth, mobile data services, and telecommunications equipment.

The U.S. mobile market, in particular, continues to be characterized by intense competition among the major mobile carriers. Overall mobile revenues are expected to increase. Recent changes by service providers, such as the removal of overage charges, the move toward unlimited data plans, and Equipment Installment Plans (EIPs) have contributed to reported declines in ARPU and other revenue metrics.

Leading industry associations such as GSMA expect the United States to lead global migration to 5G. 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. Since December 2019, T-Mobile US has covered large parts of the United States with its 5G network, utilizing its spectrum holding, including the 600 MHz band acquired in April 2017.

In 2020, T-Mobile US will continue to execute on its Un-carrier promise to deliver the best value experience in the U.S. wireless industry. Key elements of the Un-carrier promise include delivering distinctive value for consumers in all customer segments by eliminating customer pain points and providing excellent 4G/LTE services as well as continuing to build out its 5G network. Additionally, the Un-carrier initiatives focus on attracting and retaining a loyal customer base by offering devices when and how customers want them, and plans that are simple, affordable, and without unnecessary restrictions to deliver the best value in wireless.

Please note that the below expectations are on a stand-alone basis, and do not consider impacts of completing the proposed merger with Sprint. T-Mobile US expects continued increases in branded postpaid customers in 2020 and 2021 while expecting slight increases in branded prepay customers in 2020 and 2021. 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 branded postpaid and prepay customers.

T-Mobile US expects an increase in total revenues in U.S. dollars in 2020 and 2021, primarily as a result of branded postpaid customer growth momentum. However, significant competitive pressures and the adoption of lower-ARPU customer segments will continue to put pressure on ARPU.

For 2020 and 2021, T-Mobile US expects a sustained increase – in U.S. dollars – in adjusted EBITDA AL. Revenue growth is expected to outpace increases in expense as T-Mobile US is focused on driving operating cost efficiencies to take advantage of improved scale effects. However, continued investment in building out the 5G network will likely impact adjusted EBITDA AL. Competitive pressures may also significantly affect expected revenues and adjusted EBITDA AL.

Excluding expenditures relating to spectrum, T-Mobile US expects a stable development in cash capex in 2020 in U.S. dollars as it continues to build out its 5G network.

EUROPE
Overall, we expect the traditional communications markets in the Europe operating segment to remain stable over the next two years, for both mobile and fixed-network business (including traditional TV services). Continuing declines in voice services can be offset by data services in both submarkets, as well as by traditional TV services (excluding OTT) in the fixed network.

For fixed-network business, Analysys Mason expects to see annual growth of around 3 percent in the broadband market in both 2020 and 2021, while voice services are likely to shrink by more than 4 percent per year. Traditional TV services are forecast to grow by around 1 percent in each of the next two years. In the mobile markets, data services are expected to grow by 5 percent in 2020 and 4 percent in 2021, driven mainly by the use of mobile video services. Analysys Mason expects overall data volume in the countries of the Europe operating segment to grow by 34 percent in 2020 and by another 28 percent the year after. We are already seeing investments in 5G networks in almost all the markets of our Europe operating segment, and initial commercial services have already been launched in Austria and Hungary, for example. This will further improve coverage of large parts of the population with high-speed mobile internet. By contrast, the relevance of traditional voice services also continues to wane in mobile communications, and analysts are forecasting a revenue decline of around 5 percent per annum in this area.

According to the European Union's economic forecast, real GDP will continue to rise in all our footprint countries in 2020 by between 1 and 4 percent per annum. This ongoing positive economic environment should also have an impact on IT markets. EITO forecasts growth of around 3 percent in 2020 for the countries of our Europe operating segment.

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, which is why we are positioning FMC offerings across all our subsidiaries. In addition, we plan to play a decisive role in shaping the digital transformation, leveraging our smart network infrastructure, which comprises a range of technologies, to offer innovative solutions for households, business customers, and municipalities.

The Europe operating segment is characterized by its strong portfolio of companies. All of our national companies are noted for being integrated providers of telecommunications services. This, and their high brand recognition levels, make them very significant players in their respective home markets. We want to actively continue the transformation of these companies – which are still predominantly active in mobile communications business (e.g., in Poland and the Czech Republic) – into integrated enterprises, either using their own resources (through the rollout of fiber-optic network infrastructure) or by means of partnerships with other service providers. In the reporting year, for instance, we were already able to provide our customers in Poland with comprehensive convergent services by utilizing Orange's fiber-optic network.

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. Almost half of all customers in our segment already have a MagentaOne contract, and we want to increase this share successively over the next two years. We believe the redesigned product portfolio – which we launched in a number of countries in the reporting year and which is based on the more-for-more principle – will help achieve this. We intend to carry out this relaunch in further countries over the next two years. As a result, we expect FMC revenues to increase by around 25 percent per annum until 2021. By offering additional services, we aim to lower the churn rate and create a stable customer base. This stability will have a positive influence on the value we have in the markets of our operating segment. If we look at the trends in the markets of our Europe operating segment, it is evident that demand for convergent products remains high. That is why we expect the number of households with convergent products to rise by about 20 percent over the next two years.

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. We successfully launched this service app in the market across all our subsidiaries at the end of 2019, reaching an overall penetration rate of over 50 percent. Hence, we have already met our target figure of over 50 percent, which we originally planned for 2021. A further aspect in terms of enhancing the customer experience is our aim to structure things so that they are easier for customers to handle. In Poland, we have reduced the number of rate plans, for example, and ensured that our invoices fit onto a single page. As a result, we have already been able to reduce the number of calls to our customer center by one-third. We are firmly convinced that our customers will recognize the advantages of this approach, e.g., considerably improved service and fast, flexible handling. Thus, we believe we can achieve first or second place in customer satisfaction rankings of telecommunications companies in the respective national companies by 2021, as measured by the TRI*M index which is based on empirical research (customer surveys).

One of the main factors for the success of FMC is TV business. A key focus is the seamless experience of TV and entertainment services, in particular exclusive, high-quality proprietary content. Going forward, we will continue negotiations to acquire (co-)exclusive rights to broadcast sports events, such as the Champions League, or the rights to TV movies/series. In addition, we are focusing on offering high-quality content at local level. We are also working together with what are known as OTT players, like Netflix or Amazon 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 rollout of 5G has already begun, and our national company in Austria started marketing it in 2019. Further countries in our Europe operating segment will gradually follow suit over the next few years, depending on their local market needs and on the results of spectrum auctions. Initial pilot projects for 5G are up and running in almost all countries. In the mobile communications market, we continue to invest in expanding LTE reach and implementing additional LTE frequency layers in order to increase network capacity. In 2019, we already achieved 98 percent coverage of the population in the countries of our Europe operating segment with LTE and are thus well on track to reach our target. Our ultimate aim is to achieve network coverage of 99 percent in our European footprint by 2021. One aim of our integrated network strategy is to make further advances in the fiber-optic rollout. In Hungary, Romania, Slovakia, Croatia, North Macedonia, and Montenegro, we have been investing in FTTH rollout for a number of years now, and plan to continue doing so. The goal is to supply around 750,000 million new households per year with optical fiber by 2021. Overall, we want 30 percent of all households in the markets of our major national companies (Hungary, Greece, Croatia, and Slovakia) to have access to optical fiber by 2021.

Over the next two years, we will deliver the benefits of digitalization to our business customers, e.g., via new B2B contact options in our Telekom Shops and on our websites. In addition to that, we will support cities and municipalities across Europe in their quest to implement smart solutions in areas such as traffic and waste management. Whether they are large or small, our business customers will experience our best 4G, 5G, and fiber-optic networks in their everyday business. Among other things, we expect this to generate constant growth in our revenues and margins for both mobile and fixed-network business. We are working on standardized software and IoT solutions for faster and more secure networks to help us become Europe's market leader in cloud computing. One thing we did to achieve our target was to establish a partnership with Microsoft in the reporting year that will allow us to secure an ever-larger share of this growing market.

In our Europe operating segment, we expect to win more customers over the next two years, mainly thanks to the good performance of MagentaOne, our convergence brand. Consequently, we expect the number of TV and broadband customers to increase in 2020 and 2021. In 2020, the number of mobile customers is likely to remain stable compared with the previous year on a like-for-like basis and to rise again slightly in 2021. We expect the number of fixed-network lines to remain stable in 2020 and 2021.

We expect revenues for our Europe operating segment to increase slightly in 2020, measured on a comparable basis, i.e., at constant exchange rates and market conditions, and given an unchanged organizational structure. 2021 should then see a return to moderate revenue growth.

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. We expect adjusted EBITDA AL to increase again in 2020 and to come in at around EUR 4.1 billion year-on-year in 2020. It should then grow slightly in 2021.

In order to expand 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. Cash capex will remain stable in 2020 year-on-year, and we are assuming it will decline slightly in 2021.

SYSTEMS SOLUTIONS

Overall, growth in the ICT market is expected to continue apace over the next two years, while cost pressure and intense competition are likely to persist. At the same time, we expect the digital transformation to stoke demand for solutions for cloud services, big data, smart network services such as Industry 4.0, the Internet of Things, and M2M, as well as for the mobilization of business processes and ICT security (cybersecurity).

We expect the two main segments of the ICT markets to develop along divergent paths:

- **Telecommunications (TC):** The highly competitive fixed-network market for large business customers remains challenging. Innovative change, intense competition, constant price erosion, and the interventions of national regulators are all likely to slow market growth, even though business with both mobile data services and the Internet of Things will continue to grow in the coming years. 5G, Wi-Fi 6, and software-defined networks are the standout trends in the TC market. With networks becoming smarter and mobile capacities rising, companies enjoy new options for their business activities. These will become evident, for example, in campus networks. TC services remain a key cornerstone of the ongoing digitalization trend.
- **IT services:** The strong growth in the market for IT services posted in the reporting year is likely to continue into 2020 and 2021. 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 is likely to decline due to price competition, while cloud services, mobility, and cybersecurity may reach double-digit growth. In view of all this, our plan is to continue investing heavily in growth markets – especially in digitalization (e.g., EDGE and blockchain), multi- & hybrid cloud services, cybersecurity, and smart network solutions.

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. Our horizontal platforms and vertical solutions facilitate continuous operation of traditional systems as well as the transformation to digital business applications, which can be operated in accordance with specific requirements. Partner products and services are an integral part of our portfolio, which offers our customers vendor-independent managed services.

Under the program launched at the start of 2018 to transform our Systems Solutions business, we have realigned our organization and processes, developed a new strategy for our portfolio, and created three product clusters:

- **TC Services cluster:** Fixed-network services and mobile services are a key component of our business customer segment. We are investing in new technologies and spearheading the technology revolution so as to guarantee our customers corresponding added value and global availability.
- **Classic IT cluster:** Dedicated SI solutions, managed infrastructure services, and private cloud offerings secure our customers' existing infrastructure and form the starting point for the transformation into new business areas. Measures to enhance efficiency are helping us shore up our margins in these business areas, where price pressure remains high.
- **Growth cluster:** The focus here is on public cloud managed services, the Internet of Things (IoT), digital solutions, security, SAP, classified ICT, health, and road charging – and our investments in all these growth areas offer our customers the best solutions on future-proof platforms. A focus on scalable business models and global partnerships with specialized vendors enables attractive margins and our continued investment in these areas.

After another increase in order entry in 2019, we are continuing to push the expansion of growth business, while at the same time stabilizing traditional IT business, with the aim of achieving a significant shift in the revenue mix toward our growth areas by 2022.

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 forecast a stable trend in order entry for the Systems Solutions operating segment in 2020 and stable revenue. Adjusted EBITDA AL is expected to increase again, reaching around EUR 0.6 billion. Due to ongoing investments in growth areas, we expect cash capex to remain stable. For 2021, we expect to see a slight year-on-year increase in order entry and revenues, a strong increase in adjusted EBITDA AL, and stable cash capex.

Changes to the organizational structure in 2020. Business-to-business (B2B) telecommunications business is to be realigned throughout 2020. The changes include setting up a new B2B unit within the Germany operating segment. The new unit will incorporate the TC Services and Classified ICT units which are currently assigned to the Systems Solutions operating segment – with the exception of a number of activities assigned to Classified IT project business. Our expectations for 2020 and 2021 do not include the effects of these changes.

GROUP DEVELOPMENT

Our companies T-Mobile Netherlands and Deutsche Funkturm (DFMG) dominate the performance of our Group Development operating segment.

Strong price and competitive pressure in the Dutch mobile market should continue over the coming years. One of the main trends contributing toward this is the growing bundling of fixed-network and mobile products into convergent products (FMC). What is more, both the strong discount segment, comprising mobile providers' secondary brands, and MVNOs will continue to make for lively competition. GD Towers comprises two equity investments: DFMG and T-Mobile Infra B.V. With some 31,200 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 3,200 sites, T-Mobile Infra B.V. is one of three providers of passive wireless infrastructure in the Netherlands.

We expect the revenues of our Group Development operating segment to increase in 2020, as well as in 2021. Adjusted EBITDA AL is set to increase in 2020 to around EUR 1.1 billion and we expect to see a further increase in 2021.

T-Mobile Netherlands' acquisition of Tele2 Netherlands as of January 2, 2019 was in line with our long-term strategy and is strengthening our position in the Dutch market as a sustainable provider of FMC products. We are tackling the difficult competitive situation in the Netherlands with a strategy that has enabled us to stabilize our EBITDA in recent years, and we intend to continue pursuing this strategy in 2020. Its main components are integration of Tele2 Netherlands, repositioning of the T-Mobile core brand, expansion of our portfolio of convergent products, and efficient cost management.

We expect investments in our Group Development operating segment to continue growing strongly in 2020, with a further increase projected for 2021. This is due to sustained high network investments to safeguard T-Mobile Netherlands' strategy, as well as the continued build-out of DFMG cell sites in Germany.

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 and activities, 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.

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 2020 and 2021 will include technology development and the implementation of our IT strategy as well as the establishment of centralized production platforms as part of the Pan-Net program. 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 as a whole finance its innovation endeavors. We are focusing innovation topics, such as development of the new 5G mobile communications standard, evolution of a proprietary smart system for the 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 2019 compared with the previous year. Our major challenges particularly include the regulatory factors, 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. 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.

RISK AND OPPORTUNITY MANAGEMENT SYSTEM

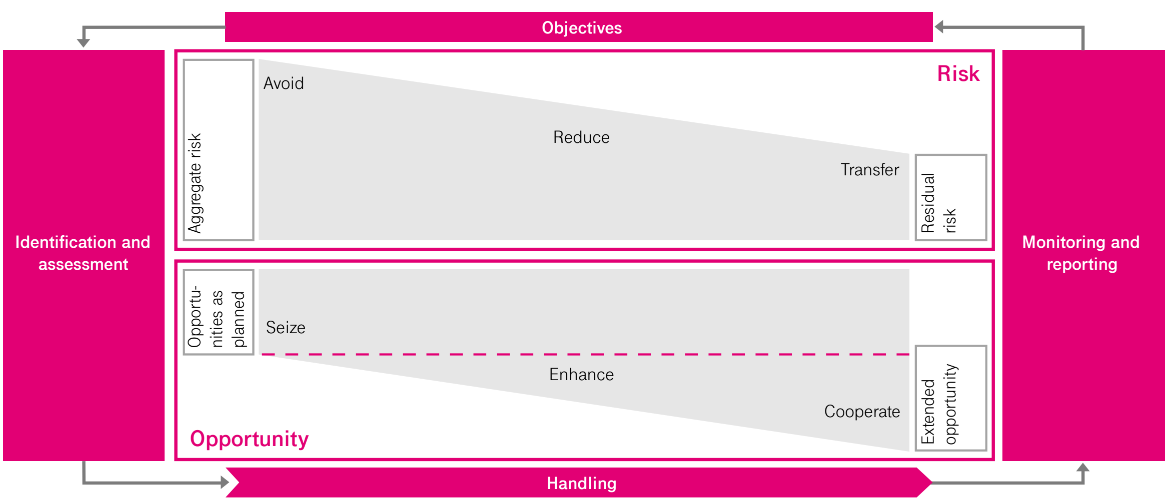
As one of the world's leading providers in the telecommunications and information technology industry, we are subject to all kinds of uncertainties and change. In order to operate successfully in this ongoing volatile environment, we need to anticipate any developments at an early stage and systematically 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 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. 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:

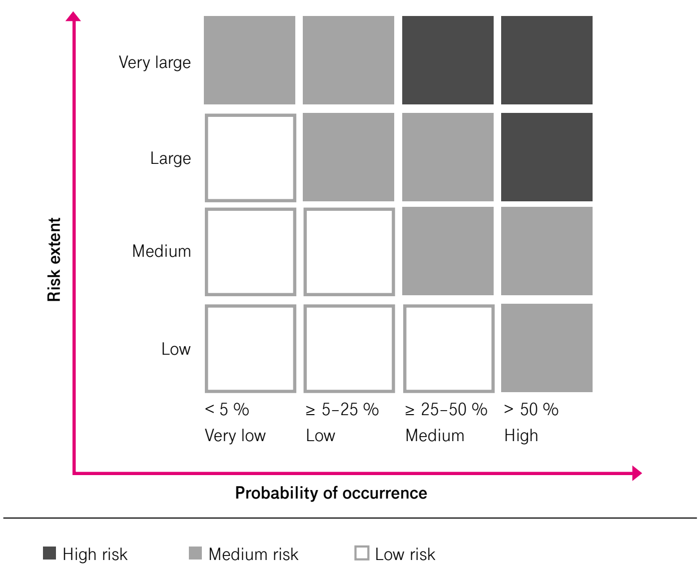
Probability of occurrence	Description
< 5 %	Very low
≥ 5 to 25 %	Low
> 25 to 50 %	Medium
> 50 %	High

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. Since the 2019 financial year, the risks and opportunities have no longer been assessed in terms of their risk extent using the performance indicator EBITDA, but rather using EBITDA AL.

For further information on the new performance indicators, please refer to the section “Management of the Group.”

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.

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	Low	Small	Low	Unchanged
Economic risks, United States	Low	Medium	Low	Unchanged
Economic risks, Europe	Low	Medium	Low	Unchanged
Risks relating to the market and environment, Germany	High	Small	Medium	Unchanged
Risks relating to the market and environment, United States	Medium	Large	Medium	Unchanged
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	Medium	Large	Medium	Unchanged
Risks relating to IT/NT network operations, United States	Very low	Large	Low	Improved
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	Large	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	Deteriorated
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 reduce the purchasing power of our customers and adversely affect our access to the capital markets. Exchange rate fluctuations could impact on our earnings.

Despite the subdued but by and large positive economic development in the past year, economic uncertainties have increased worldwide. Leading institutes and organizations have revised their growth forecasts downwards and expect global economic growth to slow down. The main risks for future economic development are uncertainties from international trade conflicts, a disorderly Brexit, and political uncertainty, especially in Europe.

These risks are offset by opportunities, especially from the unabated strong growth in the United States and in most countries of our Europe operating segment. There are no signs of a recession in the United States in 2020. We merely expect the rate of growth to slow as a result of falling fiscal impetus. The economic momentum will also fade in Europe. Falling demand for exports should be offset, at least in part, by the ongoing robustness of the domestic economy in Europe. Accordingly, we only expect a slowdown in growth here, not a recession. This is all the more true as the expansive monetary policy of the European Central Bank (ECB) stimulates domestic demand and investment activity in the eurozone.

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, 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.

The risk significance of the “Market and environment, Germany” risk cluster has been classified as “medium” since Vodafone Deutschland acquired Unitymedia from Liberty Global. The takeover has given Vodafone an extremely large share of the cable TV market and established its dominance in the housing market. As part of the approval process, the EU Commission imposed obligations on Vodafone Deutschland, as a result of which, Vodafone Deutschland opened up the cable network of the combined entity to Telefónica Deutschland. This could further increase competitive pressure in broadband and TV services, and result in falling revenues in the retail and wholesale area.

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 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. This could pose a risk to revenue in 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 is subject to a number of conditions, including, among others, obtaining certain governmental authorizations, consents, orders or other approvals, and the absence of any injunction prohibiting the business combination or any legal requirements enacted by a court or other governmental entity preventing the completion of the business combination. Although we firmly believe that the business combination will generate synergies and further benefits, we cannot rule out the possibility that these cannot be realized to the extent anticipated or within the planned time frame.

Our Systems Solutions operating segment also faces challenges. Continued strong competition and persistent cost pressure are adversely affecting traditional ICT 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. The introduction of IP technology in telecommunications business is enabling price reductions, which poses a risk of revenue losses and declining margins at T-Systems. Future issues like 5G and software-defined networks are initiators for new project business.

Opportunities relating to the market and environment. The telecommunications and IT market is extremely dynamic and highly competitive. The economic conditions 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, in particular in the Europe and United States operating segments. 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 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, and IT. SDG 9

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 M2M communication on a large scale in the Internet of Things (IoT) and the growing need for reliability, security, and guaranteed resource allocation 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 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

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.

Opportunities relating to strategic transformation and integration. The IP transformation (all IP) offers many opportunities. A logical network is being created that speaks a single 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.

But the all-IP network can do more. It is the network infrastructure cloud underpinning not only the virtualization of functions and services, but also joint production across borders (Pan-Net). This will also create opportunities for enhancing efficiency and for further growth. The idea of developing services only once and then marketing them in different countries will make it possible to get those services to market faster and more cost-effectively.

In addition, 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

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 European and national 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. The Code provides for less regulation of “very high capacity networks” and more stable regulatory conditions over the long term in cases where competitors invest jointly, as is the case with open co-investment models. In addition to establishing co-ownership and co-financing, co-investment models also include long-term agreements on access-based network usage that comply with specific requirements designed to safeguard competition. Fiber-to-the-building/home (FTTB/FTTH) networks, in particular, could benefit from the new rules. At the same time, the new legal framework gives the regulatory authorities new powers to impose access obligations on all networks independent of whether a company has significant market power (symmetrical regulation). In terms of spectrum policy, the new EU regulatory framework aims to increase the level of harmonization of the award rules in the different member states in certain areas and thus improves legal certainty when awarding mobile spectrum, for example, by including a minimum license term of 15 years with an option to extend for a further five years. With respect to consumer protection, apart from a few exceptions, fully harmonized obligations are in place at European level – thus negating the need for additional national regulations – whereas obligations in individual areas are becoming more stringent. Transparency obligations are being extended greatly, while the regulations on contract terms and changes of provider are being tightened up further. Universal service is being completely overhauled, with the removal of many services that are hardly used anymore. In future, to enable the use of services including video telephony, access lines will have to be broadband in order to meet universal service requirements. Certain rules are not required to be transposed into national law. For example, the regulation of retail rate plans for voice calls and text messages into other EU countries took effect as of May 15, 2019 as part of a directly applicable EU Regulation. Rates for international voice calls and sending text messages within the EU have been limited to 19 ct/minute and 6 ct/text message (net) for five years. Under the Code, the European Commission will set uniform price caps for mobile termination rates (MTR) and fixed-network termination rates (FTR) for all member states at the end of 2020 by way of a delegated act.

The revision of the EU legal framework for telecommunications forms 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., under 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 Interstate Treaty on Broadcasting and the German Telemedia Act, as well as to competition law) are being discussed in response to the phenomena of digitalization and convergence.

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. 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 0.7 GHz, 1.5 GHz, 3.4 GHz/3.8 GHz, and 24 GHz and over ranges. In addition, spectrum licenses, especially in the 2.1 GHz range, have expired or will expire between 2019 and 2021 in some countries and need to be renewed. Award procedures are currently being prepared in Austria, Croatia, the Czech Republic, Greece, Hungary, North Macedonia, the Netherlands, Poland, Romania, Slovakia, and the United States.

For information on spectrum auctions that were completed in 2019 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. A case in point at the European level is the **EU Regulation concerning the single market for electronic communications**, which was enacted 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. In Germany, for example, the Federal Network Agency has 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 abroad continue to be subject to comprehensive **regulation of wholesale products**, obligating us to make our network and services available to our competitors. 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, termination rates**, and the associated services. 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 Federal Network Agency 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**. The latter 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 2019, we once again used socially responsible measures to restructure the workforce in the Group, mainly by means of severance payments, partial and dedicated retirement, internal retraining measures, and employment opportunities in public service for civil servants offered by Telekom Placement Services. 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 1,452 civil servants are entitled to return from outside the Group to Deutsche Telekom in this way (as of December 31, 2019).

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 T-Systems is in charge of protecting our corporate 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

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

FINANCE

The risk significance in the risk category "Risks relating to IT/NT network operations, United States" was regraded from medium to low at the beginning of 2019. This was due not only to the geographical redundancies that were put in place, but also to the adequate disaster recovery functions for the billing systems for customer services, which were rated as functional in tests. The risk is thus mitigated and will no longer be reported.

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 data communication, big data, 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

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

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. The ongoing implementation by T-Mobile US of a customer billing system, which involves a third-party-supported platform, may cause major system or business disruptions, or T-Mobile US may fail to implement the billing system in its entirety or in a timely or effective manner.

Opportunities relating to the IT architecture in the United States. To be successful, T-Mobile US must provide its customers with reliable, trustworthy service and information security. T-Mobile US is making significant investments in its IT infrastructure and wireless network. If this results in a significant improvement in processes, then the savings made could be higher than previously assumed.

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. 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.

Data privacy and data security. Following the successful implementation of the General Data Protection Regulation (GDPR) in 2018, the aim for 2019 was to further consolidate the more stringent data protection requirements under the GDPR and harmonize them within the Group while constantly adapting them to new developments. For instance, the GDPR has introduced new procedures such as the Privacy Impact Assessment for assessing and documenting risks in data processing. While we have already had such a process in place for ten years with the Privacy Security Assessment (PSA), which is now also entirely digital, we nevertheless need to adapt such processes to modern, agile working methods. That is why, with the PSA@AGIL project, we have updated the process and also introduced new roles with the Privacy&Security Champions, who have explicit data privacy responsibility in agile product development. In addition to new working methods, we have looked intensively at new technologies and developed guidelines for using them in a data privacy compliant manner (e.g., artificial intelligence, IoT, voice recognition technologies such as those used in our digital voice assistant Hallo Magenta). 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

16 PEACE, JUSTICE AND STRONG INSTITUTIONS

STRUCTURE

In addition, the new data protection legislation has closed a major regulatory gap when it comes to service providers outside of the EU. The GDPR also applies to non-European market players (e.g., Google, Facebook, and Apple) targeting customers in the EU, and will thus enhance the overall competitive situation. However, data in the hands of telecommunications providers will still be subject to separate, more stringent regulation until the ePrivacy Directive is revised. Telecommunications providers in Europe thus still have a competitive disadvantage in some areas – one that the new proposed regulations that have thus far been made public will only partially alleviate. As telecommunications providers' data processing options are substantially restricted compared with what is possible under the GDPR, it is unlikely that big-data applications in the field of telecommunications will be able to realize their full potential. According to the current draft of the planned ePrivacy Regulation, which is to replace the ePrivacy Directive, it will be possible to process metadata only with the customer's approval. The draft ePrivacy Regulation does not provide for the possibility of processing for compatible purposes using pseudonyms. Big data applications in particular, however, depend on large volumes of data for reliable results. Solutions based purely on consent will have limitations. That will rule out various service models that may be useful to consumers, but cannot be implemented with anonymized data, such as services for finding parking spaces and avoiding accidents, tailored TV programming, or telemonitoring services in the healthcare field. However, proposals put before the EU Council to bring the ePrivacy Regulation more closely in line with the GDPR are moving in the right direction. In particular, the proposal to incorporate processing for compatible purposes using pseudonyms into the ePrivacy Regulation would be an important step towards innovation-friendly regulation while at the same time maintaining a high level of data privacy. It is important, therefore, that the proposed legislation continues to pursue this balanced approach in 2020.

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. SDG 17

17 PARTNERSHIPS FOR THE GOALS

RELATIONSHIPS

We are continually striving to accelerate our growth through IT security solutions. To this end, we have combined our security units within T-Systems. 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.

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 online survey for all stakeholders; 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, 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

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 and conduct in relation to human rights 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

- **Climate protection.** 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 nine-percent 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 144 percent higher in 2019 than our own CO_2 emissions (enablement factor of 2.44 to 1). SDG 13

  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. In addition, we evaluate internally how reporting on climate-related financial risks and opportunities can be aligned with the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD). This should build on the existing approaches for strategy, controlling, and risk management.

  We can take further preventive action in this area by also reducing our own CO_2 emissions. For this reason, we set ourselves a new and ambitious target of cutting 90 percent of emissions across the Group by 2030 as compared with 2017. Climate protection also carries financial risks, whether from the introduction of a levy on CO_2 emissions or an increase in energy costs. The measures we are taking to counter these risks include measuring our own energy efficiency and finding ways to improve it. In 2019, three of our subsidiaries (Magyar Telekom in Hungary, OTE in Greece, and T-Mobile Netherlands) covered 100 percent of their electricity requirements with renewable energy, while a further three (Deutsche Telekom in Germany, T-Mobile US, and Hrvatski Telekom in Croatia) almost met this target, thus reducing climate risks.

- **Suppliers.** 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. SDG 8

8 DECENT WORK AND ECONOMIC GROWTH

RELATIONSHIPS

- **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. SDG 3

3 GOOD HEALTH AND WELL-BEING

RELATIONSHIPS

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.

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 originally relates to 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 by partnering publishers of telephone directories. Several publishers that had set up joint ventures with the then DeTeMedien GmbH – formerly a wholly owned subsidiary of Deutsche Telekom AG and now named Deutsche Tele Medien GmbH – to edit and publish subscriber directories filed claims against DeTeMedien GmbH and/or Deutsche Telekom AG at the end of 2013. The plaintiffs are claiming damages or a refund from Deutsche Tele Medien GmbH and, to a certain extent, from Deutsche Telekom AG as joint and several debtor alongside Deutsche Tele Medien GmbH. The plaintiffs base their claims on allegedly excessive charges for the provision of subscriber data in the joint ventures. The amounts claimed by the 81 original plaintiffs totaled around EUR 470 million plus interest at the end of 2014. After an agreement was reached with the majority of the publishers in October 2015 to settle the disputes and a number of claims were since dismissed conclusively or withdrawn, seven actions are still pending for a remaining amount in dispute of around EUR 50 million plus interest. In one of these proceedings, the Federal Court of Justice dismissed the appeal in its ruling dated January 29, 2019. This ruling has a direct impact also on the other proceedings, such that the associated risk can be classified as remote. As a result, we will no longer report about this series of proceedings in the future.

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.

Arbitration proceedings against T-Mobile Polska S.A. In August 2019, Polish telecommunications provider P4 Sp. z o.o. initiated arbitration proceedings against T-Mobile Polska S.A. The plaintiff is claiming around PLN 400 million (around EUR 93 million) plus interest as payment for its alleged entitlement to retroactive mobile termination rates.

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.

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. Three claims totaling EUR 215 million plus interest are currently pending seeking compensation for alleged damages due to Slovak Telekom's abuse of a dominant market position, as determined by the European Commission. 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.

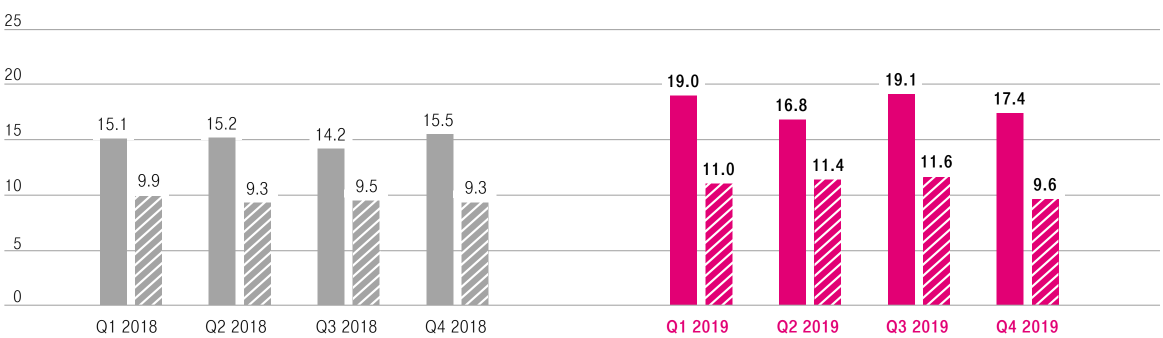
For further information on the risk assessment, please refer to the "Corporate risks" table above.

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.

At December 31, 2019, Deutsche Telekom 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 for the next 24 months at least (see graphic below). From today's perspective, our access to the international debt capital markets is not jeopardized.

Development of the liquidity reserve, maturities in 2018/2019

billions of €



Liquidity reserve (absolute figures)

Maturities in the next 24 months (Callable bonds of T-Mobile US are included with their original maturity up to the date of the call.)

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. We continuously monitor accounts receivable in operations in a decentralized manner. Our business with corporate customers, especially with international carriers, is subject to special solvency monitoring.

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 currently at an all-time low, our risk assessment for a rise in interest rates has increased. As a result, the risk significance in the risk category "Liquidity, credit, currency, interest rate risks" has gone up overall from "low" to "medium." 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 in U.S. dollars is primarily determined through fixed-income securities with 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, 2019, Deutsche Telekom AG's credit rating with Moody's was Baa1 with a negative outlook, while Standard & Poor's rated us BBB+ with an outlook of CreditWatch negative, and Fitch confirmed its current rating of BBB+ with a stable outlook. Standard & Poor's also announced that it would likely lower Deutsche Telekom AG's rating to BBB in the event of the successful closing of the business combination between 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, 2019, the Federal Republic and KfW Bankengruppe jointly held 31.9 percent 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, 2019, around 18 percent of all T-Shares were held by SRI (socially responsible investment) investors, and 3 percent were held by investors who manage their funds primarily in accordance with SRI aspects. SDG 8

8 DECENT WORK AND ECONOMIC GROWTH

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, 2019.

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 AND § 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: https://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, 2019.

SHAREHOLDERS' EQUITY

Each share entitles the holder to one vote. These voting rights are restricted, however, in relation to treasury shares (at December 31, 2019: around 19 million in total).

Treasury shares. The amount of capital stock assigned to treasury shares was approximately EUR 47 million at December 31, 2019. This equates to 0.4 percent of the capital stock. 18,524,848 treasury shares were held at December 31, 2019.

> For information on the treasury shares in accordance with § 160 (1) No. 2 AktG, please refer to Note 9 in the annual financial statements of Deutsche Telekom AG as of December 31, 2019 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 percent 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. 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, treasury shares (448 thousand in total) were reallocated and transferred to the custody accounts of eligible participants of the Share Matching Plan. As of December 31, 2019, disposals of treasury shares resulting from the transfers in the reporting period accounted for less than 0.01 percent, or EUR 1,148 thousand, of share capital. Gains on disposal arising from transfers of treasury shares amounted to EUR 6,030 thousand. Transfers of treasury shares increased retained earnings by EUR 4,055 thousand and capital reserves by EUR 828 thousand. In the reporting year, 238 thousand treasury shares with a fair value of EUR 3,578 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, 61 thousand previously deposited shares were reallocated for issue to eligible participants of the Share Matching Plan.

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 percent 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, 2019, 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

1. 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

2. 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 percent 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 206 foreign subsidiaries are fully consolidated in Deutsche Telekom's consolidated financial statements (December 31, 2018: 61 and 213). 10 associates (December 31, 2018: 9) and 7 joint ventures (December 31, 2018: 6) are also included using the equity method.

The principal subsidiaries of Deutsche Telekom AG are listed in the notes to the consolidated financial statements in the section "Summary of accounting policies" under "Principal subsidiaries."

BUSINESS COMBINATIONS

In December 2017, Deutsche Telekom signed an agreement with the Tele2 Group on the acquisition of 100 percent of the shares in the telecommunications provider Tele2 Netherlands Holding N.V. by T-Mobile Netherlands Holding B.V. The European Commission approved the transaction without conditions on November 27, 2018 and the transaction was consummated on January 2, 2019. Tele2 Netherlands has been fully included in our consolidated financial statements since the acquisition date.

For further information, please refer to the section "Changes in the composition of the Group and other transactions" in the notes to the consolidated financial statements.

COMPENSATION REPORT

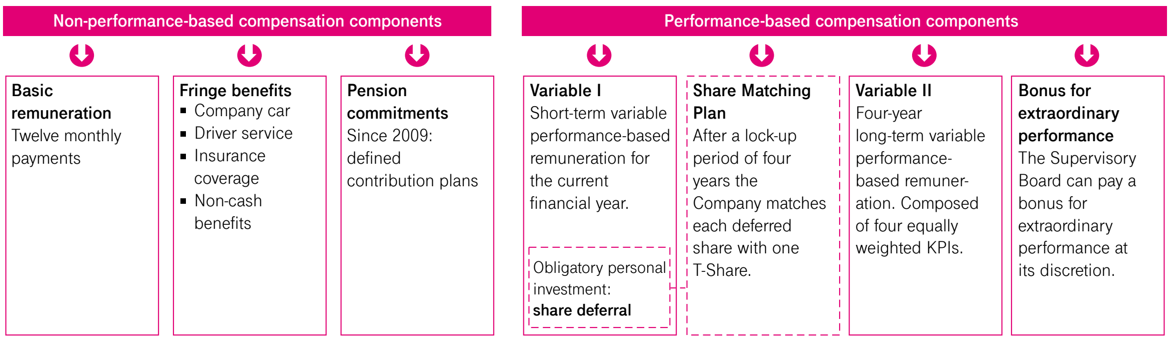
The “Compensation report” details the compensation system underlying Board of Management compensation as well as the specific remuneration received by the individual members of the Board of Management. It takes into consideration the requirements of the German Commercial Code taking account of the provisions 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. Birgit Bohle joined the Board of Management on January 1, 2019 to head up the Human Resources Board department and was appointed Labor Director effective the same date. Also effective January 1, 2019, Thorsten Langheim took up his role as head of the new Board of Management department for USA and Group Development. Deutsche Telekom AG thus has had nine Board of Management departments since the start of 2019. Dr. Christian P. Illek moved from his former position as the Board of Management member responsible for Human Resources to his new role as the Board of Management member responsible for Finance effective January 1, 2019. By resolution of the Supervisory Board of Deutsche Telekom AG of February 20, 2019, Srini Gopalan was reappointed as the Board of Management member responsible for Europe for the period from January 1, 2020 to December 31, 2024. At its meeting on September 4, 2019, the Supervisory Board extended Adel Al-Saleh’s term of office by two years to a total of five years through December 31, 2022.

COMPENSATION OF THE BOARD OF MANAGEMENT

Basis of Board of Management compensation. On February 24, 2010, the Supervisory Board resolved on a new system for the compensation of the Board of Management members, taking into account the provisions specified in the German Act on the Appropriateness of Management Board Remuneration (Gesetz zur Angemessenheit der Vorstandsvergütung – VorstAG) that has been in effect since August 5, 2009. 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.

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 contribution-based promise. 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 remuneration components. The exact definition of the contribution is based on a comparison with peer companies that are suitable for benchmarking and also offer plans with contribution-based promises. 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 percent 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 percent 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 percent 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 percent 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 fund.

Pension substitute. A "pension substitute" was agreed with Adel Al-Saleh in lieu of a pension commitment due to his U.S. citizenship. 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).

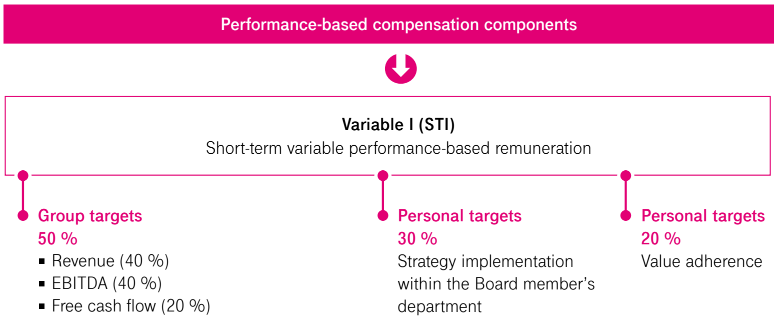
Service cost and defined benefit obligations for each member of the Board of Management with a pension commitment are shown in the following table:

€	Service cost 2019	Defined benefit obligation (DBO) Dec. 31, 2019	Service cost 2018	Defined benefit obligation (DBO) Dec. 31, 2018
Birgit Bohle (since January 1, 2019)	307,304	329,515	0	0
Srini Gopalan	295,590	964,557	300,362	610,829
Timotheus Höttges	417,067	18,595,908	1,117,049	16,269,567
Dr. Christian P. Illek	262,191	1,377,980	267,948	1,056,852
Dr. Thomas Kremer	247,664	2,076,666	241,729	1,795,913
Thorsten Langheim (since January 1, 2019)	275,986	287,194	0	0
Claudia Nemat	281,885	2,851,583	285,459	2,401,880
Dr. Dirk Wössner	289,418	619,879	296,498	296,528

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.

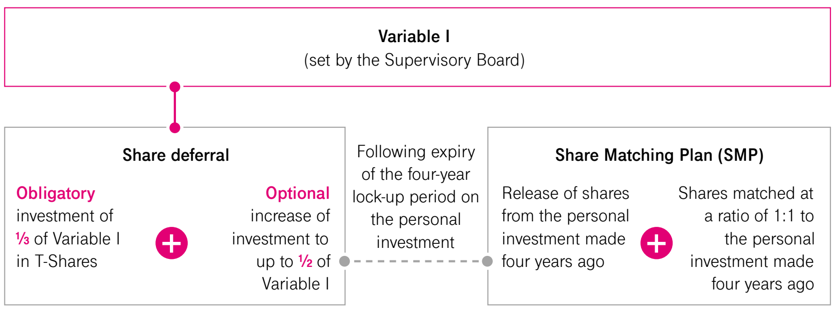
Variable I



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 percent) 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 percent) and value adherence (adherence to Guiding Principles), which is an indicator of compliance with value orientation and accounts for 20 percent. 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 percent are capped at 150 percent 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.

Share Matching Plan

Share deferral and the Share Matching Plan



In the 2019 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 extend the obligatory personal investment in 2019 to up to 50 percent 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.

DRS 17 and IFRS 2 require disclosure not only of the total expense related to share-based payment from matching shares in the 2019 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.

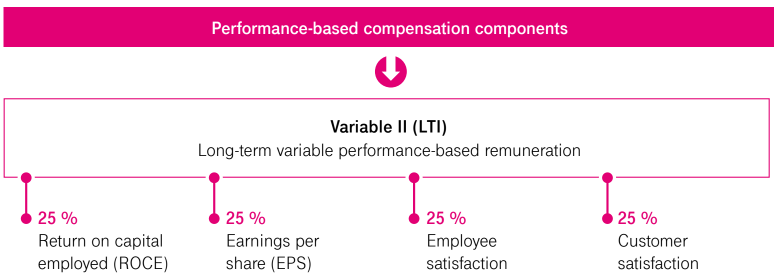
The fair value of the matching shares at grant date shown in the following table does not represent a component of remuneration for the Board of Management members in 2019. It is an imputed value of the entitlements to matching shares determined on the basis of relevant accounting policies. Here, the 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 2019 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 2019 financial year may be higher or lower than the amounts estimated here.

The total share-based payment expense for entitlements to matching shares from 2014 to 2019 to be recognized for the financial years 2018 and 2019 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 2019	Number of shares transferred in 2019 as part of the Share Matching Plan	Fair value of the entitlements to matching shares at grant date €	Cumulative total share-based payment expense in 2019 for matching shares for the years 2015 through 2019 €	Cumulative total share-based payment expense in 2018 for matching shares for the years 2014 through 2018 €
Adel Al-Saleh	26,820	23,503	0	270,987	120,780	30,456
Birgit Bohle (since January 1, 2019)	0	19,151	0	220,811	36,983	n.a.
Srini Gopalan	46,235	19,151	0	220,811	167,268	113,184
Timotheus Höttges	363,807	62,674	25,781	722,632	683,151	588,176
Dr. Christian P. Illek	76,681	23,503	0	270,987	258,459	200,952
Dr. Thomas Kremer	119,671	19,151	12,917	220,811	253,751	232,754
Thorsten Langheim (since January 1, 2019)	0	23,503	0	270,987	45,387	n.a.
Claudia Nemat	161,461	23,503	16,448	270,987	297,804	280,766
Dr. Dirk Wössner	22,400	19,151	0	220,811	100,570	24,817

By December 31, 2019, 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 2019, matching shares were again transferred to individual members of the Board of Management. A total of 55,146 shares were transferred to Board of Management members in 2019 (2018: 69,488).

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 percent are capped at 150 percent of the award amount. The assessment period is four years, with the assessment 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.

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, in line with the recommendations of the German Corporate Governance Code (GCGC) as amended on February 7, 2017, 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.

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 percent of the last fixed annual remuneration and 50 percent of the most recent Variable I on the basis of 100 percent target achievement, or 100 percent of the last fixed annual remuneration.

Board of Management compensation for the 2019 financial year. In reliance on legal requirements and other guidelines, a total of EUR 23.3 million (2018: EUR 24.6 million) is reported in the following table as total compensation for the 2019 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), 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.

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	Short-term variable remuneration	Long-term variable performance-based remuneration (Variable II)	Long-term variable performance-based remuneration (fair value of matching shares)	
Adel Al-Saleh	2019	900,000	322,776[a]	771,525	0	270,987	**2,265,288**
	2018	900,000	1,072,507	817,425	0	272,620	**3,062,552**
Birgit Bohle (since January 1, 2019)	2019	700,000	272,367[b]	699,600	0	220,811	**1,892,778**
	2018	0	0	0	0	0	**0**
Srini Gopalan	2019	700,000	20,137	723,800	0	220,811	**1,664,748**
	2018	700,000	20,000	695,750	0	222,134	**1,637,884**
Timotheus Höttges	2019	1,500,000	60,111	2,334,600	1,435,940	722,632	**6,053,283**
	2018	1,450,000	31,655	1,770,098	1,583,560	542,008	**5,377,321**
Dr. Christian P. Illek	2019	900,000	34,540	895,725	588,500	270,987	**2,689,752**
	2018	850,000	34,596	814,344	608,438	259,998	**2,567,376**
Dr. Thomas Kremer	2019	700,000	63,546	704,550	588,500	220,811	**2,277,407**
	2018	700,000	63,667	691,900	649,000	222,134	**2,326,701**
Thorsten Langheim (since January 1, 2019)	2019	900,000	17,657	839,700	0	270,987	**2,028,344**
	2018	0	0	0	0	0	**0**
Claudia Nemat	2019	900,000	78,586	845,775	722,250	270,987	**2,817,598**
	2018	900,000	78,552	822,825	796,500	272,620	**2,870,497**
Dr. Dirk Wössner	2019	700,000	23,466	696,850	0	220,811	**1,641,127**
	2018	700,000	2,423,865	691,350	0	222,134	**4,037,349**
	2019	**7,900,000**	**893,186**	**8,512,125**	**3,335,190**	**2,689,824**	**23,330,325**
	2018[c]	**6,200,000**	**3,724,842**	**6,303,692**	**3,637,498**	**2,013,648**	**21,879,680**

[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] This amount includes a one-time sign-on bonus of EUR 258,333 to compensate for all financial disadvantages resulting from the move to Deutsche Telekom.

[c] Board of Management members who left the company before or at the end of 2018 are no longer included in the prior-year figures.

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 2016 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 8.8 million (2018: EUR 8.1 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 213.4 million (December 31, 2018: EUR 198.6 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			
	2018	2019	2019 (min.)	2019 (max.)	2018	2019	2019 (min.)	2019 (max.)
Fixed remuneration	1,450,000	1,500,000	1,500,000	1,500,000	900,000	900,000	900,000	900,000
Fringe benefits	31,655	60,111	60,111	60,111	1,072,507	322,776[a]	322,776[a]	322,776[a]
Total fixed annual remuneration	**1,481,655**	**1,560,111**	**1,560,111**	**1,560,111**	**1,972,507**	**1,222,776**	**1,222,776**	**1,222,776**
One-year variable remuneration	1,342,000	1,800,000	0	2,700,000	675,000	675,000	0	1,012,500
Multi-year variable remuneration	**1,884,008**	**2,722,632**	**0**	**5,700,000**	**947,620**	**945,987**	**0**	**2,025,000**
Of which: 2018 Variable II (4-year term)	1,342,000				675,000		0	
Of which: 2019 Variable II (4-year term)		2,000,000	0	3,000,000		675,000	0	1,012,500
Of which: 2018 Share Matching Plan (4-year term)	542,008				272,620			
Of which: 2019 Share Matching Plan (4-year term)		722,632	0	2,700,000		270,987	0	1,012,500
Total	**4,707,663**	**6,082,743**	**1,560,111**	**9,960,111**	**3,595,127**	**2,843,763**	**1,222,776**	**4,260,276**
Service cost	1,117,049	417,067	417,067	417,067	0	0	0	0
TOTAL COMPENSATION	**5,824,712**	**6,499,810**	**1,977,178**	**10,377,178**	**3,595,127**	**2,843,763**	**1,222,776**	**4,260,276**

[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.

€	Birgit Bohle				Srini Gopalan			
	Function: Human Resources since Jan. 1, 2019				Function: Europe since Jan. 1, 2017			
	2018	2019	2019 (min.)	2019 (max.)	2018	2019	2019 (min.)	2019 (max.)
Fixed remuneration	0	700,000	700,000	700,000	700,000	700,000	700,000	700,000
Fringe benefits	0	272,367[a]	272,367[a]	272,367[a]	20,000	20,137	20,137	20,137
Total fixed annual remuneration	**0**	**972,367**	**972,367**	**972,367**	**720,000**	**720,137**	**720,137**	**720,137**
One-year variable remuneration	0	550,000	0	825,000	550,000	550,000	0	825,000
Multi-year variable remuneration	**0**	**770,811**	**0**	**1,650,000**	**772,134**	**770,811**	**0**	**1,650,000**
Of which: 2018 Variable II (4-year term)	0				550,000			
Of which: 2019 Variable II (4-year term)		550,000	0	825,000		550,000	0	825,000
Of which: 2018 Share Matching Plan (4-year term)	0				222,134			
Of which: 2019 Share Matching Plan (4-year term)		220,811	0	825,000		220,811	0	825,000
Total	**0**	**2,293,178**	**972,367**	**3,447,367**	**2,042,134**	**2,040,948**	**720,137**	**3,195,137**
Service cost		307,304	307,304	307,304	300,362	295,590	295,590	295,590
TOTAL COMPENSATION	**0**	**2,600,482**	**1,279,671**	**3,754,671**	**2,342,496**	**2,336,538**	**1,015,727**	**3,490,727**

[a] This amount includes a one-time sign-on bonus of EUR 258,333 to compensate for all financial disadvantages resulting from the move to Deutsche Telekom.

€	Dr. Christian P. Illek				Dr. Thomas Kremer			
	Function: (Human Resources) Finance (CFO) (until Dec. 31, 2018) since Jan. 1, 2019				Function: Data Privacy, Legal Affairs and Compliance since June 1, 2012			
	2018	2019	2019 (min.)	2019 (max.)	2018	2019	2019 (min.)	2019 (max.)
Fixed remuneration	850,000	900,000	900,000	900,000	700,000	700,000	700,000	700,000
Fringe benefits	34,596	34,540	34,540	34,540	63,667	63,546	63,546	63,546
Total fixed annual remuneration	**884,596**	**934,540**	**934,540**	**934,540**	**763,667**	**763,546**	**763,546**	**763,546**
One-year variable remuneration	643,750	675,000	0	1,012,500	550,000	550,000	0	825,000
Multi-year variable remuneration	**927,186**	**945,987**	**0**	**2,025,000**	**772,134**	**770,811**	**0**	**1,650,000**
Of which: 2018 Variable II (4-year term)	667,188				550,000			
Of which: 2019 Variable II (4-year term)		675,000	0	1,012,500		550,000	0	825,000
Of which: 2018 Share Matching Plan (4-year term)	259,998				222,134			
Of which: 2019 Share Matching Plan (4-year term)		270,987	0	1,012,500		220,811	0	825,000
Total	**2,455,532**	**2,555,527**	**934,540**	**3,972,040**	**2,085,801**	**2,084,357**	**763,546**	**3,238,546**
Service cost	267,948	262,191	262,191	262,191	241,729	247,664	247,664	247,664
TOTAL COMPENSATION	**2,723,480**	**2,817,718**	**1,196,731**	**4,234,231**	**2,327,530**	**2,332,021**	**1,011,210**	**3,486,210**

€	Thorsten Langheim				Claudia Nemat			
	Function: USA and Group Development since Jan. 1, 2019				Function: Technology and Innovation since Oct. 1, 2011			
	2018	2019	2019 (min.)	2019 (max.)	2018	2019	2019 (min.)	2019 (max.)
Fixed remuneration	0	900,000	900,000	900,000	900,000	900,000	900,000	900,000
Fringe benefits	0	17,657	17,657	17,657	78,552	78,586	78,586	78,586
Total fixed annual remuneration	**0**	**917,657**	**917,657**	**917,657**	**978,552**	**978,586**	**978,586**	**978,586**
One-year variable remuneration	0	675,000	0	1,012,500	675,000	675,000	0	1,012,500
Multi-year variable remuneration	**0**	**945,987**	**0**	**2,025,000**	**947,620**	**945,987**	**0**	**2,025,000**
Of which: 2018 Variable II (4-year term)	0				675,000			
Of which: 2019 Variable II (4-year term)		675,000	0	1,012,500		675,000	0	1,012,500
Of which: 2018 Share Matching Plan (4-year term)	0				272,620			
Of which: 2019 Share Matching Plan (4-year term)		270,987	0	1,012,500		270,987	0	1,012,500
Total	**0**	**2,538,644**	**917,657**	**3,955,157**	**2,601,172**	**2,599,573**	**978,586**	**4,016,086**
Service cost		275,986	275,986	275,986	285,459	281,885	281,885	281,885
TOTAL COMPENSATION	**0**	**2,814,630**	**1,193,643**	**4,231,143**	**2,886,631**	**2,881,458**	**1,260,471**	**4,297,971**

€	Dr. Dirk Wössner			
	Function: Germany since Jan. 1, 2018			
	2018	2019	2019 (min.)	2019 (max.)
Fixed remuneration	700,000	700,000	700,000	700,000
Fringe benefits	2,423,865	23,466	23,466	23,466
Total fixed annual remuneration	**3,123,865**	**723,466**	**723,466**	**723,466**
One-year variable remuneration	550,000	550,000	0	825,000
Multi-year variable remuneration	**772,134**	**770,811**	**0**	**1,650,000**
Of which: 2018 Variable II (4-year term)	550,000			
Of which: 2019 Variable II (4-year term)		550,000	0	825,000
Of which: 2018 Share Matching Plan (4-year term)	222,134			
Of which: 2019 Share Matching Plan (4-year term)		220,811	0	825,000
Total	**4,445,999**	**2,044,277**	**723,466**	**3,198,466**
Service cost	296,498	289,418	289,418	289,418
TOTAL COMPENSATION	**4,742,497**	**2,333,695**	**1,012,884**	**3,487,884**

Benefits allocated for the reporting year

Unlike the table of benefits granted shown on the previous pages, the table below contains not the target values for short- and long-term variable remuneration components, but rather the actual benefits allocated for 2019. 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 table of benefits granted on the previous pages shows the fair values of remuneration at the grant date.

Compensation of the Board of Management

€

	Timotheus Höttges		Adel Al-Saleh		Birgit Bohle	
	Function: Chairman of the Board of Management (CEO) since Jan. 1, 2014		Function: T-Systems since Jan. 1, 2018		Function: Human Resources since Jan. 1, 2019	
	2018	2019	2018	2019	2018	2019
Fixed remuneration	1,450,000	1,500,000	900,000	900,000	0	700,000
Fringe benefits	31,655	60,111	1,072,507	272,776[a]	0	272,367[b]
Total fixed annual remuneration	**1,481,655**	**1,560,111**	**1,972,507**	**1,172,776**	**0**	**972,367**
One-year variable remuneration	1,770,098	2,334,600	817,425	771,525	0	699,600
Multi-year variable remuneration	**1,971,241**	**1,822,707**	**0**	**0**	**0**	**0**
Of which: Variable II (4-year term)[c]	1,583,560	1,435,940	0	0	0	0
Of which: Share Matching Plan (4-year term)[d]	387,681	386,767	0	0	0	0
Other	0	0	0	0	0	0
Total	**5,222,994**	**5,717,418**	**2,789,932**	**1,944,301**	**0**	**1,671,967**
Service cost	1,117,049	417,067	0	0	0	307,304
TOTAL COMPENSATION	**6,340,043**	**6,134,485**	**2,789,932**	**1,944,301**	**0**	**1,979,271**

[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 amount includes a one-time sign-on bonus of EUR 258,333 to compensate for all financial disadvantages resulting from the move to Deutsche Telekom.

[c] Variable II as shown in the column for 2019 relates to the payment of the 2016 tranche; the figure in the column for 2018 relates to the payment of the 2015 tranche (please also refer to the previous section entitled “Variable II”).

[d] 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 2014 or 2015.

€

	Srini Gopalan		Dr. Christian P. Illek		Dr. Thomas Kremer	
	Function: Europe since Jan. 1, 2017		Function: (Human Resources) Finance (CFO) (until Dec. 31, 2018) since Jan. 1, 2019		Function: Data Privacy, Legal Affairs and Compliance since June 1, 2012	
	2018	2019	2018	2019	2018	2019
Fixed remuneration	700,000	700,000	850,000	900,000	700,000	700,000
Fringe benefits	20,000	20,137	34,596	34,540	63,667	63,546
Total fixed annual remuneration	**720,000**	**720,137**	**884,596**	**934,540**	**763,667**	**763,546**
One-year variable remuneration	695,750	723,800	814,344	895,725	691,900	704,550
Multi-year variable remuneration	**0**	**0**	**608,438**	**588,500**	**873,068**	**784,761**
Of which: Variable II (4-year term)[a]	0	0	608,438	588,500	649,000	588,500
Of which: Share Matching Plan (4-year term)[b]	0	0	0	0	224,068	196,261
Other	0	0	0	0	0	0
Total	**1,415,750**	**1,443,937**	**2,307,378**	**2,418,765**	**2,328,635**	**2,252,857**
Service cost	300,362	295,590	267,948	262,191	241,729	247,664
TOTAL COMPENSATION	**1,716,112**	**1,739,527**	**2,575,326**	**2,680,956**	**2,570,364**	**2,500,521**

[a] Variable II as shown in the column for 2019 relates to the payment of the 2016 tranche; the figure in the column for 2018 relates to the payment of the 2015 tranche (please also refer to the previous section entitled “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 2014 or 2015.

€	Thorsten Langheim		Claudia Nemat		Dr. Dirk Wössner	
	Function: USA and Group Development since Jan. 1, 2019		Function: Technology and Innovation since Oct. 1, 2011		Function: Germany since Jan. 1, 2018	
	2018	2019	2018	2019	2018	2019
Fixed remuneration	0	900,000	900,000	900,000	700,000	700,000
Fringe benefits	0	17,657	78,552	78,586	2,423,865	23,466
Total fixed annual remuneration	**0**	**917,657**	**978,552**	**978,586**	**3,123,865**	**723,466**
One-year variable remuneration	0	839,700	822,825	845,775	691,350	696,850
Multi-year variable remuneration	**0**	**0**	**1,055,461**	**973,641**	**0**	**0**
Of which: Variable II (4-year term)[a]	0	0	796,500	722,250	0	0
Of which: Share Matching Plan (4-year term)[b]	0	0	258,961	251,391	0	0
Other	0	0	0	0	0	0
Total	**0**	**1,757,357**	**2,856,838**	**2,798,002**	**3,815,215**	**1,420,316**
Service cost	0	275,986	285,459	281,885	296,498	289,418
TOTAL COMPENSATION	**0**	**2,033,343**	**3,142,297**	**3,079,887**	**4,111,713**	**1,709,734**

[a] Variable II as shown in the column for 2019 relates to the payment of the 2016 tranche; the figure in the column for 2018 relates to the payment of the 2015 tranche (please also refer to the previous section entitled “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 2014 or 2015.

Planned changes in 2020

Effective January 1, 2020, the Supervisory Board of Deutsche Telekom AG introduced share ownership guidelines. These guidelines require all members of the Board of Management to increase their holdings of Deutsche Telekom shares to the equivalent value of one year’s fixed remuneration within a maximum period of three years. The shares must be held without interruption until membership on the Board of Management ends. The Supervisory Board will track the development of the T-Share price to determine whether an additional investment obligation arises for the Board of Management members. Should this be the case, the Board of Management members will be required to purchase the necessary number of additional shares to bring their holdings back up to the equivalent of one year’s fixed remuneration.

The Supervisory Board intends to incorporate a clawback provision into future Board of Management service contracts.

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 2019 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 2019 amounted to EUR 2,888,500.00 (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 2019 is as follows:

Member of the Supervisory Board (€)	Fixed remuneration	Meeting attendance fee	Total
Bednarski, Josef	177,500.00	23,000.00	200,500.00
Dr. Bösinger, Rolf	152,500.00	18,000.00	170,500.00
Dr. Bräunig, Günther	120,000.00	9,000.00	129,000.00
Chatzidis, Odysseus D.	95,000.00	8,000.00	103,000.00
Greve, Constantin	95,000.00	7,000.00	102,000.00
Hinrichs, Lars	95,000.00	6,000.00	101,000.00
Dr. Jung, Helga	95,000.00	7,000.00	102,000.00
Prof. Dr. Kaschke, Michael	110,000.00	7,000.00	117,000.00
Koch, Nicole[a]	95,000.00	8,000.00	103,000.00
Kollmann, Dagmar P.	187,500.00	14,000.00	201,500.00
Kreusel, Petra Steffi[b]	110,000.00	10,000.00	120,000.00
Krüger, Harald	70,000.00	5,000.00	75,000.00
Prof. Dr. Lehner, Ulrich (Chairman)	320,000.00	21,000.00	341,000.00
Sauerland, Frank[c]	95,000.00	9,000.00	104,000.00
Schröder, Lothar[d] (Deputy Chairman)	252,500.00	23,000.00	275,500.00
Seelemann-Wandtke, Nicole	95,000.00	8,000.00	103,000.00
Spoo, Sibylle	135,000.00	11,000.00	146,000.00
Streibich, Karl-Heinz	147,500.00	14,000.00	161,500.00
Suckale, Margret	120,000.00	10,000.00	130,000.00
Topel, Karin	95,000.00	8,000.00	103,000.00
	2,662,500.00	**226,000.00**	**2,888,500.00**

[a] 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 2019 financial year (for her mandate as member of the supervisory board of Deutsche Telekom Privatkunden-Vertrieb GmbH).

[b] 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 15,000.00 (including meeting attendance fees) in the 2019 financial year (for her mandate as member of the supervisory board of T-Systems International GmbH).

[c] 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 20,500.00 (including meeting attendance fees) in the 2019 financial year (for his mandate as member of the supervisory board of Telekom Deutschland GmbH).

[d] 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 29,000.00 (including meeting attendance fees) in the 2019 financial year (EUR 17,000.00 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 278,574 shares (2018: 364,036) and sold 68,930 shares (2018: 0) under the Share Matching Plan in the course of 2019. 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 percent of the shares issued by the Company.

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CONSOLIDATED STATEMENT OF FINANCIAL POSITION

millions of €

	Note	Dec. 31, 2019	Dec. 31, 2018
ASSETS			
CURRENT ASSETS		**24,689**	**21,870**
Cash and cash equivalents	1	5,393	3,679
Trade receivables	2	10,846	9,988
Contract assets	3	1,876	1,765
Current recoverable income taxes	31	481	492
Other financial assets	11	3,254	2,847
Inventories	4	1,568	1,790
Other assets	12	1,175	1,164
Non-current assets and disposal groups held for sale	5	97	145
NON-CURRENT ASSETS		**145,983**	**123,505**
Intangible assets	6	68,202	64,950
Property, plant and equipment	7	49,548	50,631
Right-of-use assets	8	17,998	n.a.
Capitalized contract costs	9	2,075	1,744
Investments accounted for using the equity method	10	489	576
Other financial assets	11	3,996	1,585
Deferred tax assets	31	2,704	2,949
Other assets	12	970	1,070
TOTAL ASSETS		**170,672**	**145,375**

millions of €

	Note	Dec. 31, 2019	Dec. 31, 2018
LIABILITIES AND SHAREHOLDERS' EQUITY			
CURRENT LIABILITIES		**32,913**	**29,144**
Financial liabilities	13	11,463	10,527
Lease liabilities	13	3,987	n.a.
Trade and other payables	14	9,431	10,735
Income tax liabilities	31	463	328
Other provisions	16	3,082	3,144
Other liabilities	17	2,850	2,654
Contract liabilities	18	1,608	1,720
Liabilities directly associated with non-current assets and disposal groups held for sale	5	29	36
NON-CURRENT LIABILITIES		**91,528**	**72,794**
Financial liabilities	13	54,886	51,748
Lease liabilities	13	15,848	n.a.
Provisions for pensions and other employee benefits	15	5,831	5,502
Other provisions	16	3,581	3,291
Deferred tax liabilities	31	8,954	8,240
Other liabilities	17	1,972	3,427
Contract liabilities	18	456	585
LIABILITIES		**124,441**	**101,938**
SHAREHOLDERS' EQUITY	19	**46,231**	**43,437**
Issued capital		12,189	12,189
Treasury shares		(47)	(49)
		12,142	**12,141**
Capital reserves		55,029	54,646
Retained earnings including carryforwards		(38,709)	(37,392)
Total other comprehensive income		(622)	(653)
Net profit (loss)		3,867	2,166
ISSUED CAPITAL AND RESERVES ATTRIBUTABLE TO OWNERS OF THE PARENT		**31,707**	**30,907**
Non-controlling interests		14,524	12,530
TOTAL LIABILITIES AND SHAREHOLDERS' EQUITY		**170,672**	**145,375**

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. 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.

CONSOLIDATED INCOME STATEMENT

millions of €

		Note	2019	2018	2017
NET REVENUE		20	**80,531**	**75,656**	**74,947**
Of which: interest income calculated using the effective interest method			345	305	n.a.
Other operating income		21	1,121	1,491	3,819
Changes in inventories			29	(14)	21
Own capitalized costs		23	2,418	2,433	2,292
Goods and services purchased		24	(36,956)	(38,160)	(38,161)
Personnel costs		25	(16,723)	(16,436)	(15,504)
Other operating expenses		26	(3,301)	(3,134)	(3,444)
Impairment losses on financial assets			(452)	(394)	n.a.
Gains (losses) from the write-off of financial assets measured at amortized cost			(42)	(120)	n.a.
Other			(2,807)	(2,620)	(3,444)
EBITDA			**27,120**	**21,836**	**23,969**
Depreciation, amortization and impairment losses		27	(17,663)	(13,836)	(14,586)
PROFIT FROM OPERATIONS (EBIT)			**9,457**	**8,001**	**9,383**
Finance costs		28	(2,364)	(1,817)	(2,197)
Interest income			348	277	320
Interest expense			(2,712)	(2,094)	(2,517)
Share of profit (loss) of associates and joint ventures accounted for using the equity method		29	87	(529)	76
Other financial income (expense)		30	81	(502)	(2,269)
PROFIT (LOSS) FROM FINANCIAL ACTIVITIES			**(2,197)**	**(2,848)**	**(4,390)**
PROFIT BEFORE INCOME TAXES			**7,260**	**5,153**	**4,994**
Income taxes		31	(1,993)	(1,824)	558
PROFIT (LOSS)			**5,268**	**3,329**	**5,551**
PROFIT (LOSS) ATTRIBUTABLE TO					
Owners of the parent (net profit (loss))			3,867	2,166	3,461
Non-controlling interests		32	1,401	1,163	2,090
EARNINGS PER SHARE		33			
Basic	€		0.82	0.46	0.74
Diluted	€		0.82	0.46	0.74

The IFRS 16 “Leases” accounting standard has been applied since January 1, 2019. Prior-year comparatives were not adjusted. 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.

The accounting standards IFRS 15 “Revenue from Contracts with Customers” and IFRS 9 “Financial Instruments” took effect as of January 1, 2018. The 2017 comparatives have not been adjusted. 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 2018 Annual Report.

CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME

millions of €

	2019	2018	2017
PROFIT (LOSS)	**5,268**	**3,329**	**5,551**
Items not subsequently reclassified to profit or loss (not recycled)			
Gains (losses) from the remeasurement of equity instruments[a]	99	(619)	0
Gains (losses) from the remeasurement of defined benefit plans	(603)	127	116
Revaluation due to business combinations	0	0	0
Share of profit (loss) of investments accounted for using the equity method	0	0	0
Income taxes relating to components of other comprehensive income	134	36	(19)
	(369)	**(456)**	**97**
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	(8)	(1)	0
Change in other comprehensive income (not recognized in income statement)	463	1,033	(2,196)
Gains (losses) from the remeasurement of available-for-sale financial assets[a,b]			
Recognition of other comprehensive income in income statement	n.a.	n.a.	7
Change in other comprehensive income (not recognized in income statement)	n.a.	n.a.	27
Gains (losses) from the remeasurement of debt instruments[a]			
Recognition of other comprehensive income in income statement	(47)	(75)	n.a.
Change in other comprehensive income (not recognized in income statement)	34	84	n.a.
Gains (losses) from hedging instruments[a,c]			
Recognition of other comprehensive income in income statement	n.a.	n.a.	450
Change in other comprehensive income (not recognized in income statement)	n.a.	n.a.	(270)
Gains (losses) from hedging instruments (designated risk components)[a]			
Recognition of other comprehensive income in income statement	(148)	(32)	n.a.
Change in other comprehensive income (not recognized in income statement)	(483)	(382)	n.a.
Gains (losses) from hedging instruments (hedging costs)[a,d]			
Recognition of other comprehensive income in income statement	2	3	n.a.
Change in other comprehensive income (not recognized in income statement)	(9)	56	n.a.
Share of profit (loss) of investments accounted for using the equity method			
Recognition of other comprehensive income in income statement	(7)	0	0
Change in other comprehensive income (not recognized in income statement)	11	7	0
Income taxes relating to components of other comprehensive income	155	86	(58)
	(38)	**779**	**(2,040)**
OTHER COMPREHENSIVE INCOME	**(407)**	**323**	**(1,943)**
TOTAL COMPREHENSIVE INCOME	**4,861**	**3,652**	**3,608**
TOTAL COMPREHENSIVE INCOME ATTRIBUTABLE TO			
Owners of the parent	3,514	2,181	2,340
Non-controlling interests	1,347	1,471	1,268

[a] For the new items in relation to IFRS 9 to be recognized in accordance with IAS 1, Deutsche Telekom utilizes the option of not showing comparative figures for the prior-year period.

[b] The measurement category "available-for-sale financial assets" as per IAS 39 was to be applied for the last time as of December 31, 2017.

[c] Gains and losses from hedging costs were recognized for the last time as of December 31, 2017 under IAS 39 as part of gains and losses from hedging instruments. Under IFRS 9, gains and losses from hedging costs are recognized separately in equity.

[d] In the 2018 and 2019 financial years, 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	Issued capital	Treasury shares	Capital reserves	Retained earnings including carryforwards	Net profit (loss)
BALANCE AT JANUARY 1, 2017	**4,676,902**	**11,973**	**(50)**	**53,356**	**(38,727)**	**2,675**
Changes in the composition of the Group						
Transactions with owners				355		
Unappropriated profit (loss) carried forward					2,675	(2,675)
Dividends					(2,794)	
Capital increase at Deutsche Telekom AG	84,557	216		1,175		
Capital increase from share-based payment				124		
Share buy-back/shares held in a trust deposit			1		3	
Profit (loss)						3,461
Other comprehensive income					93	
TOTAL COMPREHENSIVE INCOME						
Transfer to retained earnings						
BALANCE AT DECEMBER 31, 2017	**4,761,459**	**12,189**	**(49)**	**55,010**	**(38,750)**	**3,461**
BALANCE AT JANUARY 1, 2018	**4,761,459**	**12,189**	**(49)**	**55,010**	**(38,750)**	**3,461**
Transfer resulting from change in accounting standards					1,414	
Changes in the composition of the Group						
Transactions with owners				(614)	1	
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	
TOTAL COMPREHENSIVE INCOME						
Transfer to retained earnings					(602)	
BALANCE AT DECEMBER 31, 2018	**4,761,459**	**12,189**	**(49)**	**54,646**	**(37,392)**	**2,166**
BALANCE AT JANUARY 1, 2019	**4,761,459**	**12,189**	**(49)**	**54,646**	**(37,392)**	**2,166**
Transfer resulting from change in accounting standards					221	
Changes in the composition of the Group						
Transactions with owners				77		
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)	
TOTAL COMPREHENSIVE INCOME						
Transfer to retained earnings					74	
BALANCE AT DECEMBER 31, 2019	**4,761,459**	**12,189**	**(47)**	**55,029**	**(38,709)**	**3,867**

Issued capital and reserves attributable to owners of the parent												
Total other comprehensive income										Total	Non-controlling interests	Total shareholders' equity
Translation of foreign operations	Revaluation surplus	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			
(371)	**(60)**	**69**	**n.a.**	**n.a.**	**609**	**n.a.**	**n.a.**	**27**	**(196)**	**29,305**	**9,540**	**38,845**
										0	6	6
9										364	977	1,341
										0	0	0
										(2,794)	(122)	(2,916)
										1,391	0	1,391
										124	68	192
										4	0	4
										3,461	2,090	5,551
(1,367)		32			180			(1)	(58)	(1,121)	(823)	(1,944)
										2,340	**1,268**	**3,608**
(1,729)	**(60)**	**101**	**n.a.**	**n.a.**	**789**	**n.a.**	**n.a.**	**26**	**(254)**	**30,734**	**11,737**	**42,470**
(1,729)	**(60)**	**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
(13)	0		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
621			(620)	6		(271)	58	7	50	15	308	323
										2,181	**1,471**	**3,652**
	32		611	(6)				(36)	1	0	0	0
(1,120)	**(28)**	**n.a.**	**84**	**2**	**n.a.**	**519**	**58**	**(4)**	**(165)**	**30,907**	**12,530**	**43,437**
(1,120)	**(28)**	**n.a.**	**84**	**2**	**n.a.**	**519**	**58**	**(4)**	**(165)**	**30,907**	**12,530**	**43,437**
										221	125	346
										0	239	239
(7)						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
319			99	(9)		(393)	(7)	4	97	(353)	(54)	(407)
										3,514	**1,347**	**4,861**
	7		(82)							0	0	0
(808)	**(21)**	**n.a.**	**101**	**(6)**	**n.a.**	**130**	**51**	**0**	**(69)**	**31,707**	**14,524**	**46,231**

CONSOLIDATED STATEMENT OF CASH FLOWS

millions of €

	Note	2019	2018	2017
PROFIT BEFORE INCOME TAXES	35	**7,260**	**5,153**	**4,994**
Depreciation, amortization and impairment losses		17,663	13,836	14,586
(Profit) loss from financial activities		2,197	2,848	4,390
(Profit) loss on the disposal of fully consolidated subsidiaries		9	0	(537)
(Income) loss from the sale of stakes accounted for using the equity method		(143)	0	(226)
Other non-cash transactions		569	430	(1,447)
(Gains) losses from the disposal of intangible assets and property, plant and equipment		112	(126)	(103)
Change in assets carried as operating working capital		(814)	(998)	(1,650)
Change in other operating assets		(248)	(337)	(224)
Change in provisions		203	(100)	265
Change in liabilities carried as operating working capital		(440)	(515)	814
Change in other operating liabilities		(325)	(11)	(763)
Income taxes received (paid)		(758)	(697)	(634)
Dividends received		15	181	241
Net payments from entering into, canceling or changing the terms and conditions of interest rate derivatives		(3)	0	0
CASH GENERATED FROM OPERATIONS		**25,297**	**19,663**	**19,706**
Interest paid		(3,924)	(3,307)	(3,783)
Interest received		1,701	1,592	1,274
NET CASH FROM OPERATING ACTIVITIES		**23,074**	**17,948**	**17,196**
Cash outflows for investments in				
Intangible assets		(4,375)	(3,353)	(10,345)
Property, plant and equipment		(9,982)	(9,139)	(9,149)
Non-current financial assets		(417)	(639)	(361)
Payments for publicly funded investments in the broadband build-out[a]		(401)	n.a.	n.a.
Proceeds from public funds for investments in the broadband build-out[a]		341	n.a.	n.a.
Payments to acquire control of subsidiaries and for associates		(261)	(2,080)	(15)
Proceeds from disposal of				
Intangible assets		0	2	21
Property, plant and equipment		176	523	379
Non-current financial assets		251	596	612
Proceeds from the loss of control of subsidiaries and associates		62	(67)	528
Net change in short-term investments and marketable securities and receivables		376	(144)	1,514
Other		(1)	5	2
NET CASH USED IN INVESTING ACTIVITIES		**(14,230)**	**(14,297)**	**(16,814)**
Proceeds from issue of current financial liabilities		10,778	51,597	13,516
Repayment of current financial liabilities		(16,533)	(57,253)	(26,537)
Proceeds from issue of non-current financial liabilities		6,278	8,375	11,215
Repayment of non-current financial liabilities		(21)	(23)	(10)
Dividend payments (including to other shareholders of subsidiaries)		(3,561)	(3,254)	(1,559)
Principal portion of repayment of lease liabilities		(3,835)	(1,174)	(715)
Cash inflows from transactions with non-controlling entities		13	29	18
Cash outflows from transactions with non-controlling entities		(261)	(1,557)	(522)
Other		0	0	0
NET CASH USED IN FINANCING ACTIVITIES		**(7,141)**	**(3,259)**	**(4,594)**
Effect of exchange rate changes on cash and cash equivalents		11	(17)	(226)
Changes in cash and cash equivalents associated with non-current assets and disposal groups held for sale		0	(8)	3
NET INCREASE (DECREASE) IN CASH AND CASH EQUIVALENTS		**1,713**	**367**	**(4,435)**
CASH AND CASH EQUIVALENTS, AT THE BEGINNING OF THE YEAR		**3,679**	**3,312**	**7,747**
CASH AND CASH EQUIVALENTS, AT THE END OF THE YEAR		**5,393**	**3,679**	**3,312**

[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. For further information on the change in estimates for publicly funded investments in the broadband build-out, please refer to the section "Changes in accounting policies, changes in estimates" in the notes to the consolidated financial statements.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

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 into the commercial register of the Bonn District Court (Amtsgericht – HRB 6794) 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 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, which have an unqualified audit opinion from PricewaterhouseCoopers GmbH Wirtschaftsprüfungsgesellschaft, Frankfurt/Main, are published in the Federal Gazette (Bundesanzeiger). The Annual Report is available upon request from Deutsche Telekom AG, Bonn, Investor Relations, and on Deutsche Telekom’s website.

Publications

The consolidated financial statements of Deutsche Telekom for the 2019 financial year were released for publication by the Board of Management on February 10, 2020.

BASIS OF PREPARATION

The consolidated financial statements of Deutsche Telekom have been 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

In the 2019 financial year, Deutsche Telekom applied the following IASB pronouncements and/or amendments to such pronouncements for the first time:

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
IFRS 16	Leases	January 1, 2019	Under IFRS 16, lessees are required to recognize assets and liabilities for all leases and the rights and obligations associated with these leases in the statement of financial position. Lessees are therefore now no longer required to make the distinction between finance and operating leases that was previously required in accordance with IAS 17. For all leases, the lessee recognizes a lease liability in the statement of financial position for the obligation to make future lease payments. At the same time, the lessee recognizes a right-of-use asset representing its right to use the underlying leased asset which is equivalent to the present value of the future lease payments plus initial direct costs, advance payments, and restoration costs, minus incentive payments received. Similar to the guidance on finance leases in the previously applicable provisions of IAS 17, the lease liability will subsequently be adjusted over the lease term to reflect interest on the liability and principal repayments, while the right-of-use asset will be depreciated. Both factors – in contrast to IAS 17 – lead to higher expenses at the beginning of a lease. For the lessor, on the other hand, the provisions of the new standard are similar to the existing guidance in IAS 17. IFRS 16 also includes new provisions on the definition of a lease and its presentation, on disclosures in the notes, and on sale and leaseback transactions.	The standard has a material effect on the presentation of Deutsche Telekom's results of operations and financial position. The effects are detailed in the explanations following this table.
Amendments to IAS 19	Plan Amendment, Curtailment or Settlement	January 1, 2019	The amendments to IAS 19 change the guidance on the amendment, curtailment, or settlement of a defined benefit pension plan. They clarify that an entity is required to determine current service cost and the net interest for the remainder of the reporting period after a plan amendment, curtailment, or settlement using updated actuarial assumptions and the net liability (or net asset) at the time of the amendment. Any changes in a surplus must be recognized as profit or loss as part of past service cost, or a gain or loss on settlement, even if this surplus had not been previously recognized due to the effect of the asset ceiling. The effects of changes in the asset ceiling are recognized in other comprehensive income.	No material impact.
Amendments to IAS 28	Long-term Interests in Associates and Joint Ventures	January 1, 2019	The amendments clarify that an entity applies IFRS 9 including its impairment requirements to long-term interests in an associate or joint venture that form part of the net investment in the associate or joint venture but are not accounted for using the equity method.	No material impact.
Amendments to IFRS 9	Prepayment Features with Negative Compensation	January 1, 2019	The amendment sets out that, if certain conditions are met, financial assets can be measured at amortized cost or fair value through other comprehensive income (FVOCI) if, in the case of an early termination, compensation is required to be paid to the party that triggers the early termination of the contract.	No material impact.
IFRIC 23	Uncertainty over Income Tax Treatments	January 1, 2019	IFRIC 23 brings clarity to IAS 12 in relation to the recognition and measurement of current income taxes, deferred tax assets, and deferred tax liabilities if there is uncertainty regarding the treatment of income taxes.	No material impact.
Annual Improvements Project	Annual Improvements to IFRSs 2015-2017 Cycle	January 1, 2019	Clarifications in individual IFRS standards.	No material impact.

In January 2016, the IASB issued **IFRS 16 "Leases."** This standard is mandatory for reporting periods beginning on or after January 1, 2019. IFRS 16 has a material effect on Deutsche Telekom's consolidated financial statements, particularly on total assets, the results of operations, cash generated from operations, net cash from/used for financing activities, and the presentation of the financial position.

The new regulations affect Deutsche Telekom as a lessee especially in relation to leases of cell sites (land, space on cell towers, or rooftop surface areas), network infrastructure, and buildings used for administrative or technical purposes.

Deutsche Telekom has not applied the new lease standard retrospectively to each prior reporting period presented, but elected to apply the practical expedients for lessees, also known as the modified retrospective method. Upon transitioning to IFRS 16, the lease liability is measured and recognized at the present value of the remaining lease payments from existing operating leases, discounted using the relevant incremental borrowing rate. The right-of-use assets were measured and recognized as of January 1, 2019 at an amount equal to the lease liability, adjusted by the amount of any prepaid or accrued lease payments. Due to the significant amount of liabilities from straight-line leases in accordance with IAS 17, which in accordance with IFRS 16 must be deducted from the right-of-use assets, the right-of-use assets as of January 1, 2019 under IFRS 16 were measured and recognized at a significantly lower amount than the corresponding lease liability. This liability primarily relates to leases for T-Mobile US' cell sites. As of the transition date of January 1, 2019, in a first step, the lease terms underlying the liabilities were adjusted to the lease terms determined in accordance with IFRS 16. This adjustment increased shareholders' equity. The remaining accrued lease liability was deducted from the right-of-use asset as described above. For leases that were previously classified as finance leases, their carrying amounts as of December 31, 2018 were carried over and recognized as right-of-use assets and lease liabilities as of January 1, 2019.

Significant policy elections and practical expedients were exercised as follows:

- Right-of-use assets and lease liabilities are presented separately in the statement of financial position.
- The recognition, measurement, and disclosure requirements of IFRS 16 also apply to short-term leases and leases of low-value assets.
- Non-lease components are generally not separated from lease components; instead, each lease component and any associated non-lease components is accounted for as a single lease component. 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.

In addition, on the date of first-time adoption of IFRS 16, use was made of the main policy elections and practical expedients as follows:

- Provisions for onerous contracts recognized in connection with leases were adjusted against the right-of-use asset as of January 1, 2019.
- In determining the lease term, hindsight may have been used by individual business units where economic considerations and penalties indicate that it is reasonably certain that options to extend or terminate the lease will be exercised.
- Existing contracts will not be grandfathered. On January 1, 2019, IFRS 16 was therefore applied to all existing leases falling within its scope. This applies to contracts in which Deutsche Telekom is a lessee and to contracts in which the Group is a lessor.

Overall, the new definition of a lease does not have a material impact for Deutsche Telekom as a lessor. However, the number of identified leases changes. The new definition does not affect the contracts for servers or similar hardware provided to customers as part of data and network solutions or contracts for terminal equipment provided to customers. These will continue to be defined as leases. However, the number of leases for contracts involving modems/routers for the latest generation of devices provided to consumers as part of fixed-network mass-market contracts – where modem and router functions are installed in one device – is decreasing. In relation to services provided in data centers, the leasing of space, for example, separate rooms for setting up the customer's own hardware, are identified as a component of a lease. Furthermore, 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 adjustments made to the consolidated statement of financial position as of January 1, 2019 and attributable to the first-time application of IFRS 16 are as follows [a]:

millions of €	Carrying amount in accordance with IAS 17 Dec. 31, 2018	Remeasurements	Reclassifications	Carrying amount in accordance with IFRS 16 Jan. 1, 2019
ASSETS				
Intangible assets	64,950		(29)	64,921
Property, plant and equipment	50,631		(2,524)	48,107
Right-of-use assets	n.a.	15,601	638	16,239
Other financial assets	4,432		21	4,453
Deferred tax assets	2,949	166		3,115
Other assets	2,234		(196)	2,038
Non-current assets and disposal groups held for sale	145	9		154
LIABILITIES AND SHAREHOLDERS' EQUITY				
LIABILITIES				
Financial liabilities	62,275		(2,481)	59,794
Lease liabilities	n.a.	15,601	2,472	18,073
Other provisions	6,435		(185)	6,250
Deferred tax liabilities	8,240	290		8,530
Other liabilities	3,427	(470)	(1,859)	1,098
Contract liabilities	585		(7)	578
Trade and other payables	10,735		(30)	10,705
Liabilities directly associated with non-current assets and disposal groups held for sale	36	9		45
SHAREHOLDERS' EQUITY				
Retained earnings including carryforwards plus non-controlling interests[b]	(25,462)	346		(25,116)

[a] The overview above contains only those items of the statement of financial position that are affected by the first-time application of IFRS 16; for reasons of simplification, current and non-current items have been combined in the presentation.

[b] For reasons of simplification, the figure is combined to show the cumulative effect of the transition to IFRS 16 to be recognized directly in equity.

After deferred tax liabilities totaling EUR 0.1 billion (net) were taken into account, the transition to the new standard as of January 1, 2019 resulted in a cumulative effect that increased retained earnings by EUR 0.3 billion and included the effect of shares attributable to non-controlling interests. This largely results from the derecognition of accrued lease payments (liabilities from straight-line leases) described above.

Reclassifications relate in particular to reclassifications of carrying amounts from previous finance leases to right-of-use assets and lease liabilities and the adjustments for prepaid or accrued lease payments from operating leases under the previous accounting method, provisions for onerous contracts, or liabilities from straight-line leases against right-of-use assets, as described above.

The obligations arising from operating leases as of December 31, 2018 (2018 Annual Report, Note 37 "Leases") gave rise to the following reconciliation to the opening balance of lease liabilities as of January 1, 2019:

millions of €	January 1, 2019
Obligations arising from operating leases as of December 31, 2018	18,284
Minimum lease payments (nominal value) of finance lease liabilities as of December 31, 2018	2,950
Changes resulting from new definition of leases	(743)
Changes in the assessment of options to extend or terminate the lease	865
Other	(95)
Gross lease liabilities as of January 1, 2019	**21,261**
Discounting	(3,188)
Lease liabilities as of January 1, 2019	**18,073**
Present value of finance lease liabilities as of December 31, 2018	(2,472)
ADDITIONAL LEASE LIABILITIES ATTRIBUTABLE TO FIRST-TIME APPLICATION OF IFRS 16 AS OF JANUARY 1, 2019	**15,601**

If the interest rate implicit in the lease cannot be readily determined, the interest rate used for the measurement of right-of-use assets and lease liabilities is the 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.

For measuring the lease liabilities recognized in the statement of financial position as of January 1, 2019, weighted average incremental borrowing rates of 1.7 percent to 5.0 percent were used for discounting in the euro currency area and a rate of 5.2 percent was applied in the U.S. dollar currency area.

The increase in lease liabilities leads to a corresponding increase in net debt.

millions of €

	2019
DEPRECIATION OF RIGHT-OF-USE ASSETS	**3,649**
Right-of-use assets – land and buildings	1,215
Right-of-use assets – land and buildings from sale and leaseback transactions	142
Right-of-use assets – technical equipment and machinery	2,227
Right-of-use assets – other equipment, operating and office equipment	65
INTEREST EXPENSE ON LEASES	**870**

For further information on changes in the right-of-use assets and lease liabilities reported as of December 31, 2019, please refer to Note 8 "Right-of-use assets – lessee relationships" and Note 13 "Financial liabilities and lease liabilities."

For the presentation in the income statement in the 2019 financial year, please refer to the section "Notes to the consolidated income statement."

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 References to the Conceptual Framework	References to the Conceptual Framework	January 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	January 1, 2020	Clarification of the definition of the concept of materiality.	No material impact.
Amendments to IFRS 9, IAS 39, and IFRS 7	Interest Rate Benchmark Reform	January 1, 2020	Practical expedients for hedge accounting requirements that are mandatory for all hedges affected by the interest rate benchmark reform. Further information on this is also planned.	The effects are detailed in the explanations following this table.
IFRSs NOT YET ENDORSED BY THE EU[a]				
Amendments to IFRS 3	Business Combinations	January 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.
IFRS 17	Insurance Contracts	January 1, 2021	IFRS 17 governs the accounting for insurance contracts and replaces IFRS 4.	No material impact.
Amendments to IAS 1	Presentation of Financial Statements	January 1, 2021	Clarification of the classification of liabilities as current or non-current.	No material impact.

[a] 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.

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, 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 financial instruments, please refer to Note 41 "Financial instruments and risk management."

CHANGES IN ACCOUNTING POLICIES, CHANGES IN ESTIMATES

With the exception of the standards, interpretations, and amendments that are effective for the first time in the financial year, Deutsche Telekom did not make any major changes in its accounting policies.

The contractual grants receivable from public funding projects for the broadband build-out in Germany are recognized in full as of the start of the third quarter of 2019. This is due to the fact that the broadband build-out in Germany has now become a routine activity such that now, as soon as a grant agreement is concluded, it has to be assumed with the reasonable assurance required under IFRS that Deutsche Telekom will meet the conditions for the grant and that the public sector will pay out the grant. Consequently, the expected grants are now recognized in full as other financial assets upon conclusion of the agreement, with a matching non-financial other liability for the existing build-out obligation. Previously, the grant conditions were only deemed to be met with reasonable assurance upon acceptance after completion, and hence until now, only advance payments received were recognized as non-financial other liabilities. Consequently, the funded portion of the payments was initially capitalized as property, plant and equipment, as a result of which the corresponding carrying amount was higher. The grants receivable recognized as other financial assets in the second half of 2019 as a result of this change in estimate amounted to EUR 1.3 billion, and non-financial other liabilities of EUR 1.2 billion were newly recognized for the build-out obligations to be fulfilled. The difference is deducted from property, plant and equipment. The financial assets measured at amortized cost are reduced upon receipt of the grants. The non-financial other liabilities are derecognized on a pro rata basis as the build-out progresses, reducing the cost of the publicly funded property, plant and equipment. All grants received from funding projects and payments made for the build-out are recognized in net cash from/used in investing activities. Grants and payments for funding projects for which the reasonable assurance described above already exists are recognized separately in the items “Proceeds from public funds for investments in the broadband build-out” and “Payments for publicly funded investments in the broadband build-out.” 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 “Cash outflows for investments in property, plant and equipment,” because the payments made do not result in additions to property, plant and equipment.

For further information on this change in estimate, please refer to Note 35 “Notes to the consolidated statement of cash flows.”

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)

Items in the statement of financial position	Measurement principle
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 an exchange 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 exchange 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.

The useful lives and the amortization methods of the assets are reviewed at least at each financial year-end and, if expectations differ from previous estimates, the changes are accounted for 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 21
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 45.4 million (2018: EUR 57.7 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 the 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 and, 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 applicable lease terms.

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 cash-generating unit to which the assets can be allocated. 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 on 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 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 percent 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 can therefore 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 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 a 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.

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. All other variable payments are typically 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 their exercise is not reasonably certain. 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. 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 substantially all risks and rewards incidental to ownership of an underlying leased asset are attributable to the lessor **(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 revenue from leases 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 attributable 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 the 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 as selling profit or loss. If there is no transfer of control, the seller-lessee recognizes the transaction as a financial liability equal to the transfer proceeds. 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 have to be 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 if Deutsche Telekom recorded 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, lowering 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 classed as contract liabilities and are deferred 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 classed by Deutsche Telekom as promotional offers to be excluded from consideration.

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 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 carried at the date of revenue recognition which 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 tax is recognized, it 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. By way of derogation from 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 accounting profit 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 exchange transactions is based on management's judgment as to whether an exchange 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 indicate an impairment exists. The identification of impairment indicators, as well as the estimation of future cash flows and the determination of fair values for assets (or groups of assets) require management to make significant judgments concerning the identification and validation of impairment indicators, expected cash flows, applicable discount rates, useful lives, and residual values. 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 does not materialize as expected, this would result in less revenue, less cash flow, and potential impairment. When determining the fair values, additional planning uncertainties are factored in that reflect the risks of macroeconomic development, which 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 measurements on the basis of discounted cash flows are founded on projections that are based on financial plans that have been approved by management and are also used for internal purposes. The planning horizon selected 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 is only 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 the rights of spectrum use. Cash flows beyond the internal mid-term planning are extrapolated using appropriate growth rates. 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 to include 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. Any future changes in the aforementioned assumptions could have a significant impact on the fair values of the cash-generating units.

Management maintains an **allowance for doubtful accounts** to account for estimated losses resulting from the inability of customers to make required payments. 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 the recognition of 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, if available, 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 the customer is likely from a commercial perspective 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, 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 ten years with four five-year renewal options. 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 the Deutsche Telekom Group, 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" under IAS 37 "Provisions, Contingent liabilities and Contingent Assets."

In determining the duration of leases of cell site space, land/ground, 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, Deutsche Telekom concluded that it is 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 assessment of a reasonable certainty exercise 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, and is able to use power to affect its 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 percent of the Group's total assets, revenue, profit/loss for the year, contingent assets/liabilities, and other financial obligations. If the 1-percent 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 have been recognized under other assets since the 2018 financial year.

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 are 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 are 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 revalued 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 2019 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.

ACQUISITION OF TELE2 NETHERLANDS HOLDING N.V.

On December 15, 2017, Deutsche Telekom signed an agreement with the Tele2 Group on the acquisition of 100 percent of the shares in the telecommunications provider Tele2 Netherlands Holding N.V. (Tele2 Netherlands) by T-Mobile Netherlands Holding B.V. (T-Mobile Netherlands). After the European Commission issued its approval without conditions on November 27, 2018, the transaction was consummated on January 2, 2019. Tele2 Netherlands has been included in Deutsche Telekom's consolidated financial statements as a fully consolidated subsidiary since the acquisition date. This transaction will establish a stronger, more sustainable provider of convergent fixed-network and mobile services in the Dutch market.

Consideration totaling EUR 718 million was transferred from the Deutsche Telekom Group at the acquisition date. This consisted of a cash payment (taking purchase price adjustments into account) of EUR 199 million and the transfer of a 25 percent share in T-Mobile Netherlands (prior to the business combination) that was measured at a fair value of EUR 519 million. As a consequence of this transaction, Deutsche Telekom now recognizes non-controlling interests of 25 percent in the combined company resulting from the aforementioned transfer of 25 percent of the shares in T-Mobile Netherlands (prior to the business combination) and the non-controlling interests in Tele2 Netherlands.

The purchase price allocation and the measurement of Tele2 Netherlands' assets and liabilities at the acquisition date were finalized as of December 31, 2019. The fair values of Tele2 Netherlands' 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	**283**
Cash and cash equivalents	4
Trade receivables	235
Contract assets	7
Other assets	20
Inventories	17
NON-CURRENT ASSETS	**1,094**
Goodwill	109
Other intangible assets	455
Of which: customer base	210
Of which: spectrum licenses	182
Of which: other	63
Property, plant and equipment	286
Right-of-use assets	171
Deferred tax assets	67
Other assets	6
ASSETS	**1,377**
LIABILITIES	
CURRENT LIABILITIES	**264**
Lease liabilities	79
Trade and other payables	97
Other provisions	58
Contract liabilities	10
Other liabilities	20
NON-CURRENT LIABILITIES	**155**
Lease liabilities	118
Other provisions	17
Deferred tax liabilities	15
Contract liabilities	5
LIABILITIES	**419**

Deutsche Telekom has measured the non-controlling interests in the acquiree at fair value. This means that the full-goodwill method has been used.

The acquired goodwill of EUR 109 million to be recognized in Deutsche Telekom's consolidated statement of financial position is calculated as follows:

millions of €	Fair value at the acquisition date
Consideration transferred	718
+ non-controlling interests	240
– fair value of the acquired assets	(1,268)
+ fair value of the acquired liabilities	419
= GOODWILL	**109**

The goodwill reflects the value of expected synergies arising from the acquisition, expected new customer gains, and the value of the assembled workforce. Goodwill can be deducted from income tax in the amount of EUR 92 million.

The spectrum licenses were measured using the guideline transaction method, with the fair value being derived on the basis of the price analyses used in spectrum auctions carried out in the European telecommunications industry. The spectrum licenses are amortized over the expected useful life of 10 to 11 years. The customer base was measured using the multi-period excess earnings method. Under this method, the fair value of the customer base is determined by calculating the present value of profit/loss after taxes that can be assigned to the existing customers. The customer base is amortized over the remaining useful life of 5 to 15 years.

The carrying amounts of the acquired receivables are based on the fair values. The gross amounts of the receivables amount to EUR 279 million. No material contingent liabilities have been identified.

The deferred tax assets relate to Tele2 Netherlands' loss carryforwards. 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.

No material transaction-based costs were incurred by December 31, 2019.

Deutsche Telekom's net revenue increased by EUR 598 million in the reporting period due to the acquisition of Tele2 Netherlands. Net profit for the current reporting period includes profit/loss before taxes of EUR -24 million from Tele2 Netherlands. Since the business combination took place before the beginning of the 2019 financial year, net revenue and net profit would not have been other than as reported.

SALE OF TELEKOM ALBANIA

On January 15, 2019, OTE concluded an agreement for the sale of its stake in Telekom Albania to Bulgarian company Albania Telecom Invest AD for a purchase price of EUR 50 million. The transaction was consummated on May 7, 2019. The net deconsolidation gain/loss resulting from the sale is immaterial from a Group perspective.

TRANSFER OF THE STAKE IN STRÖER SE & CO. KGaA TO PLAN ASSETS

On August 14, 2019, Deutsche Telekom transferred its 11.34 percent stake in Ströer SE & Co. KGaA to Deutsche Telekom Trust e.V., where it will be used as plan assets to cover existing pension obligations. This transaction resulted in income of EUR 142 million from the divestiture of the stake, which had previously been accounted for using the equity method.

For further information, please refer to the section "Notes to the consolidated statement of financial position."

The composition of the Deutsche Telekom Group changed as follows in the 2019 financial year:

	Domestic	International	Total
CONSOLIDATED SUBSIDIARIES			
January 1, 2019	61	213	274
Additions	3	17	20
Disposals (including mergers)	3	24	27
DECEMBER 31, 2019	**61**	**206**	**267**
ASSOCIATES ACCOUNTED FOR USING THE EQUITY METHOD			
January 1, 2019	2	7	9
Additions	2	2	4
Disposals	1	2	3
DECEMBER 31, 2019	**3**	**7**	**10**
JOINT VENTURES ACCOUNTED FOR USING THE EQUITY METHOD			
January 1, 2019	2	4	6
Additions	0	2	2
Disposals	1	0	1
DECEMBER 31, 2019	**1**	**6**	**7**
TOTAL			
January 1, 2019	65	224	289
Additions	5	21	26
Disposals (including mergers)	5	26	31
DECEMBER 31, 2019	**65**	**219**	**284**

The following transaction will change the composition of the Deutsche Telekom Group in the future.

AGREED 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. The agreement is subject to approvals by the regulatory and anti-trust authorities and certain other customary closing conditions. Under the agreement, T-Mobile US will acquire all of the shares in Sprint. In return for every 9.75 Sprint shares, the company's shareholders will receive one new T-Mobile US share without any additional cash contribution. On completion of the transaction, Deutsche Telekom will hold around 42 percent of T-Mobile US' shares and Softbank around 27 percent, while the free float will account for around 31 percent. Due to the voting-rights agreement with Softbank, and to the fact that individuals nominated by Deutsche Telekom will hold the majority of the seats on the new company's Board of Directors, T-Mobile US will continue to be included as a fully consolidated subsidiary in the consolidated financial statements.

For further information, please refer to the section "Group organization" in the combined management report.

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 in 2018, OTE held a total of 10,211,070 treasury shares with an aggregate value of EUR 109 million as of December 31, 2018. The extraordinary shareholders' meeting of OTE S.A. on December 19, 2018 resolved to withdraw 10,211,070 shares from circulation, with a corresponding capital reduction of EUR 29 million. The shares were retired from the Athens Stock Exchange on February 19, 2019. As a result, Deutsche Telekom's share in the OTE group increased from 45.00 to 45.96 percent.

RESOLUTION ON T-MOBILE US' SHARE BUY-BACK PROGRAM IN THE EVENT OF THE TERMINATION OF THE AGREEMENT WITH SPRINT

On April 27, 2018, T-Mobile US' Board of Directors authorized an increase in the total share buy-back program to up to USD 9.0 billion, consisting of the USD 1.5 billion in repurchases already executed and for up to an additional USD 7.5 billion of T-Mobile US common stock until the end of 2020. The additional buy-back authorization is contingent upon termination of the business combination agreement with Sprint.

PRINCIPAL SUBSIDIARIES

The Group's principal subsidiaries are presented in the following table:

Name and registered office		Deutsche Telekom share %	Net revenue[c] millions of €	Profit (loss) from operations[c] millions of €	Shareholders' equity[c] millions of €	Average number of employees	Segment allocation
Telekom Deutschland GmbH, Bonn, Germany	**Dec. 31, 2019/2019**	100.00	21,617	4,736	6,723	3,573	Germany
	Dec. 31, 2018/2018	100.00	21,342	4,692	6,423	4,121	
T-Mobile US, Inc., Bellevue, Washington, United States[a,b]	**Dec. 31, 2019/2019**	62.85	40,420	5,488	30,327	46,544	United States
	Dec. 31, 2018/2018	63.34	36,522	4,634	25,897	45,729	
T-Systems International GmbH, Frankfurt/Main, Germany	**Dec. 31, 2019/2019**	100.00	5,048	(362)	935	12,149	Systems Solutions
	Dec. 31, 2018/2018	100.00	5,086	(454)	1,109	12,481	
Hellenic Telecommunications Organization S.A. (OTE), Athens, Greece[a]	**Dec. 31, 2019/2019**	45.96	3,927	241	2,902	18,033	Europe
	Dec. 31, 2018/2018	45.00	3,861	429	3,239	19,507	
Magyar Telekom Telecommunications Public Limited Company, Budapest, Hungary[a,b]	**Dec. 31, 2019/2019**	59.72	2,049	257	2,316	8,468	Europe
	Dec. 31, 2018/2018	59.72	2,060	241	2,326	9,166	
T-Mobile Netherlands Holding B. V., The Hague, Netherlands[a,b]	**Dec. 31, 2019/2019**	75.00	1,910	57	1,872	1,892	Group Development
	Dec. 31, 2018/2018	100.00	1,322	192	1,467	1,211	
T-Mobile Polska S.A., Warsaw, Poland[a,b]	**Dec. 31, 2019/2019**	100.00	1,486	93	1,505	4,569	Europe
	Dec. 31, 2018/2018	100.00	1,525	(552)	1,462	4,816	
T-Mobile Czech Republic a.s., Prague, Czech Republic[a,b]	**Dec. 31, 2019/2019**	100.00	1,088	289	1,956	3,369	Europe
	Dec. 31, 2018/2018	100.00	1,047	274	1,924	3,516	
Hrvatski Telekom d.d., Zagreb, Croatia[a,b]	**Dec. 31, 2019/2019**	51.42	1,039	137	2,276	5,511	Europe
	Dec. 31, 2018/2018	51.14	1,049	185	2,303	5,424	
T-Mobile Austria Holding GmbH, Vienna, Austria[a,b]	**Dec. 31, 2019/2019**	100.00	1,276	30	3,488	2,120	Europe
	Dec. 31, 2018/2018	100.00	1,055	41	3,474	1,548	
Slovak Telekom a.s., Bratislava, Slovakia[a,b]	**Dec. 31, 2019/2019**	100.00	785	161	1,543	3,482	Europe
	Dec. 31, 2018/2018	100.00	761	149	1,532	3,568	

[a] Consolidated subgroup.

[b] Indirect shareholding of Deutsche Telekom AG.

[c] IFRS figures of the respective subgroup.

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[c] millions of €	Dividends paid out to non-controlling interests millions of €
T-Mobile US, Inc., Bellevue, Washington, United States[a,b]	**Dec. 31, 2019/2019**	37.15	37.15	11,024	0
	Dec. 31, 2018/2018	36.66	36.66	9,255	0
Hellenic Telecommunications Organization S.A. (OTE), Athens, Greece[a]	**Dec. 31, 2019/2019**	54.04	50.00	1,378	134
	Dec. 31, 2018/2018	55.00	50.00	1,607	93
Magyar Telekom Telecommunications Public Limited Company, Budapest, Hungary[a,b]	**Dec. 31, 2019/2019**	40.28	40.28	701	44
	Dec. 31, 2018/2018	40.28	40.28	696	44
Hrvatski Telekom d.d., Zagreb, Croatia[a,b]	**Dec. 31, 2019/2019**	48.58	48.58	898	54
	Dec. 31, 2018/2018	48.86	48.86	917	33
T-Mobile Netherlands Holding B.V., The Hague, Netherlands[a,b]	**Dec. 31, 2019/2019**	25.00	25.00	468	0
	Dec. 31, 2018/2018	n.a.	n.a.	n.a.	n.a.

[a] Consolidated subgroup.

[b] Indirect shareholding of Deutsche Telekom AG.

[c] IFRS figures at the level of the consolidated financial statements of Deutsche Telekom.

Deutsche Telekom held 45.96 percent 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 percent plus two voting shares and therefore the OTE group's financial and operating policy. Consequently, the OTE group companies are fully consolidated subsidiaries.

For further information, please refer to the section "Changes in the composition of the Group and other transactions."

Summarized financial information for subsidiaries with significant non-controlling interests:

millions of €

Name and registered office		Current assets[c]	Non-current assets[c]	Current liabilities[c]	Non-current liabilities[c]	Profit (loss)[c]	Total compre-hensive income[c]
T-Mobile US, Inc., Bellevue, Washington, United States[a,b]	**Dec. 31, 2019/2019**	10,460	73,954	19,123	34,963	3,593	3,602
	Dec. 31, 2018/2018	9,171	60,052	16,688	26,638	2,481	3,377
Hellenic Telecommunications Organization S.A. (OTE), Athens, Greece[a]	**Dec. 31, 2019/2019**	2,006	5,205	2,432	1,877	79	26
	Dec. 31, 2018/2018	2,161	5,353	2,386	1,888	194	233
Magyar Telekom Telecommunications Public Limited Company, Budapest, Hungary[a,b]	**Dec. 31, 2019/2019**	781	3,352	912	906	139	82
	Dec. 31, 2018/2018	800	3,230	1,069	636	145	79
Hrvatski Telekom d.d., Zagreb, Croatia[a,b]	**Dec. 31, 2019/2019**	817	1,906	333	114	101	94
	Dec. 31, 2018/2018	757	1,941	325	70	141	149
T-Mobile Netherlands Holding B.V., The Hague, Netherlands[a,b]	**Dec. 31, 2019/2019**	754	3,186	643	1,425	12	12
	Dec. 31, 2018/2018	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

[a] Consolidated subgroup.
[b] Indirect shareholding of Deutsche Telekom AG.
[c] IFRS figures of the respective subgroup.

millions of €

Name and registered office		Net cash from operating activities[c]	Net cash (used in) from investing activities[c]	Net cash (used in) from financing activities[c]
T-Mobile US, Inc., Bellevue, Washington, United States[a,b]	**2019**	11,438	(6,997)	(4,135)
	2018	7,567	(4,936)	(2,606)
Hellenic Telecommunications Organization S.A. (OTE), Athens, Greece[a]	**2019**	1,121	(446)	(707)
	2018	949	(558)	(597)
Magyar Telekom Telecommunications Public Limited Company, Budapest, Hungary[a,b]	**2019**	492	(257)	(226)
	2018	500	(266)	(167)
Hrvatski Telekom d.d., Zagreb, Croatia[a,b]	**2019**	348	(181)	(219)
	2018	321	(190)	(134)
T-Mobile Netherlands Holding B.V., The Hague, Netherlands[a,b]	**2019**	484	(488)	(142)
	2018	n.a.	n.a.	n.a.

[a] Consolidated subgroup.
[b] Indirect shareholding of Deutsche Telekom AG.
[c] IFRS figures of the respective subgroup.

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., Poland, 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 percent) 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	
	2019	2018	2017	**Dec. 31, 2019**	Dec. 31, 2018
100 Czech korunas (CZK)	3.89551	3.87824	3.79799	3.93593	3.88538
1 pound sterling (GBP)	1.13925	1.13049	1.14063	1.17482	1.11769
100 Croatian kuna (HRK)	13.48050	13.48050	13.39790	13.43960	13.48890
1,000 Hungarian forints (HUF)	3.07429	3.13607	3.23421	3.02481	3.11347
100 Macedonian denars (MKD)	1.62726	1.62440	1.62388	1.62299	1.62445
100 Polish zlotys (PLN)	23.26470	23.46130	23.48500	23.49380	23.24910
1 U.S. dollar (USD)	0.89326	0.82946	0.88549	0.89055	0.87321

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 1,273 million (December 31, 2018: EUR 404 million) on the basis of collateral contracts as surety for potential credit risks arising from derivative transactions. Cash and cash equivalents increased by EUR 1.7 billion to EUR 5.4 billion.

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

As of December 31, 2019, Deutsche Telekom reported cash and cash equivalents of EUR 25.0 million held by subsidiaries in North Macedonia (December 31, 2018: EUR 12.3 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 0.9 billion to EUR 10.8 billion. Of the total of trade receivables, EUR 9,074 million (December 31, 2018: EUR 8,300 million) is due within one year.

The increase in the carrying amount related primarily to increased receivables in the Systems Solutions, United States, Group Development, and Germany operating segments. In the Systems Solutions operating segment, receivables increased mainly as a result of the expiration of a factoring transaction. A larger customer base and an increase in receivables from wholesale partners contributed to higher receivables in the United States operating segment, while in the Group Development operating segment, receivables increased as a result of the acquisition of Tele2 Netherlands and the resulting increase in the customer base. Exchange rate effects, especially from the translation of U.S. dollars into euros, also increased receivables.

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 1.8 billion as of December 31, 2018 to EUR 1.9 billion as of December 31, 2019.

Contract assets have arisen from the application of IFRS 15 since the 2018 financial year and 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.

Contract assets increased by EUR 80 million in the reporting year, due to a change in the business model in Poland in September 2018. Whereas the previous business model did not provide for handsets to be sold at a discount, the terminal equipment business is now subsidized.

For information on allowances on contract assets, please refer to Note 41 "Financial instruments and risk management."

4 INVENTORIES

millions of €	**Dec. 31, 2019**	Dec. 31, 2018
Raw materials and supplies	50	56
Work in process	18	20
Finished goods and merchandise	1,500	1,714
	1,568	**1,790**

The carrying amount of inventories decreased year-on-year by EUR 0.2 billion to EUR 1.6 billion, mainly due to the reduction in inventories of mobile devices in the Germany and United States operating segments. Write-downs of EUR 20 million (2018: EUR 42 million, 2017: EUR 27 million) on the net realizable value were recognized in profit or loss in 2019. The carrying amount of inventories expensed during the reporting period was EUR 14,340 million (2018: EUR 14,373 million; 2017: EUR 13,358 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, 2019, current assets recognized in the consolidated statement of financial position included EUR 0.1 billion (December 31, 2018: EUR 0.1 billion) in non-current assets and disposal groups held for sale. At December 31, 2019, as at the prior-year reporting date, current liabilities in the consolidated statement of financial position did not include any liabilities directly associated with non-current assets and disposal groups held for sale.

millions of €

	Dec. 31, 2019			Dec. 31, 2018			
	Deutsche Telekom AG	Other	Total	Deutsche Telekom AG	Telekom Albania	Other	Total
NON-CURRENT ASSETS AND DISPOSAL GROUPS HELD FOR SALE							
Cash and cash equivalents	0	0	**0**	0	7	0	**7**
Trade receivables	0	0	**0**	0	12	0	**12**
Inventories	0	0	**0**	0	2	0	**2**
Other current assets	0	35	**35**	0	7	34	**41**
Intangible assets	0	0	**0**	0	13	0	**13**
Property, plant and equipment	50	12	**62**	42	21	0	**63**
Deferred tax assets	0	0	**0**	0	6	0	**6**
TOTAL	**50**	**47**	**97**	**42**	**68**	**34**	**145**
LIABILITIES DIRECTLY ASSOCIATED WITH NON-CURRENT ASSETS AND DISPOSAL GROUPS HELD FOR SALE							
Trade and other payables	0	29	**29**	0	34	0	**34**
Other non-current provisions	0	0	**0**	0	2	0	**2**
TOTAL	**0**	**29**	**29**	**0**	**36**	**0**	**36**

Real estate in the Group Headquarters & Group Services segment was sold in the reporting year. As of December 31, 2018, this item had included the assets and liabilities of Telekom Albania, which had been recorded in the Europe operating segment. This made it necessary to remeasure these assets, which resulted in an impairment loss of EUR 35 million recognized as of the date of the reclassification in the prior year on some of the intangible assets and property, plant and equipment assigned to the Albania cash-generating unit. This impairment was recognized under depreciation, amortization and impairment losses. On January 15, 2019, OTE concluded an agreement for the sale of its stake in Telekom Albania to Bulgarian company Albania Telecom Invest AD for a purchase price of EUR 50 million. The transaction was consummated on May 7, 2019.

For further information, please refer to the section “Changes in the composition of the Group and other transactions.”

In addition, Deutsche Telekom AG’s real estate held for sale of EUR 6 million as of December 31, 2019 (December 31, 2018: EUR 21 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 percent of the fair value) are subtracted. The real estate was written down by EUR 5 million (2018: EUR 11 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	UMTS licenses
COST					
AT DECEMBER 31, 2017	**6,714**	**74,381**	**1,282**	**6,167**	**9,969**
Currency translation	206	2,001	12	(50)	(6)
Changes in the composition of the Group	0	724	36	0	0
Additions	284	1,236	235	49	0
Disposals	(674)	(1,182)	(144)	(9)	(6)
Change from non-current assets and disposal groups held for sale	0	(264)	0	(14)	(23)
Reclassifications	840	1,378	5	89	0
AT DECEMBER 31, 2018	**7,371**	**78,275**	**1,427**	**6,232**	**9,935**
Adjustment resulting from the change in accounting standards	0	(68)	0	0	0
Currency translation	94	932	6	(9)	3
Changes in the composition of the Group	47	414	2	182	0
Additions	344	4,113	159	0	0
Disposals	(802)	(1,293)	(60)	0	0
Change from non-current assets and disposal groups held for sale	(3)	0	0	0	0
Reclassifications	1,148	1,313	8	(1)	0
AT DECEMBER 31, 2019	**8,200**	**83,687**	**1,542**	**6,404**	**9,937**
ACCUMULATED AMORTIZATION AND IMPAIRMENT LOSSES					
AT DECEMBER 31, 2017	**(4,263)**	**(28,303)**	**(767)**	**(1,496)**	**(8,103)**
Adjustment resulting from the change in accounting standards	0	0	0	0	0
Currency translation	(143)	(337)	(9)	11	4
Changes in the composition of the Group	0	0	0	0	0
Additions (amortization)	(1,017)	(3,320)	(221)	(398)	(583)
Additions (impairment)	(5)	(40)	0	(6)	(6)
Disposals	659	1,173	141	9	6
Change from non-current assets and disposal groups held for sale	0	250	0	9	19
Reclassifications	6	(8)	(1)	1	0
Reversal of impairment losses	0	0	0	0	0
AT DECEMBER 31, 2018	**(4,762)**	**(30,585)**	**(857)**	**(1,870)**	**(8,663)**
Adjustment resulting from the change in accounting standards	0	39	0	0	0
Currency translation	(65)	(181)	(4)	5	(2)
Changes in the composition of the Group	0	0	0	0	0
Additions (amortization)	(1,143)	(3,588)	(266)	(429)	(580)
Additions (impairment)	(2)	(73)	0	0	0
Disposals	801	1,293	60	0	0
Change from non-current assets and disposal groups held for sale	2	0	0	0	0
Reclassifications	(3)	(14)	2	0	0
Reversal of impairment losses	0	0	0	0	0
AT DECEMBER 31, 2019	**(5,171)**	**(33,110)**	**(1,066)**	**(2,294)**	**(9,244)**
NET CARRYING AMOUNTS					
At December 31, 2018	2,609	47,690	569	4,363	1,272
AT DECEMBER 31, 2019	**3,029**	**50,577**	**477**	**4,110**	**692**

Acquired intangible assets				Goodwill	Advance payments and intangible assets under development	
GSM licenses	FCC licenses (T-Mobile US)	5G licenses	Other acquired intangible assets			Total
1,394	**38,268**	**0**	**17,301**	**29,242**	**2,086**	**112,423**
(5)	1,841	0	209	469	18	2,695
0	71	0	618	736	1	1,462
3	264	0	685	0	2,469	3,989
0	0	0	(1,023)	0	(14)	(1,869)
(15)	(1)	0	(212)	(37)	0	(302)
0	0	0	1,284	0	(2,177)	41
1,377	**40,443**	**0**	**18,862**	**30,410**	**2,383**	**118,439**
0	0	0	(68)	0	0	(68)
2	807	0	124	225	13	1,264
0	0	0	230	162	15	638
0	1,033	2,237	684	0	2,192	6,649
(2)	0	0	(1,230)	0	(30)	(2,124)
0	0	0	0	0	0	(3)
13	0	0	1,294	0	(2,413)	48
1,390	**42,283**	**2,237**	**19,895**	**30,796**	**2,161**	**124,844**
(650)	**(3,960)**	**0**	**(13,327)**	**(16,992)**	**0**	**(49,558)**
0	0	0	0	(78)	0	(78)
4	(189)	0	(159)	(471)	0	(950)
0	0	0	0	0	0	0
(68)	0	0	(2,049)	0	0	(4,337)
(7)	0	0	(22)	(639)	0	(685)
0	0	0	1,018	0	0	1,832
10	0	0	211	37	0	288
0	0	0	(9)	0	0	(2)
0	0	0	0	0	0	0
(711)	**(4,149)**	**0**	**(14,335)**	**(18,143)**	**0**	**(53,489)**
0	0	0	39	0	0	39
(2)	(82)	0	(96)	(218)	0	(464)
0	0	0	0	0	0	0
(58)	0	(13)	(2,242)	0	0	(4,731)
0	0	0	(73)	0	0	(74)
2	0	0	1,230	0	0	2,094
0	0	0	0	0	0	2
(13)	0	0	(3)	0	0	(17)
0	0	0	0	0	0	0
(781)	**(4,232)**	**(13)**	**(15,480)**	**(18,360)**	**0**	**(56,641)**
666	36,293	0	4,526	12,267	2,383	64,950
608	**38,051**	**2,223**	**4,415**	**12,436**	**2,161**	**68,202**

Intangible assets increased by EUR 3.3 billion to EUR 68.2 billion. Additions totaling EUR 6.6 billion increased the carrying amount and mainly relate to capital expenditures in the Germany, United States, Europe, and Group Development operating segments. In the Germany operating segment, additions of EUR 2.2 billion relate to the 5G licenses acquired in Germany. In the United States operating segment, capital expenditures included a total of EUR 1.0 billion for the acquisition of FCC mobile licenses. In the Europe operating segment, 5G licenses acquired in Austria increased the carrying amount by EUR 0.1 billion. The carrying amount was also increased by changes in the composition of the Group amounting to EUR 0.6 billion, mainly in connection with the acquisition of Tele2 Netherlands. Positive exchange rate effects, primarily from the translation of U.S. dollars into euros, increased the carrying amount by EUR 0.8 billion. Amortization and impairment losses reduced the net carrying amount by EUR 4.8 billion. This included impairment losses of EUR 0.1 billion, mainly relating to the Europe operating Segment – due in particular to the impairment loss recognized on non-current assets arising from the ad hoc impairment test at the Romania cash-generating unit – and the Systems Solutions operating segment.

For further information on the ad hoc impairment test, please refer to Note 7 "Property, plant and equipment."

In the 2019 financial year, the following factors affected changes in the **carrying amounts of goodwill at cash-generating units** in the operating segments:

Germany. The increase in goodwill of EUR 10 million compared with December 31, 2018 relates to the acquisition of companies that overall are immaterial for the operating segment.

United States. The increase in goodwill of EUR 51 million compared with December 31, 2018 relates to the acquisition of companies that overall are immaterial for the operating segment, and to exchange rate effects from the translation of U.S. dollars into euros.

Europe. Changes in goodwill in the cash-generating units Poland, Hungary, Croatia, and the Czech Republic result from exchange rate effects.

Group Development. The acquisition of Tele2 Netherlands resulted in identifiable intangible assets totaling EUR 455 million at the acquisition date (including customer base and spectrum licenses) in addition to goodwill of EUR 109 million. Following the acquisition of Tele2 Netherlands Holding N.V. and the business combination with T-Mobile Netherlands Holding B.V., T-Mobile Netherlands' cell towers and roof-top sites were spun off into the newly created cash-generating unit T-Mobile Infra B.V. Prorated goodwill of EUR 259 million was also transferred to this unit at the same time.

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, 2019, 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. No need for impairment of goodwill was identified at any of the cash-generating units as of December 31, 2019 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 impairment test as of December 31, 2018 resulted in a need for impairment of goodwill totaling EUR 639 million at the cash-generating units Poland and Romania in the Europe operating segment.

The recoverable amounts to be identified for the impairment test 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 discount rate, net cash flow, and sustainable growth rate.

The recoverable amounts at the cash-generating units Netherlands, T-Mobile Infra B.V., 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. The planning horizon selected 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 can only be established based on this planning horizon, 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 the rights of spectrum use. 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 determination of the recoverable amount include the following assumptions that were primarily derived from internal sources and are based on past experience and extended to include 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 market and country risks associated with the cash-generating unit. Any significant future changes in the aforementioned assumptions would have an 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.

First-time application of IFRS 16 “Leases.” The first-time application of IFRS 16 had no effect on the results of the impairment tests for the cash-generating units that had to be tested for impairment in accordance with IAS 36.

The following table provides an overview of the main factors affecting the measurement and the classification of the input parameters (levels) used to determine the recoverable amounts in accordance with IFRS 13.

		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	2019	3,729	0	10	4.11	0.0	Level 3
	2018	3,719	0	10	4.84	0.0	Level 3
UNITED STATES	2019	1,332	0	n.a.	n.a.	n.a.	Level 1
	2018	1,281	0	n.a.	n.a.	n.a.	Level 1
EUROPE							
Poland	2019	204	0	10	6.39	2.0	Level 3
	2018	202	608	10	7.94	2.0	Level 3
Hungary	2019	1,007	0	10	7.22	2.0	Level 3
	2018	1,036	0	10	8.33	2.0	Level 3
Czech Republic	2019	800	0	10	5.60	2.0	Level 3
	2018	778	0	10	6.11	2.0	Level 3
Croatia	2019	525	0	10	6.24	2.0	Value in use
	2018	521	0	10	7.08	2.0	Value in use
Slovakia	2019	428	0	10	4.61	2.0	Level 3
	2018	428	0	10	5.64	2.0	Level 3
Greece	2019	422	0	10	6.19	2.0	Level 3
	2018	422	0	10	7.94	2.0	Level 3
Austria	2019	877	0	10	4.39	2.0	Level 3
	2018	877	0	10	5.43	2.0	Level 3
Telekom Global Carrier	2019	102	0	10	4.20	2.0	Level 3
	2018	102	0	10	4.88	2.0	Level 3
Other[c]	2019	78	0	10	8.03–8.06	2.0	Value in use
	2018	78	0	10	8.36–8.38	2.0	Value in use
SYSTEMS SOLUTIONS							
Systems Solutions	2019	1,143	0	10	5.45	1.0	Level 3
	2018	1,143	0	10	6.43	1.5	Level 3
GROUP DEVELOPMENT							
Netherlands[d]	2019	679	0	10	4.07	0.5	Value in use
	2018	830	0	10	5.14	0.5	Value in use
Deutsche Funkturm	2019	259	0	10	3.78	1.0	Level 3
	2018	259	0	10	4.61	1.0	Level 3
T-Mobile Infra B.V.[d]	2019	259	0	10	4.59	0.5	Value in use
	2018	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
GROUP HEADQUARTERS & GROUP SERVICES							
Deutsche Telekom IT	2019	590	0	10	7.13	1.0	Level 3
	2018	590	0	10	7.13	1.5	Level 3
DEUTSCHE TELEKOM IN TOTAL	2019	**12,436**	**0**				
	2018	**12,267**	**639**				

[a] Discount rate consistently after taxes. The discount rate before taxes for the calculation of the value in use amounts to 7.47 percent (2018: 8.49 percent) for Croatia, 8.79 to 9.01 percent (2018: 9.25 to 9.36 percent) for "Other," 5.74 percent (2018: n.a.) for T-Mobile Infra B.V., and 4.90 percent (2018: 5.96 percent) for the Netherlands.

[b] Level of input parameters in the case of fair value less costs of disposal.

[c] This includes goodwill from the cash-generating units Montenegro and North Macedonia.

[d] Goodwill of EUR 109 million arose in connection with the acquisition of Tele2 Netherlands Holding N.V. Following the acquisition, T-Mobile Netherlands' cell towers and roof-top sites were spun off into the newly created cash-generating unit T-Mobile Infra B.V. This involved the transfer of goodwill of EUR 259 million.

The sensitivity analyses for the need for impairment resulting from a change in the main parameters affecting measurement did not result in any need for impairment for any cash-generating unit to which goodwill is allocated. Changes of plus or minus 50 basis points in the discount rate and in the sustainable growth rate, and of 5 percentage points in net cash flows were each analyzed separately.

Deutsche Telekom had commitments for the acquisition of intangible assets in the amount of EUR 0.4 billion (December 31, 2018: EUR 0.5 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, 2017	**17,887**	**123,122**	**8,841**	**3,618**	**153,468**
Currency translation	104	1,165	76	44	1,389
Changes in the composition of the Group	65	1,198	137	8	1,408
Additions	88	4,947	431	5,800	11,266
Disposals	(382)	(3,975)	(591)	(66)	(5,014)
Change from non-current assets and disposal groups held for sale	(184)	(163)	(41)	(5)	(393)
Reclassifications	387	4,226	583	(5,238)	(41)
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**
ACCUMULATED DEPRECIATION AND IMPAIRMENT LOSSES					
AT DECEMBER 31, 2017	**(11,371)**	**(89,198)**	**(6,021)**	**0**	**(106,590)**
Currency translation	(72)	(647)	(38)	0	(757)
Changes in the composition of the Group	0	0	(1)	0	(1)
Additions (depreciation)	(647)	(7,324)	(806)	0	(8,777)
Additions (impairment)	(13)	(20)	(3)	(3)	(38)
Disposals	292	3,544	534	0	4,371
Change from non-current assets and disposal groups held for sale	134	154	39	3	330
Reclassifications	(7)	49	(41)	0	2
Reversal of impairment losses	7	1	0	0	8
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)**
NET CARRYING AMOUNTS					
At December 31, 2018	6,288	37,080	3,100	4,162	50,631
AT DECEMBER 31, 2019	**5,599**	**36,710**	**3,079**	**4,161**	**49,548**

[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 decreased by EUR 1.1 billion compared to December 31, 2018 to EUR 49.5 billion. The first-time application of IFRS 16 as of January 1, 2019 accounted for a reduction of EUR 2.5 billion. Assets arising from finance leases that were reported under property, plant and equipment until December 31, 2018, for which Deutsche Telekom as the lessee bore substantially all the risks and rewards associated with the lease, are now recognized as rights to use the underlying leased assets. Depreciation and impairment losses of EUR 9.2 billion reduced the carrying amount. This included impairment losses of EUR 0.3 billion primarily relating to technical equipment and machinery in the Romania cash-generating unit in the Europe operating segment. Disposals of EUR 0.6 billion also reduced the carrying amount. Additions of EUR 10.6 billion – especially 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 – increased the carrying amount. Effects of changes in the composition of the Group resulting from the acquisition of Tele2 Netherlands increased the carrying amount by EUR 0.3 billion. Positive exchange rate effects, primarily from the translation of U.S. dollars into euros, increased the carrying amount by EUR 0.2 billion.

For further information on the first-time application of IFRS 16, please refer to the section “Initial application of standards, interpretations, and amendments.”

For further information, please refer to the section “Changes in the composition of the Group and other transactions.”

For further information on depreciation, amortization and impairment losses, please refer to Note 27 “Depreciation, amortization and impairment losses” and Note 6 “Intangible assets.”

For further information on assets for which there is an operating lease (broken down by class of underlying asset), please refer to Note 38 “Lessor relationships.”

A potential need to impair the assets was reviewed in an ad hoc impairment test at the Romania – Fixed-network and Romania – Mobile communications cash-generating units in the Europe operating segment as of December 31, 2019. These impairment tests were triggered by the units’ earnings from operations falling short of expectations as well as more pessimistic assessments of business development for the coming years. No goodwill was allocated to the Romania – Fixed-network and Romania – Mobile communications cash-generating units as of December 31, 2019.

The measurement of the Romania – Fixed network and Romania – Mobile communications cash-generating units as of December 31, 2019 was founded on projections for a ten-year projection period that is based on the financial plan that has been approved by management and is also used for internal purposes. The planning horizon selected reflects the assumptions for short- to medium-term market developments and is selected to achieve a steady state in the entities’ business outlook that is necessary for calculating the perpetual annuity. This steady state can only be established based on this planning horizon, 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 the rights of spectrum use. Cash flows beyond the internal mid-term planning are extrapolated using appropriate growth rates defined separately for each cash-generating unit. Growth rates of 2.0 percent were set for the cash-generating units Romania – Fixed network and Romania – Mobile communications and were based on the real growth and inflation expected in the long term. The key assumptions on which management has based its determination of the recoverable amount include the following assumptions that were primarily derived from internal sources and are based on past experience and extended to include 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 market and country risks associated with the cash-generating unit. The discount rates were 7.71 percent for the Romania – Fixed network cash-generating unit and 7.96 percent for the Romania – Mobile communications cash-generating unit.

The recoverable amount determined internally, which was calculated in accordance with IFRS 13 using unobservable input parameters (Level 3) amounted (before deduction of net debt) to EUR 176 million for the Romania – Fixed network cash-generating unit and to EUR 299 million for the Romania – Mobile communications cash-generating unit. The resulting need for impairment in 2019 was EUR 298 million for Romania – Fixed network and EUR 22 million for Romania – Mobile communications and, as a rule, had to be allocated to non-current assets. Taking into account existing lower value limits (fair value less costs of disposal of the relevant assets), impairment losses of EUR 296 million were recognized on property, plant and equipment in the area of technical equipment and machinery and EUR 24 million on intangible assets.

Deutsche Telekom had commitments for the acquisition of property, plant and equipment in the amount of EUR 4.4 billion as of the reporting date (December 31, 2018: EUR 3.8 billion). Restoration obligations of EUR 0.2 billion were recognized as of December 31, 2019 (December 31, 2018: 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**

As a consequence of the first-time application of IFRS 16 as of January 1, 2019, the rights to use the underlying lease assets were recognized in the amount of the lease liability, adjusted by the amount of the prepaid or accrued lease payments. The remeasurement and reclassification effect reported amounted to EUR 16.2 billion as of January 1, 2019. This includes both rights to use lease assets recognized in the statement of financial position for the first time and rights to use assets arising from finance leases in the amount of EUR 2.5 billion that were previously disclosed under property, plant and equipment.

For further information on the application of the new accounting standard, please refer to the section "Initial application of standards, interpretations, and amendments."

In the reporting year, additions of EUR 5.5 billion relate to leases concluded in the reporting year for network technology and cell sites in the United States operating segment. Effects of changes in the composition of the Group of EUR 0.2 billion arising from the acquisition of Tele2 Netherlands, and positive exchange rate effects of EUR 0.2 billion, primarily from the translation of U.S. dollars into euros, increased the carrying amount. Depreciation and amortization totaling EUR 3.6 billion and disposals of EUR 0.4 billion had an offsetting effect.

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. The right-of-use assets for land and equivalent rights, and buildings including buildings on land owned by third parties include the right-of-use assets related to data centers with a carrying amount of EUR 103 million. The corresponding depreciation amounted to EUR 18 million in the reporting year. In addition, the right-of-use assets for technical equipment and machinery also include the right-of-use assets related to data centers with a carrying amount of EUR 17 million. The corresponding depreciation amounted to EUR 5 million in the reporting year.

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 2019 financial year.

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, 2019	Dec. 31, 2018
Costs of obtaining a contract	2,059	1,726
Costs to fulfill a contract	15	18
	2,075	**1,744**

As of December 31, 2019, the carrying amount of capitalized contract costs stood at EUR 2.1 billion and was thus EUR 0.3 billion higher than at the end of the prior year. This increase is attributable in particular to a higher level of capitalized costs of obtaining a contract in postpaid customer business in the United States operating segment as of the end of the reporting year. The costs of obtaining a contract primarily contained sales commissions paid to third-party retailers in the direct and indirect sales channel and to employees. Overall, capitalized contract costs of EUR 1,388 million (2018: EUR 976 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, 2019 %	Dec. 31, 2018 %	Dec. 31, 2019 %	Dec. 31, 2018 %		Dec. 31, 2019 millions of €	Dec. 31, 2018 millions of €
Hrvatske telekomunikacije d.d. Mostar, Mostar, Bosnia-Herzegovina[a]	39.10	39.10	39.10	39.10	Europe	31	37
Stratospheric Platforms Ltd., Isle of Man, United Kingdom[b]	33.59	n.a.	33.59	n.a.	Group Development	n.a.	n.a.
T-Mobile USA Tower LLC, Wilmington, United States[c]	100.00	100.00	100.00	100.00	United States	n.a.	n.a.
T-Mobile West Tower LLC, Wilmington, United States[c]	100.00	100.00	100.00	100.00	United States	n.a.	n.a.
Ströer SE & Co. KGaA, Cologne, Germany[d]	0.00	11.42	0.00	11.42	Group Development	n.a.	270

[a] Indirect shareholding via Hrvatski Telekom d.d., Croatia (Deutsche Telekom AG's share: 51.42 percent).

[b] The shareholding has been included in Deutsche Telekom's consolidated financial statements using the equity method since the beginning of the 2019 financial year.

[c] Indirect shareholding via T-Mobile US, Inc., United States (Deutsche Telekom AG's share: 63.34 percent).

[d] Transfer of 11.34 percent of the shares in Ströer SE & Co. KGaA to Deutsche Telekom Trust e.V. as plan assets to cover existing pension obligations with effect from August 14, 2019. For further information, please refer to the section "Summary of accounting policies" – "Changes in the composition of the Group and other transactions."

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-percent 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 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 percent 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, 2019/ 2019	Dec. 31, 2018/ 2018	**Dec. 31, 2019/ 2019**	Dec. 31, 2018/ 2018
Current assets	45	37	16	n.a.
Of which: cash and cash equivalents	11	15	16	n.a.
Non-current assets	175	158	4	n.a.
Current liabilities	29	23	1	n.a.
Non-current liabilities	21	3	0	n.a.
Net revenue	40	43	0	n.a.
Profit (loss)	0	0	(17)	n.a.
Other comprehensive income	0	0	0	n.a.
Total comprehensive income	0	0	(17)	n.a.
Depreciation, amortization and impairment losses	(11)	(12)	0	n.a.
Dividends paid to Deutsche Telekom	0	0	0	n.a.

[a] As financial data of Stratospheric Platforms Ltd. as of December 31, 2019 was not yet available to Deutsche Telekom at the date of preparation, the company's annual financial statements as of December 31, 2018 were used as a basis for the summarized financial information.

millions of €

	T-Mobile USA Tower LLC		T-Mobile West Tower LLC	
	Dec. 31, 2019/ 2019	Dec. 31, 2018/ 2018	**Dec. 31, 2019/ 2019**	Dec. 31, 2018/ 2018
Current assets	0	0	0	0
Non-current assets	118	62	160	95
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]	
	2019	2018	2019	2018
NET ASSETS AS OF JANUARY 1	169	168	9	n.a.
Profit (loss)	0	0	(17)	n.a.
Other comprehensive income	0	0	0	n.a.
Share-based payment	0	0	0	n.a.
Change in interest without loss of control	0	0	0	n.a.
Dividends paid	0	0	0	n.a.
Capital increase	0	0	28	n.a.
Obligation to acquire own equity instruments	0	0		n.a.
Exchange rate effects	1	1	0	n.a.
NET ASSETS AS OF DECEMBER 31[b]	170	169	20	n.a.
SHARE OF NET ASSETS ATTRIBUTABLE TO DEUTSCHE TELEKOM AS OF DECEMBER 31[b]	66	66	6	n.a.
Goodwill – equity method	0	0	60	n.a.
Reversal of impairment losses	0	0	0	n.a.
Other reconciliation effects	(15)	(15)	0	n.a.
CARRYING AMOUNT AS OF DECEMBER 31	51	51	66	n.a.

[a] As financial data of Stratospheric Platforms Ltd. as of December 31, 2019 was not yet available to Deutsche Telekom at the date of preparation, the company's annual financial statements as of December 31, 2018 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, 2019 were estimated and are included under other reconciliation effects.

[b] The figures for net assets and the share of the net assets of Stratospheric Platforms Ltd. relate to December 31, 2018.

millions of €

	T-Mobile USA Tower LLC		T-Mobile West Tower LLC	
	2019	2018	2019	2018
NET ASSETS AS OF JANUARY 1	62	60	95	91
Profit (loss)	54	0	63	0
Other comprehensive income	0	0	0	0
Dividends paid	0	0	0	0
Exchange rate effects	2	2	2	4
NET ASSETS AS OF DECEMBER 31	118	62	160	95
SHARE OF NET ASSETS ATTRIBUTABLE TO DEUTSCHE TELEKOM AS OF DECEMBER 31	118	62	160	95
Adjustment of carrying amount	0	0	0	0
Other reconciliation effects	0	0	0	0
CARRYING AMOUNT AS OF DECEMBER 31	118	62	160	95

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, 2019/2019	Dec. 31, 2018/2018	Dec. 31, 2019/2019	Dec. 31, 2018/2018
Total carrying amounts	12	13	83	47
Total share in profit (loss)	(7)	2	(9)	3
Other comprehensive income	0	0	0	0
TOTAL COMPREHENSIVE INCOME	(7)	2	(9)	3

11 OTHER FINANCIAL ASSETS

millions of €

	Dec. 31, 2019		Dec. 31, 2018	
	Total	Of which: current	Total	Of which: current
Originated loans and receivables	3,133	2,661	3,133	2,684
Other receivables – publicly funded projects	1,350	476	0	0
Derivative financial assets	2,333	88	870	151
Equity instruments – measured at fair value through profit or loss	22	22	0	0
Equity instruments – measured at fair value through other comprehensive income	293	0	324	0
Debt instruments – measured at fair value through profit or loss	115	6	95	6
Other	4	1	10	6
	7,250	**3,254**	**4,432**	**2,847**

Current and non-current other financial assets increased by EUR 2.8 billion compared with December 31, 2018 to EUR 7.3 billion. The carrying amount of other financial assets increased in connection with positive effects from the measurement of embedded derivatives at T-Mobile US of EUR 0.5 billion and with the recording of cash collateral of EUR 0.6 billion in connection with forward-payer swaps concluded for future borrowings at T-Mobile US. Furthermore, grants receivable from publicly funded projects for the broadband build-out in Germany, which as a result of the change in estimate since the start of the third quarter are to be recognized as other financial assets upon conclusion of the agreement, also increased the carrying amount by EUR 1.3 billion.

Receivables of EUR 565 million (December 31, 2018: EUR 299 million) were used in connection with collateral agreements as surety for potential credit risks arising from derivative transactions in connection with the forward-payer swaps described above. In addition, cash collateral of EUR 70 million was provided in connection with a spectrum auction.

For further information on the change in estimate, please refer to the section “Changes in accounting policies, changes in estimates.”

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

Current and non-current other assets decreased by EUR 0.1 billion to EUR 2.1 billion. As of December 31, 2018, other assets mainly included rental and lease advance payments and further deferred expenses of EUR 1.8 billion. The advance payments arising from operating leases in accordance with IAS 17 included as of December 31, 2018 (EUR 0.2 billion) were offset against the right-of-use assets upon the transition to IFRS 16 as of January 1, 2019. As of December 31, 2019, 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 1.7 billion.

For further information on the application of the new accounting standard, please refer to the section “Initial application of standards, interpretations, and amendments.”

13 FINANCIAL LIABILITIES AND LEASE LIABILITIES

The following table shows the composition and maturity structure of **financial liabilities** as of December 31, 2019:

millions of €

	Dec. 31, 2019				Dec. 31, 2018			
	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	51,644	4,176	17,536	29,931	49,033	4,432	16,957	27,644
Liabilities to banks	6,516	2,690	2,656	1,170	5,710	2,103	2,588	1,019
Of which: promissory notes	722	0	188	534	744	0	287	457
Of which: loans from the European Investment Bank	2,981	173	2,351	457	3,141	582	2,159	400
Of which: other loans	2,813	2,517	117	179	1,825	1,521	142	162
	58,160	**6,866**	**20,192**	**31,102**	**54,743**	**6,535**	**19,545**	**28,663**
Finance lease liabilities[a]	n.a.	n.a.	n.a.	n.a.	2,471	849	1,146	476
Liabilities to non-banks from promissory note bonds	699	200	53	446	497	156	53	288
Liabilities with the right of creditors to priority repayment in the event of default	0				0			
Other interest-bearing liabilities	4,369	1,959	1,113	1,298	1,878	1,078	602	198
Other non-interest-bearing liabilities	1,476	1,332	136	8	1,609	1,474	129	6
Derivative financial liabilities	1,645	1,105	115	425	1,077	436	144	497
	8,189	**4,596**	**1,417**	**2,177**	**7,532**	**3,993**	**2,074**	**1,465**
FINANCIAL LIABILITIES	**66,349**	**11,463**	**21,609**	**33,279**	**62,275**	**10,527**	**21,619**	**30,128**
LEASE LIABILITIES	**19,835**	**3,987**	**10,250**	**5,599**	**n.a.**	**n.a.**	**n.a.**	**n.a.**

[a] Financial liabilities included finance lease liabilities in accordance with IAS 17 for the last time as of December 31, 2018.

Current and non-current financial liabilities increased by EUR 4.1 billion to EUR 66.3 billion compared with the prior year. Exchange rate effects, in particular from the translation of U.S. dollars into euros, raised the carrying amount by EUR 0.2 billion.

Bonds and other securitized liabilities increased by EUR 2.6 billion. This increase resulted in particular from the following bond issuances by Deutsche Telekom AG in the reporting year: euro bonds with a total volume of EUR 4.5 billion, pound sterling bonds with a total volume of GBP 0.4 billion (EUR 0.5 billion), U.S. dollar bonds of USD 0.1 billion (EUR 0.1 billion), and Australian dollar bonds of AUD 0.1 billion (EUR 0.1 billion). In addition, OTE PLC issued a euro bond with a volume of EUR 0.4 billion. Scheduled repayments of U.S. dollar bonds totaling USD 1.8 billion (EUR 1.6 billion), euro bonds totaling EUR 0.8 billion, and pound sterling bonds totaling GBP 0.3 billion (EUR 0.3 billion), had an offsetting effect. The net change of EUR 0.5 billion in commercial paper also decreased the carrying amount.

The increase of EUR 0.8 billion in liabilities to banks was mainly due to the positive net change of EUR 0.8 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.

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

The first-time application of IFRS 16 resulted in finance lease liabilities being reclassified from financial liabilities to lease liabilities. Based on the carrying amounts as of December 31, 2018, this reclassification reduced financial liabilities by EUR 2.5 billion.

For further information on the application of the new accounting standard, please refer to the section "Initial application of standards, interpretations, and amendments."

The increase of EUR 2.5 billion in the carrying amount of other interest-bearing liabilities primarily relates to the spectrum licenses acquired in the Germany operating segment for EUR 2.2 billion. In place of a lump-sum payment, government representatives agreed to let us pay the purchase price in annual installments from 2019 through 2030. After deducting collateral of EUR 36 million and the first, already paid installment of EUR 0.1 billion, the resulting financial liabilities had a carrying amount of EUR 2.0 billion. Payment by installment was granted on the condition that Deutsche Telekom assumes additional build-out obligations.

The carrying amount of derivative financial liabilities increased by EUR 0.6 billion. The measurement of forward-payer swaps concluded for future borrowings at T-Mobile US with a total volume of USD 9.6 billion gave rise to a remeasurement loss recognized directly in equity of EUR 0.6 billion.

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.

In addition to the reported liabilities to banks, Deutsche Telekom had standardized bilateral credit agreements with 21 banks for a total of EUR 12.6 billion as of December 31, 2019. As of December 31, 2019, a transaction of EUR 0.6 billion was temporarily deducted from a credit line. In the prior year, EUR 0.6 billion of these credit lines had been utilized. 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.

The first-time application of IFRS 16 led to the recognition of **current and non-current lease liabilities** totaling EUR 18.1 billion. These also included the finance lease liabilities that used to be reported under financial liabilities.

For further information on the application of the new accounting standard, please refer to the section "Initial application of standards, interpretations, and amendments."

The carrying amount of the recognized lease liabilities increased to EUR 19.8 billion as of December 31, 2019. Lease liabilities primarily relate to the United States, Europe, and Group Development operating segments. In addition, there are lease liabilities in the Group Headquarters & Group Services segment in connection with the leasing of real estate and technical sites.

For further information on lessee relationships, please refer to Note 8 "Right of use assets – lessee relationships."

In the 2019 financial year, there were no significant expenses for variable lease payments that were not included in the measurement of lease liabilities. All cash outflows in connection with leases amounted to EUR 4.7 billion in the 2019 financial year.

As of December 31, 2019, 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 0.3 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 amounts Dec. 31, 2019	Cash flows in 2020 Fixed interest rate	Cash flows in 2020 Variable interest rate	Cash flows in 2020 Repayment	Cash flows in 2021 Fixed interest rate	Cash flows in 2021 Variable interest rate	Cash flows in 2021 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	(58,859)	(1,069)	(1)	(4,696)	(1,778)	0	(5,152)
Other interest-bearing liabilities	(4,369)	(19)	(3)	(1,959)	(27)	(1)	(779)
Other non-interest-bearing liabilities	(1,476)			(1,332)			(125)
LEASE LIABILITIES	(19,835)	(669)		(4,087)	(552)		(3,611)
DERIVATIVE FINANCIAL LIABILITIES AND ASSETS							
Derivative financial liabilities:							
Currency derivatives without a hedging relationship	(59)			(68)			(1)
Currency derivatives in connection with cash flow hedges	(4)			(3)			0
Embedded derivatives without a hedging relationship	(146)			(9)			(8)
Other derivatives without a hedging relationship	(7)			0			0
Interest rate derivatives without a hedging relationship	(112)	(148)	140	0	(101)	64	0
Interest rate derivatives in connection with fair value hedges	(65)	97	(81)	0	97	(75)	0
Interest rate derivatives in connection with cash flow hedges	(1,249)	(206)	179	(1,120)	(206)	179	0
Derivative financial assets:							
Currency derivatives without a hedging relationship	49			46			0
Currency derivatives in connection with cash flow hedges	5			2			0
Embedded derivatives without a hedging relationship	0			0			0
Other derivatives without a hedging relationship	3			2			1
Interest rate derivatives without a hedging relationship	212	22	(48)	0	13	(45)	0
Interest rate derivatives in connection with fair value hedges	1,153	503	(247)	0	486	(257)	0
Interest rate derivatives in connection with cash flow hedges	281	(31)	99	0	15	49	0

millions of €	Cash flows in 2022-2024			Cash flows in 2025-2029			Cash flows in 2030 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	(4,549)	(1)	(14,912)	(4,480)	0	(20,408)	(2,655)	0	(11,486)
Other interest-bearing liabilities	(62)		(334)	(58)		(1,118)	(23)		(179)
Other non-interest-bearing liabilities			(11)			(1)			(7)
LEASE LIABILITIES	(951)		(6,707)	(437)		(4,933)	(87)		(598)
DERIVATIVE FINANCIAL LIABILITIES AND ASSETS									
Derivative financial liabilities:									
Currency derivatives without a hedging relationship			0			0			0
Currency derivatives in connection with cash flow hedges			0			0			0
Embedded derivatives without a hedging relationship			(32)			(78)			(84)
Other derivatives without a hedging relationship			(9)			0			0
Interest rate derivatives without a hedging relationship	(55)	(5)	2	5	40	(67)	0	93	73
Interest rate derivatives in connection with fair value hedges	215	(141)	(3)	269	(157)	(13)	208	(114)	(7)
Interest rate derivatives in connection with cash flow hedges	(530)	338	0	(111)	92	0	(11)	0	22
Derivative financial assets:									
Currency derivatives without a hedging relationship			0			0			0
Currency derivatives in connection with cash flow hedges			0			0			0
Embedded derivatives without a hedging relationship			0			0			0
Other derivatives without a hedging relationship			2			0			0
Interest rate derivatives without a hedging relationship	38	(89)	79	40	39	69	27	127	72
Interest rate derivatives in connection with fair value hedges	1,360	(706)	0	1,713	(971)	12	1,170	(780)	20
Interest rate derivatives in connection with cash flow hedges	157	1	52	219	2	7	(24)	0	293

millions of €	Carrying amounts	Cash flows in				
	Dec. 31, 2018	2019	2020	2021–2023	2024–2028	2029 and thereafter
NON-DERIVATIVE FINANCIAL LIABILITIES						
Bonds, other securitized liabilities, liabilities to banks and liabilities to non-banks from promissory notes and similar liabilities	(55,240)	(5,395)	(7,701)	(19,443)	(25,070)	(10,170)
Finance lease liabilities[a]	(2,471)	(954)	(657)	(659)	(523)	(157)
Liabilities with the right of creditors to priority repayment in the event of default	0	0	0	0	0	0
Other interest-bearing liabilities	(1,878)	(1,115)	(389)	(275)	(136)	(121)
Other non-interest-bearing liabilities	(1,609)	(1,474)	(50)	(79)	(1)	(5)
DERIVATIVE FINANCIAL LIABILITIES AND ASSETS						
Derivative financial liabilities:						
Currency derivatives without a hedging relationship	(36)	(36)	0	0	0	0
Currency derivatives in connection with cash flow hedges	(3)	(1)	0	0	0	0
Currency derivatives in connection with net investment hedges	0	0	0	0	0	0
Embedded derivatives without a hedging relationship	(52)	(6)	(7)	(18)	(19)	(9)
Other derivatives without a hedging relationship	(12)	0	0	(11)	0	0
Interest rate derivatives without a hedging relationship	(143)	(5)	9	2	22	195
Interest rate derivatives in connection with fair value hedges	(350)	(65)	(65)	(142)	(192)	(89)
Interest rate derivatives in connection with cash flow hedges	(482)	(404)	41	136	207	252
Derivative financial assets:						
Currency derivatives without a hedging relationship	24	13	0	0	0	0
Currency derivatives in connection with cash flow hedges	2	2	0	0	0	0
Embedded derivatives without a hedging relationship	12			4	5	16
Other derivatives without a hedging relationship	2	2	0	1	0	0
Interest rate derivatives without a hedging relationship	460	108	(6)	(4)	66	246
Interest rate derivatives in connection with fair value hedges	267	133	123	283	236	39
Interest rate derivatives in connection with cash flow hedges	8	8	8	8	8	8

[a] Financial liabilities included finance lease liabilities in accordance with IAS 17 for the last time as of December 31, 2018.

All instruments held at December 31, 2019 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, 2019. 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, 2019, this figure was a nominal EUR 0.5 billion (December 31, 2018: EUR 1.8 billion).

14 TRADE AND OTHER PAYABLES

millions of €	Dec. 31, 2019	Dec. 31, 2018
Trade payables	9,410	10,699
Other liabilities	21	36
	9,431	**10,735**

Trade and other payables decreased by EUR 1.3 billion compared with the prior year to EUR 9.4 billion. The reduction in liabilities in the United States, Europe, and Germany operating segments contributed to this decrease. Exchange rate effects from the translation from U.S. dollars into euros had an increasing effect.

Of the total of trade and other payables, EUR 9,410 million (December 31, 2018: EUR 10,735 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, Greece, and Switzerland. Deutsche Telekom's pension obligations are as follows:

millions of €	Dec. 31, 2019	Dec. 31, 2018
DEFINED BENEFIT LIABILITY	**5,831**	**5,502**
Defined benefit asset	(21)	(11)
NET DEFINED LIABILITY (ASSET)	**5,810**	**5,491**
Of which: provisions for direct commitments	5,775	5,434
Of which: provisions for indirect commitments	35	57

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 year-on-year increase in provisions for pensions was mainly due to interest rate adjustments and the decline in the price of the BT share transferred to plan assets. An offsetting effect was generated by the transfer on August 14, 2019 of the stake in Ströer SE & Co. KGaA to Deutsche Telekom Trust e.V. (CTA) as plan assets.

Calculation of net defined benefit liabilities/assets

millions of €	Dec. 31, 2019	Dec. 31, 2018
Present value of the obligations fully or partially funded by plan assets	9,045	8,577
Plan assets at fair value	(6,489)	(6,099)
DEFINED BENEFIT OBLIGATIONS IN EXCESS OF PLAN ASSETS	**2,556**	**2,478**
Present value of the unfunded obligations	3,245	3,013
DEFINED BENEFIT LIABILITY (ASSET) ACCORDING TO IAS 19.63	**5,801**	**5,491**
Effect of asset ceiling (according to IAS 19.64)	9	0
NET DEFINED LIABILITY (ASSET)	**5,810**	**5,491**

millions of €	2019	2018
NET DEFINED BENEFIT LIABILITY (ASSET) AS OF JANUARY 1	**5,491**	**8,360**
Service cost	245	217
Net interest expense (income) on the net defined benefit liability (asset)	87	96
Remeasurement effects	603	(127)
Pension benefits paid directly by the employer	(155)	(212)
Employer contributions to plan assets	(449)	(2,852)
Changes attributable to business combinations/transfers of operation/acquisitions and disposals	(12)	9
Administration costs actually incurred (paid from plan assets)	0	0
Exchange rate fluctuations for plans in foreign currency	0	0
NET DEFINED BENEFIT LIABILITY (ASSET) AS OF DECEMBER 31	**5,810**	**5,491**

Key assumptions for the measurement of the defined benefit obligations are the discount rate, the salary increase rate, the pension increase rate, and longevity. 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 following figures for the plans in Switzerland relate to T-Systems Schweiz AG and T-Systems Data Migration Consulting AG.

Assumptions for the measurement of defined benefit obligations as of December 31

%		2019	2018	2017
Discount rate	Germany	1.14	1.60	1.61
	Switzerland	0.29	0.82	0.64
	Greece (OTE S.A.)	1.09[a]/0.62[b]	1.60[a]/1.08[b]	1.66[a]/0.92[b]
Salary increase rate	Germany	2.50	2.50	2.40
	Switzerland	1.00	1.00	1.00
	Greece (OTE S.A.)	1.00	1.00[c]	1.00[d]
Pension increase rate	Germany (general)	1.50	1.50	1.50
	Germany (according to articles of association)	1.00	1.00	1.00
	Switzerland	0.10	0.10	0.10
	Greece (OTE S.A.)	n.a.	n.a.	n.a.

[a] The discount rate relates to the plan for staff retirement indemnities (please refer to the section “Global Pension Policy and description of the plans” below).
[b] The discount rate relates to the plan for youth accounts (please refer to the section “Global Pension Policy and description of the plans” below).
[c] The following assumptions were made in 2018 concerning the development of salaries: 2019: 0.52 percent. An increase of 1.00 percent is assumed for the years from 2020 onward.
[d] The following assumptions were made in 2017 concerning the development of salaries in subsequent years: 2018: 1.00 percent, 2019: 0.00 percent. An increase of 1.00 percent is assumed for the years from 2020 onward.

years		Dec. 31, 2019	Dec. 31, 2018
Duration	Germany	12.7	12.7
	Switzerland	15.9	16.2
	Greece (OTE S.A.)	12.6[a]/5.7[b]	12.4[a]/6.1[b]

[a] The duration relates to the plan for staff retirement indemnities (please refer to the section “Global Pension Policy and description of the plans” below).
[b] The duration relates to the plan for youth accounts (please refer to the section “Global Pension Policy and description of the plans” below).

The following biometric assumptions were essential for the measurement of pension obligations:

Germany: Heubeck 2018G, Switzerland: BVG 2015 Generational, Greece (OTE S.A.): EVK2000. Based on the observation of rising life expectancy and the falling probability of invalidity in Germany, the life expectancy tables published by Heubeck were revised in 2018. This resulted in losses of EUR 66 million or 0.6 percent of the German obligations in 2018.

The aforementioned discount rates were used as of December 31, 2019 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 European 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 result 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.

The Group's pension obligations are 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), and 0.07 percentage points lower in Switzerland. 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 €

	2019	2018
DEFINED BENEFIT OBLIGATIONS AS OF JANUARY 1	**11,590**	**11,462**
Current service cost	250	257
Interest cost	186	184
Remeasurement effects	656	51
Of which: experience-based adjustments	0	11
Of which: adjusted financial assumptions	664	(16)
Of which: adjusted demographic assumptions	(8)	57
Total benefits actually paid	(397)	(343)
Contributions by plan participants	4	4
Changes attributable to business combinations/transfers of operation/acquisitions and disposals	(12)	9
Past service cost (due to plan amendments/curtailments)[a]	(8)	(42)
Settlements	3	3
Taxes to be paid as part of pensions	0	0
Exchange rate fluctuations for plans in foreign currency	18	6
DEFINED BENEFIT OBLIGATIONS AS OF DECEMBER 31	**12,290**	**11,590**
Of which: active plan participants	5,576	5,349
Of which: plan participants with vested pension rights who left the Group	2,448	2,230
Of which: benefit recipients	4,266	4,011

[a] The past service cost due to plan amendments in 2018 relates primarily to the collective agreement concluded at OTE S.A. on March 22, 2018 (please refer to the section "Global Pension Policy and description of the plans" below).

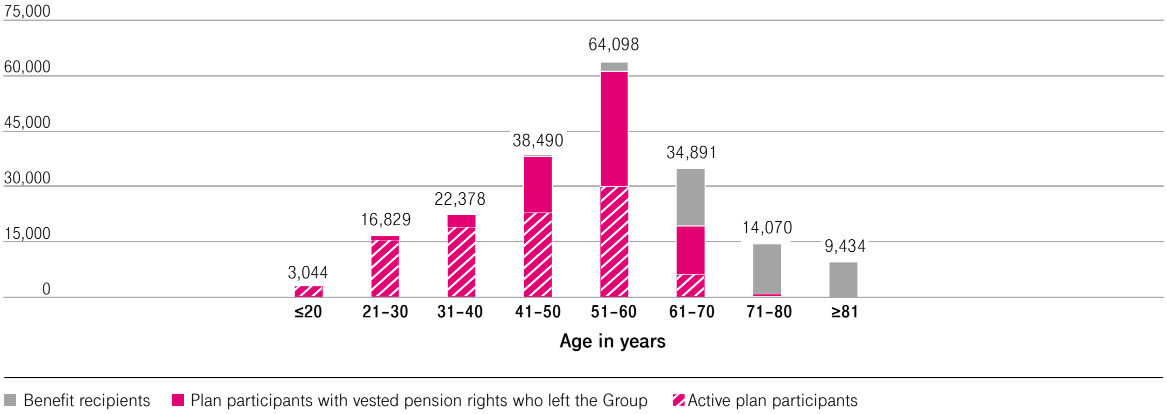
Distribution of obligations relating to Deutsche Telekom's most significant plans as of December 31, 2019 and December 31, 2018

millions of €

	Dec. 31, 2019				Dec. 31, 2018			
	Germany	Switzerland	Greece (OTE S.A.)	Other plans	Germany	Switzerland	Greece (OTE S.A.)	Other plans
Defined benefit obligations	11,530	221	196	343	10,874	220	198	298
Plan assets at fair value	(6,007)	(230)	0	(252)	(5,682)	(208)	0	(209)
Effect of asset ceiling	0	9	0	0	0	0	0	0
NET DEFINED LIABILITY (ASSET)	**5,524**	**0**	**196**	**90**	**5,192**	**12**	**198**	**89**

The following analyses in terms of age structure and sensitivity analysis, as well as descriptions of plans and the risks associated with them, relate to the relevant pension obligations (Germany, Switzerland, and Greece (OTE S.A.)).

Age structure of plan participants in the most significant pension plans[a]



[a] Figures relating to Greece (OTE S.A.) include the staff retirement indemnities plan only.

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, 2019. 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, 2019 as follows:

millions of €

	Increase (decrease) of the defined benefit obligations as of Dec. 31, 2019			Increase (decrease) of the defined benefit obligations as of Dec. 31, 2018		
	Germany	Switzerland	Greece (OTE S.A.)	Germany	Switzerland	Greece (OTE S.A.)
Increase of discount rate by 100 basis points	(1,284)	(25)	(19)	(1,203)	(18)	(19)
Decrease of discount rate by 100 basis points	1,566	32	22	1,465	25	22
Increase of salary increase rate by 50 basis points	6	1	7	6	3	7
Decrease of salary increase rate by 50 basis points	(5)	(1)	(7)	(6)	(3)	(7)
Increase of pension increase rate by 25 basis points	5	5	0	5	6	0
Decrease of pension increase rate by 25 basis points	(5)	(2)	0	(5)	(2)	0
Life expectancy increase by 1 year	305	5	0	279	5	0
Life expectancy decrease by 1 year	(296)	(5)	0	(274)	(5)	0

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 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.

As of the end of 2018, all existing obligations processed via the Deutsche Telekom Betriebsrenten-Service e.V. (DTBS) special pension fund (current pensions) were transferred to direct commitments and the Telekom Pension Fund (TPF). A new asset segment was set up in the TPF for these obligations. Part of the plan assets from DTBS were transferred to the CTA, and part to the new asset segment of the TPF as an initial allocation. To increase the funding rate of the German obligations in the Deutsche Telekom Group, the stake in BT was transferred to Deutsche Telekom Trust e.V. as plan assets in 2018 and the stake in Ströer was transferred to the latter as plan assets in 2019.

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 percent 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 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, a corporate special pension fund (Unterstützungskasse) (until 2018), and a corporate pension fund (from 2018).

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. Following a restructuring of the Swiss companies and harmonization of the pension fund commitments as of January 1, 2014, T-Systems Data Migration Consulting AG has also been included in T-Systems Schweiz AG's pension fund. As is often the case in Switzerland, both 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 (2019: 1.00 percent, 2020: 1.00 percent).

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.

In **Greece (OTE S.A.),** mandatory staff retirement indemnities are due in cases of premature termination by the employer and, to a lesser extent, upon retirement by the employee. These are paid out in the form of a lump sum and can amount to several times the employee's last monthly pay (including cap), depending on the employee's length of service. Due to a change in the law in 2012, the lump sum was capped at a maximum of twelve monthly salaries. The company also makes a voluntary top-up payment. Under the collective agreement concluded on March 22, 2018, employees are assigned to one of three pension commitments based on the date they joined the company (100 percent of the statutory benefits plus nine or seven monthly salaries or plus 40 percent of the statutory benefits).

OTE S.A. is also obligated to make a one-time payment for the employees' children when they reach the age of 25 (youth accounts). The benefit plan, which had previously been based on the level of the employee's final monthly salary, was changed in November 2011 to a plan with a contribution-based promise financed by contributions by the employee and corresponding limited matching contributions by the employer.

The benefits granted by the staff retirement indemnities and youth account plans are paid out as a lump sum. For this reason there is no longevity risk.

Development of plan assets at fair value in the respective reporting year

millions of €

	2019	2018
PLAN ASSETS AT FAIR VALUE AS OF JANUARY 1	**6,099**	**3,102**
Changes attributable to business combinations/transfers of operation/acquisitions and disposals	0	0
Interest income on plan assets (calculated using the discount rate)	99	88
Amount by which the actual return exceeds (falls short of) the interest income on plan assets (remeasurement)	62	179
Contributions by employer	449	2,852
Contributions by plan participants	4	4
Benefits actually paid from plan assets	(241)	(132)
Settlements	0	0
Administration costs	0	0
Tax payments	0	0
Exchange rate fluctuations for plans in foreign currency	18	6
PLAN ASSETS AT FAIR VALUE AS OF DECEMBER 31	**6,489**	**6,099**

Contributions by employer included shares in BT in 2018 and shares in Ströer in 2019, which were paid into the corporate CTA, and, in an offsetting effect, a refund from the CTA to Deutsche Telekom in 2018 for benefit payments made by the employer.

Breakdown of plan assets at fair value by investment category

millions of €

	Dec. 31, 2019	Of which: price in an active market	Of which: price without an active market	Dec. 31, 2018	Of which: price in an active market	Of which: price without an active market
Equity securities	4,564	4,564	0	4,278	4,278	0
Of which: shares in BT	2,704	2,704	0	3,183	3,183	0
Debt securities	1,113	1,113	0	922	922	0
Real estate	64	64	0	66	66	0
Derivatives	0	0	0	0	0	0
Investment funds	11	11	0	156	156	0
Asset-backed securities	0	0	0	0	0	0
Structured debt instruments	350	350	0	437	437	0
Cash and cash equivalents	275	275	0	118	118	0
Other	112	70	42	122	84	38
PLAN ASSETS AT FAIR VALUE	**6,489**	**6,447**	**42**	**6,099**	**6,061**	**38**

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 3,706 thousand (December 31, 2018: EUR 3,168 thousand) and bonds amounting to EUR 6,688 thousand (December 31, 2018: EUR 2,974 thousand) issued by Deutsche Telekom AG and its subsidiaries.

Development of the effect of the asset ceiling

millions of €

	2019	2018
EFFECT OF ASSET CEILING AS OF JANUARY 1	**0**	**0**
Interest expense on asset ceiling (recognized in the income statement)	0	0
Changes in asset ceiling((gains) losses recognized in equity)	9	0
Currency gain (loss)	0	0
EFFECT OF ASSET CEILING AS OF DECEMBER 31	**9**	**0**

Breakdown of defined benefit costs in the income statement

millions of €

	Disclosure in income statement	2019	2018	2017
Current service cost	Personnel costs	250	257	265
Past service cost (due to plan amendments/curtailments)	Personnel costs	(8)	(42)	(7)
Settlements	Personnel costs	3	3	8
SERVICE COST		**245**	**217**	**266**
Interest cost	Other financial income (expense)	186	184	184
Interest income on plan assets (calculated using the discount rate)	Other financial income (expense)	(99)	(88)	(48)
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 (ASSETS)		**87**	**96**	**136**
DEFINED BENEFIT COST		**332**	**313**	**402**
Administration costs actually incurred (paid from plan assets)	Personnel costs	0	0	0
TOTAL AMOUNTS RECOGNIZED IN PROFIT OR LOSS		**332**	**313**	**402**

Amounts recognized in the consolidated statement of comprehensive income

millions of €

	2019	2018	2017
REMEASUREMENT ((GAIN) LOSS RECOGNIZED IN OTHER COMPREHENSIVE INCOME IN THE FINANCIAL YEAR)	**603**	**(127)**	**(116)**
Of which: remeasurement due to a change in defined benefit obligations	656	51	(11)
Of which: remeasurement due to a change in plan assets	(62)	(179)	(105)
Of which: remeasurement due to changes in the effect of asset ceiling (according to IAS 19.64)	9	0	0

Total benefit payments expected

millions of €

	2020	2021	2022	2023	2024
Benefits paid from pension provisions	116	231	230	254	269
Benefits paid from plan assets	259	226	241	241	261
TOTAL BENEFITS EXPECTED	**375**	**457**	**470**	**495**	**530**

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 2020, 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 11 million in 2020.

DEFINED CONTRIBUTION PLANS

The employer's contribution paid to the statutory pension scheme (Deutsche Rentenversicherung) in Germany in the 2019 financial year totaled EUR 0.4 billion (2018: EUR 0.4 billion; 2017: EUR 0.3 billion). Group-wide, EUR 145 million (2018: EUR 120 million, 2017: EUR 131 million) from current contributions for additional defined contribution plans was recognized in the consolidated income statement in 2019.

CIVIL-SERVANT RETIREMENT ARRANGEMENTS AT DEUTSCHE TELEKOM

An expense of EUR 405 million was recognized in the 2019 financial year (2018: EUR 441 million; 2017: EUR 458 million) for the annual contribution to the Civil Service Pension Fund, which generally amounts to 33 percent 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 2.1 billion as of the reporting date (December 31, 2018: EUR 2.5 billion, December 31, 2017: EUR 3.1 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, 2017	**166**	**2,657**	**1,591**	**326**	**706**	**1,080**	**6,527**
Of which: current	166	1,481	40	311	706	668	3,372
Transfer resulting from change in accounting standards	0	0	0	0	(46)	(22)	(68)
Changes in the composition of the Group	1	4	10	1	0	7	24
Currency translation adjustments	0	15	22	2	4	10	54
Addition	125	1,922	113	129	268	337	2,894
Use	(35)	(1,482)	(30)	(27)	(479)	(366)	(2,419)
Reversal	(3)	(74)	(101)	(144)	(4)	(177)	(503)
Interest effect	0	28	(16)	0	0	(2)	9
Other changes	0	(61)	(24)	1	6	(5)	(82)
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

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 2019, the discount rates ranged from 0.00 to 2.41 percent (2018: from 0.06 to 3.08 percent) in the euro currency area and from 2.60 to 4.35 percent (2018: from 3.87 to 6.21 percent) 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 109.0 million (December 31, 2018: EUR 102.7 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 111.7 million (December 31, 2018: EUR 107.3 million).

Provisions for termination benefits and other personnel provisions include provisions for staff restructuring. These provisions developed as follows in the 2019 financial year:

millions of €	Jan. 1, 2019	Addition	Use	Reversal	Other changes	Dec. 31, 2019
Severance and voluntary redundancy models	255	29	(122)	(3)	1	160
Phased retirement	608	584	(395)	0	(64)	733
	863	**614**	**(517)**	**(3)**	**(63)**	**893**
Of which: current	352					372

Other personnel provisions increased by EUR 0.4 billion. EUR 0.2 billion of this increase relates to the provisions recognized for the Civil Service Health Insurance Fund (Postbeamtenkrankenkasse – PBeaKK) and 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, subsidies for advertising expenses, and reimbursements. 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, 2019	Of which: current	Dec. 31, 2018	Of which: current
Early retirement	1,097	392	1,227	422
Deferred revenue	153	110	28	28
Liabilities from straight-line leases	0	0	2,232	0
Liabilities from other taxes	1,197	1,197	1,157	1,157
Other deferred revenue	316	142	616	358
Liabilities from severance payments	99	98	138	137
Liabilities – publicly funded projects	1,198	340	0	0
Miscellaneous other liabilities	762	571	683	552
	4,822	**2,850**	**6,081**	**2,654**

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. The decline in liabilities from straight-line leases is due to the first-time application of IFRS 16, under which liabilities from straight-line leases, primarily for cell sites in the United States operating segment, are no longer required to be reported. As of January 1, the lease terms underlying these liabilities were adjusted to the lease terms determined in accordance with IFRS 16, increasing shareholders' equity, and then the remaining prepaid expense was offset against the right-of-use asset. Due to the change in estimate implemented in the second half of 2019 in connection with the accounting treatment of contractual grants receivable from funding projects for the broadband build-out in Germany, EUR 1.2 billion was recognized for existing build-out obligations.

For further information on the first-time application of IFRS 16, please refer to the section "Initial application of standards, interpretations, and amendments."

For further information on the change in estimate, please refer to the section "Changes in accounting policies, changes in estimates."

18 CONTRACT LIABILITIES

The carrying amount of current and non-current contract liabilities decreased year-on-year by EUR 0.2 billion to EUR 2.1 billion. These mainly comprise deferred revenues. Revenue of EUR 1,277 million from contract liabilities that were still outstanding as of December 31, 2018 was realized in the reporting year. Of the total of contract liabilities, EUR 1,608 million (December 31, 2018: EUR 1,720 million) is due within one year.

19 SHAREHOLDERS' EQUITY

ISSUED CAPITAL

As of December 31, 2019, 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.

	2019		2018	
	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 percent of the voting rights was exceeded. The stake in Deutsche Telekom was thus 4.92 percent of the voting rights on September 15, 2017.

Treasury shares. The amount of capital stock assigned to treasury shares was approximately EUR 47 million at December 31, 2019. This equates to 0.4 percent of the capital stock. 18,524,848 treasury shares were held at December 31, 2019. 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 percent 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. 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, treasury shares (448 thousand in total) were reallocated and transferred to the custody accounts of eligible participants of the Share Matching Plan. As of December 31, 2019, disposals of treasury shares resulting from the transfers in the reporting period accounted for less than 0.01 percent, or EUR 1,148 thousand, of share capital. Gains on disposal arising from transfers of treasury shares amounted to EUR 6,030 thousand. In the reporting year, 238 thousand treasury shares with a fair value of EUR 3,578 thousand were billed to other Group companies. Transfers of treasury shares increased retained earnings by EUR 4,055 thousand and capital reserves by EUR 828 thousand.

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, 61 thousand previously deposited shares were reallocated for issue to eligible participants of the Share Matching Plan.

Voting rights. Each share entitles the holder to one vote. These voting rights are restricted, however, in relation to treasury shares (at December 31, 2019: around 19 million in total).

Authorized capital and contingent capital. Authorized capital and contingent capital comprised the following components as of December 31, 2019:

	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 €

	2019			2018		
	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**	**239**	**239**	**0**	**11**	**11**
Acquisition of Tele2 Netherlands	0	239	239	0	0	0
Other effects	0	0	0	0	11	11
Transactions with owners	**73**	**340**	**413**	**(625)**	**(764)**	**(1,389)**
Acquisition of Tele2 Netherlands	293	226	519	0	0	0
T-Mobile US share buy-back program	0	0	0	(245)	(613)	(858)
Capital restructuring, Romania	(51)	51	0	0	0	0
Acquisition of T-Mobile US shares	0	0	0	(72)	(90)	(162)
Acquisition of OTE shares	0	0	0	(150)	(135)	(285)
OTE share buy-back	(29)	(81)	(110)	(16)	(78)	(94)
Other effects	(140)	144	4	(142)	152	10

The amounts recognized in shareholders' equity as transactions with owners and as changes in the composition of the Group mainly relate to the acquisition consummated on January 2, 2019 of Tele2 Netherlands Holding N.V. by T-Mobile Netherlands Holding B.V. The transfer in this context of 25 percent of the shares in T-Mobile Netherlands (prior to the business combination) resulted in transactions with owners attributable to non-controlling interests of EUR 226 million.

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 (business combination achieved in stages) totaling EUR 0.4 billion (December 31, 2018: EUR 0.4 billion), currency translation effects of EUR 0.1 billion (December 31, 2018: EUR 0.0 billion), and an offsetting remeasurement loss recognized directly in equity in connection with forward-payer swaps concluded for future borrowings at T-Mobile US.

NOTES TO THE CONSOLIDATED INCOME STATEMENT

For information on special factors, please refer to the section "Development of business in the Group" in the combined management report.

20 NET REVENUE

Net revenue breaks down into the following revenue categories:

millions of €

	2019	2018[b]	2017[b]
Revenue from the rendering of services	**65,489**	**61,653**	**62,141**
Germany	17,445	17,657	18,382
United States	31,313	27,755	27,232
Europe	10,023	9,883	9,937
Systems Solutions	5,149	5,328	5,413
Group Development	1,487	967	1,067
Group Headquarters & Group Services	71	63	110
Revenue from the sale of goods and merchandise[a]	**12,960**	**12,443**	**11,079**
Germany	2,298	2,208	1,735
United States	8,569	8,170	7,714
Europe	1,556	1,588	1,236
Systems Solutions	143	154	90
Group Development	394	322	286
Group Headquarters & Group Services	0	0	18
Revenue from the use of entity assets by others	**2,081**	**1,561**	**1,727**
Germany	829	486	436
United States	536	596	789
Europe	229	51	45
Systems Solutions	88	15	0
Group Development	276	290	307
Group Headquarters & Group Services	124	123	150
NET REVENUE	**80,531**	**75,656**	**74,947**

[a] Revenue from the sale of goods and merchandise includes interest income of EUR 345 million in the reporting year, calculated using the effective interest method (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.

[b] 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 and of EUR 307 million in 2017 in the Group Development operating segment that had been reported under revenue from the rendering of services in the 2018 Annual Report.

Net revenue for the reporting year was EUR 80.5 billion, up EUR 4.9 billion on the prior-year level.

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 19,059 million (2018: EUR 18,323 million).

The portion of the outstanding 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 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 similar contracts.

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 66 million in the reporting year (2018: EUR 67 million, 2017: EUR 75 million).

21 OTHER OPERATING INCOME

millions of €	2019	2018	2017
Income from the reversal of impairment losses on non-current assets	7	8	1,665
Of which: IFRS 5	0	0	3
Income from the disposal of non-current assets	101	291	310
Income from reimbursements	144	164	197
Income from insurance compensation	122	335	71
Income from ancillary services	25	29	33
Miscellaneous other operating income	722	663	1,543
Of which: income from divestitures and from the sale of stakes accounted for using the equity method	145	0	763
	1,121	**1,491**	**3,819**

In 2017, income from the reversal of impairment losses on non-current assets mainly comprised the partial reversal during the year of impairment losses on spectrum licenses at T-Mobile US, which increased their carrying amount by EUR 1.7 billion. Income from the disposal of non-current assets was primarily attributable to the disposal of real estate previously classified as non-current assets and disposal groups held for sale. In 2018, income from insurance compensation mainly comprised compensation payments received by T-Mobile US for damage caused by hurricanes in 2017. Miscellaneous other operating income includes income of EUR 0.1 billion 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 percent stake in Ströer SE & Co. KGaA to Deutsche Telekom Trust e.V. as plan assets. In addition, other operating income includes a large number of individual items accounting for marginal amounts. The main items included here in 2017 were income of EUR 0.5 billion from the divestiture of Strato AG, income of EUR 0.2 billion from a payment received in connection with the settlement agreement concluded with BT in July 2017, and income of EUR 0.2 billion from the sale of the remaining shares in Scout24 AG, which had been accounted for using the equity method.

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 2.4 billion in the reporting year (2018: EUR 2.4 billion, 2017: EUR 2.3 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 €

	2019	2018	2017
Expenses for raw materials and supplies	1,679	1,711	1,960
Expenses for merchandise	15,532	15,031	14,618
Expenses for services purchased	19,746	21,418	21,583
	36,956	**38,160**	**38,161**

25 AVERAGE NUMBER OF EMPLOYEES AND PERSONNEL COSTS

		2019	2018	2017
GROUP (TOTAL)		**212,846**	**216,369**	**216,454**
Germany		96,018	100,227	103,174
International		116,827	116,142	113,280
Non-civil servants		200,174	202,010	200,673
Civil servants (domestic, active service relationship)		12,672	14,359	15,781
Trainees and students on cooperative degree courses		6,136	5,713	6,559
PERSONNEL COSTS	millions of €	**16,723**	**16,436**	**15,504**
Of which: wages and salaries	millions of €	13,655	13,507	12,552
Of which: social security contributions and pension benefit costs	millions of €	3,068	2,929	2,952

The average headcount decreased by 1.6 percent compared with the prior year. It decreased in Germany by 4.2 percent, 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 and Systems Solutions segments. By contrast, the average headcount outside Germany increased slightly by 0.6 percent. Here, the international share increased in all segments, with the exception of Europe, where the average international headcount decreased by 4.2 percent; in the Systems Solutions operating segment the increase was due to the first-time inclusion and expansion of a service unit in India. The total number of employees in the United States operating segment increased primarily due to ongoing growth in the business. The substantial increase in the Group Development operating segment is attributable to the inclusion of Tele2 Netherlands in the Netherlands.

Personnel costs increased by 1.7 percent year-on-year, primarily due to developments in the United States operating segment: the development in exchange rates on the one hand, and the increase in salaries and a slight growth in headcount on the other. The Group Development and Europe operating segments also recorded increases thanks to the acquisition of Tele2 Netherlands and UPC Austria, both of which were included for the full financial year for the first time. The three segments mentioned above also recorded an increase in costs for restructuring. In all other segments, lower headcounts resulted in reduced personnel costs, offset in part by salary increases agreed in the collective agreements concluded in 2018. These segments also saw slightly lower expenses for staff restructuring measures in 2019.

26 OTHER OPERATING EXPENSES

millions of €

	2019	2018	2017
Impairment losses on financial assets[a]	452	394	n.a.
Gains (losses) from the write-off of financial assets measured at amortized cost	42	120	n.a.
Other	2,807	2,620	3,444
Legal and audit fees	328	338	265
Losses from asset disposals	213	165	207
Income (losses) from the measurement of factoring receivables	129	126	112
Income (losses) from the measurement of receivables[a]	n.a.	n.a.	580
Other taxes	427	476	432
Cash and guarantee transaction costs	355	339	344
Insurance expenses	98	93	87
Miscellaneous other operating expenses	1,258	1,083	1,417
	3,301	**3,134**	**3,444**

[a] Due to the transition to IFRS 9 as of January 1, 2018, changes were made both to the method of measuring impairment losses on receivables and to their disclosure in the financial statements. A comparison with the prior period is possible to a limited extent only.

Miscellaneous other operating expenses comprise a large number of low-value individual items, including other administrative expenses and fees totaling EUR 176 million (2018: EUR 181 million, 2017: EUR 217 million).

27 DEPRECIATION, AMORTIZATION AND IMPAIRMENT LOSSES

The following table provides a breakdown of depreciation, amortization and impairment losses:

millions of €

	2019	2018	2017
AMORTIZATION AND IMPAIRMENT OF INTANGIBLE ASSETS	**4,806**	**5,021**	**6,193**
Of which: goodwill impairment losses	0	639	2,071
Of which: amortization of mobile licenses	1,080	1,049	1,038
Of which: impairment losses on mobile licenses	0	19	4
DEPRECIATION AND IMPAIRMENT OF PROPERTY, PLANT AND EQUIPMENT	**9,208**	**8,814**	**8,393**
Of which: impairment losses recognized on property, plant and equipment	319	38	81
DEPRECIATION OF RIGHT-OF-USE ASSETS[a]	**3,649**	**n.a.**	**n.a.**
	17,663	**13,836**	**14,586**

[a] The IFRS 16 “Leases” accounting standard has been applied since January 1, 2019. Prior-year comparatives were not adjusted. For further information, please refer to the section “Initial application of standards, interpretations, and amendments in the financial year.”

Impairment losses break down as follows:

millions of €

	2019	2018	2017
INTANGIBLE ASSETS	**74**	**685**	**2,077**
Of which: goodwill from the year-end impairment test	0	639	829
Of which: goodwill in connection with ad hoc impairment testing in the cash-generating unit in the Systems Solutions operating segment	n.a.	n.a.	1,242
Of which: in connection with ad hoc impairment test in the Romania cash-generating unit	24	n.a.	n.a.
Of which: FCC licenses	0	0	4
PROPERTY, PLANT AND EQUIPMENT	**319**	**38**	**81**
Of which: in connection with ad hoc impairment testing for Romania in the Romania cash-generating unit	296	0	0
Of which: from the year-end impairment test	0	0	37
	393	**722**	**2,158**

Depreciation, amortization and impairment losses on intangible assets, property, plant and equipment, and right-of-use assets increased by EUR 3.8 billion year-on-year to EUR 17.7 billion. Of this figure, EUR 3.6 billion was attributable to the depreciation charge on right-of-use assets required to be recognized for the first time in accordance with IFRS 16. In the prior-year period, expenses had been recognized in EBITDA in connection with operating leases. Depreciation of property, plant and equipment and amortization of intangible assets, which in the prior year had included depreciation and amortization on finance lease assets, were EUR 0.5 billion higher than in the prior year, mainly due to the consistently high investment volume in past years. Impairment losses decreased by EUR 0.3 billion compared with the prior year to EUR 0.4 billion in total. In 2019, these included impairment losses of EUR 0.3 billion in particular on property, plant and equipment in the Romania cash-generating unit in the Europe operating segment on account of the impairment test conducted at year-end. Impairment losses recognized in 2018 on goodwill in the Europe operating segment in the national companies in Poland and Romania amounted to EUR 0.6 billion in total. In addition, impairment losses amounting to EUR 35 million had been recognized on property, plant and equipment and intangible assets in 2018 in connection with the sale of the shares in Telekom Albania.

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 €	2019	2018	2017
Interest income	348	277	320
Interest expense	(2,712)	(2,094)	(2,517)
	(2,364)	**(1,817)**	**(2,197)**
Of which: from leases	(870)	n.a.	n.a.
Of which: from finance leases	n.a.	(131)	(133)
Of which: from financial instruments relating to measurement categories in accordance with IFRS 9			
Debt instruments measured at amortized cost	23	27	n.a.
Debt instruments measured at fair value through other comprehensive income	0	0	n.a.
Debt instruments measured at fair value through profit or loss	14	10	n.a.
Financial liabilities measured at amortized cost[a]	(2,011)	(1,707)	n.a.
Of which: from financial instruments relating to measurement categories in accordance with IAS 39			
Loans and receivables (LaR)	n.a.	n.a.	32
Held-to-maturity investments (HtM)	n.a.	n.a.	0
Available-for-sale financial assets (AfS)	n.a.	n.a.	15
Financial liabilities measured at amortized cost (FLAC)[a]	n.a.	n.a.	(2,091)

[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 (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; 2017: interest income of EUR 260 million and interest expense of EUR 165 million).

The increase in finance costs is attributable in particular to the subsequent measurement of recognized lease liabilities since the first-time application of IFRS 16. This effect increased finance costs by EUR 0.9 billion in the reporting year. Favorable refinancing terms had a reducing effect on finance costs compared with the prior year. In 2018, the Consent Fee of EUR 0.1 billion paid (or still payable) to lending banks in connection with the probable increase in the admissible amount of collateralized financing instruments at T-Mobile US as a consequence of the agreed business combination with Sprint had an increasing effect on finance costs.

EUR 343 million (2018: EUR 290 million; 2017: EUR 176 million) was capitalized as part of acquisition costs in the financial year. The increase mainly relates to investments in the United States operating segment. The amount was calculated on the basis of an interest rate in the average range between 3.5 percent at the start of the year and 3.2 percent at the end of the year (2018: between 3.9 and 3.5 percent) applied across the Group.

Interest payments (including capitalized interest) of EUR 4.3 billion (2018: EUR 3.6 billion, 2017: EUR 4.0 billion) were made in the financial 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 €

	2019	2018	2017
Share of profit (loss) of joint ventures	(7)	(536)	12
Share of profit (loss) of associates	93	6	64
	87	**(529)**	**76**

The share of profit/loss of associates and joint ventures included in the consolidated financial statements using the equity method increased by EUR 0.6 billion compared with the prior year. This was mainly attributable to the settlement agreement reached in 2018 to end the Toll Collect arbitration proceedings, which reduced earnings by EUR 0.6 billion in 2018. By contrast, the profit distribution of Toll Collect GmbH – EUR 0.1 billion of which is attributable to Deutsche Telekom – had a positive effect.

For further information, please refer to Note 10 "Investments accounted for using the equity method."

30 OTHER FINANCIAL INCOME/EXPENSE

millions of €

	2019	2018	2017
Income from investments (without share of profit (loss) of associates and joint ventures accounted for using the equity method)	(11)	3	179
Gains (losses) from financial instruments	321	(352)	(2,270)
Interest component from measurement of provisions and liabilities	(229)	(178)	(178)
Gains (losses) from the write-off of financial assets measured at amortized cost	0	25	0
	81	**(502)**	**(2,269)**

All income/expense components including interest income and expense from financial instruments classified since January 1, 2018 as at fair value through profit or loss in accordance with IFRS 9 (in 2017 – as held for trading in accordance with IAS 39) are reported under other financial income/expense.

Other financial expense decreased by EUR 0.6 billion year-on-year, resulting in other financial income of EUR 0.1 billion. This improvement was mainly due to higher earnings from financial instruments, EUR 0.5 billion of which related to measurement effects from embedded derivatives at T-Mobile US, in particular as a result of the lower interest rate risk premium for T-Mobile US. By contrast, the interest expense from the measurement of provisions and liabilities increased, in particular in connection with the measurement using actuarial principles of the present value of the provision recognized for the Civil Service Health Insurance Fund (Postbeamtenkrankenkasse – PBeaKK). In 2017, income from investments included the dividends of around EUR 0.2 billion received from the former financial stake in BT.

EUR -14 million (2018: EUR 57 million, 2017: EUR -198 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 335 million (2018: EUR -409 million, 2017: EUR -2,072 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 2.0 billion was recorded in the 2019 financial year. The effective tax rate of 27 percent essentially reflects the shares of the different countries in profit before income taxes and their respective national tax rates. Impairment losses on non-current assets in the Europe operating segment that had no tax effect were offset by factors including positive effects from changes in tax law in the Europe operating segment.

In the prior year, a tax expense of EUR 1.8 billion was recorded, giving rise to an effective tax rate of 35 percent. The main reason for the comparatively high tax burden was impairment losses on goodwill in the Europe operating segment that had no tax effect.

The following table provides a breakdown of income taxes in Germany and internationally:

millions of €	2019	2018	2017
CURRENT TAXES	**883**	**592**	**569**
Germany	488	217	219
International	395	375	350
DEFERRED TAXES	**1,110**	**1,232**	**(1,127)**
Germany	314	334	116
International	796	898	(1,243)
	1,993	**1,824**	**(558)**

Deutsche Telekom's combined income tax rate for 2019 amounts to 31.4 percent (2018: 31.4 percent, 2017: 31.4 percent). It consists of corporate income tax at a rate of 15.0 percent, the solidarity surcharge of 5.5 percent on corporate income tax, and trade tax at an average multiplier of 445 percent (2018: 445 percent, 2017: 445 percent).

Reconciliation of the effective tax rate. Income taxes of EUR -1,993 million (as expense) in the reporting year (2018: EUR -1,824 million (as expense), 2017: EUR 558 million (as benefit)) 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 €		2019	2018	2017
PROFIT BEFORE INCOME TAXES		**7,260**	**5,153**	**4,994**
Expected income tax expense (benefit) (income tax rate applicable to Deutsche Telekom AG: 2019: 31.4%, 2018: 31.4%, 2017: 31.4%)		2,280	1,618	1,568
ADJUSTMENTS TO EXPECTED TAX EXPENSE (BENEFIT)				
Effect of changes in statutory tax rates		(41)	39	(2,738)
Tax effects from prior years		(18)	158	(132)
Tax effects from other income taxes		258	114	(141)
Non-taxable income		(26)	(16)	(329)
Tax effects from equity investments		(46)	(112)	(81)
Non-deductible expenses		140	170	591
Permanent differences		(23)	(57)	83
Goodwill impairment losses		(14)	186	620
Tax effects from loss carryforwards		43	22	(11)
Tax effects from additions to and reductions of local taxes		71	189	72
Adjustment of taxes to different foreign tax rates		(633)	(489)	(59)
Other tax effects		2	2	(1)
INCOME TAX EXPENSE (BENEFIT) ACCORDING TO THE CONSOLIDATED INCOME STATEMENT		**1,993**	**1,824**	**(558)**
Effective income tax rate	%	27	35	(11)

Current income taxes in the consolidated income statement

The following table provides a breakdown of current income taxes:

millions of €	2019	2018	2017
CURRENT INCOME TAXES	**883**	**592**	**569**
Of which: current tax expense	803	571	741
Of which: prior-period tax expense	80	21	(172)

Deferred taxes in the consolidated income statement

Deferred taxes developed as follows:

millions of €

	2019	2018	2017
DEFERRED TAX EXPENSE (BENEFIT)	**1,110**	**1,232**	**(1,127)**
Of which: from temporary differences	446	1,217	(765)
Of which: from loss carryforwards	654	49	(381)
Of which: from tax credits	10	(34)	19

INCOME TAXES IN THE CONSOLIDATED STATEMENT OF FINANCIAL POSITION

Current income taxes in the consolidated statement of financial position

millions of €

	Dec. 31, 2019	Dec. 31, 2018
Recoverable taxes	481	492
Tax liabilities	(463)	(328)
Current taxes recognized in other comprehensive income:		
Hedging instruments	(252)	(252)

Deferred taxes in the consolidated statement of financial position

millions of €

	Dec. 31, 2019	Dec. 31, 2018
Deferred tax assets	2,704	2,949
Deferred tax liabilities	(8,954)	(8,240)
	(6,249)	**(5,291)**
Of which: recognized in other comprehensive income:		
Gains (losses) from the remeasurement of defined benefit plans	1,448	1,315
Revaluation surplus	167	141
Hedging instruments	199	106
RECOGNIZED IN OTHER COMPREHENSIVE INCOME BEFORE NON-CONTROLLING INTERESTS	**1,814**	**1,562**
Non-controlling interests	(8)	(10)
	1,806	**1,552**

Development of deferred taxes

millions of €

	Dec. 31, 2019	Dec. 31, 2018
Deferred taxes recognized in the statement of financial position	(6,249)	(5,291)
Difference to prior year	(959)	(2,237)
Of which: Recognized in income statement	(1,110)	(1,232)
Recognized in other comprehensive income	330	89
Recognized in capital reserves	0	10
Acquisitions (disposals) (including assets and disposal groups held for sale)	(75)	(970)
Currency translation adjustments	(104)	(234)

Development of deferred taxes on loss carryforwards

millions of €

	Dec. 31, 2019	Dec. 31, 2018
Deferred taxes on loss carryforwards before allowances	1,291	1,917
Difference to prior year	(626)	(334)
Of which: Recognition (derecognition)	(660)	(131)
Acquisitions (disposals) (including assets and disposal groups held for sale)	0	(279)
Currency translation adjustments	34	76

Deferred taxes relate to the following key items in the statement of financial position, loss carryforwards, and tax credits:

millions of €

	Dec. 31, 2019		Dec. 31, 2018	
	Deferred tax assets	Deferred tax liabilities	Deferred tax assets	Deferred tax liabilities
CURRENT ASSETS	**1,623**	**(1,142)**	**1,602**	**(974)**
Trade receivables	881	(1,549)	823	(213)
Inventories	75	0	120	0
Other assets	661	2,719	655	(140)
Contract assets	6	(717)	4	(621)
NON-CURRENT ASSETS	**2,911**	**(17,846)**	**2,726**	**(12,701)**
Intangible assets	567	(7,956)	588	(7,499)
Property, plant and equipment	811	(4,445)	748	(4,205)
Other financial assets	1,532	(5,096)	1,390	(657)
Capitalized contract costs	1	(349)	0	(340)
CURRENT LIABILITIES	**1,543**	**(790)**	**992**	**(706)**
Financial liabilities	506	(375)	311	(386)
Trade and other payables	58	(13)	69	(30)
Other provisions	274	(82)	252	(103)
Other liabilities	490	(245)	127	(88)
Contract liabilities	215	(75)	233	(99)
NON-CURRENT LIABILITIES	**8,978**	**(2,891)**	**4,575**	**(2,753)**
Financial liabilities	1,986	(1,252)	1,172	(1,319)
Provisions for pensions and other employee benefits	1,843	(1,392)	1,653	(1,242)
Other provisions	783	(212)	737	(186)
Other liabilities	4,234	(22)	877	(4)
Contract liabilities	132	(13)	136	(2)
RETAINED EARNINGS	**18**	**(155)**	**0**	**(118)**
TAX CREDITS	**270**	**0**	**274**	**0**
LOSS CARRYFORWARDS	**1,010**	**0**	**1,608**	**0**
INTEREST CARRYFORWARDS	**221**	**0**	**184**	**0**
TOTAL	**16,574**	**(22,824)**	**11,961**	**(17,252)**
Of which: non-current	13,547	(20,948)	9,608	(15,620)
Netting	(13,870)	13,870	(9,012)	9,012
RECOGNITION	**2,704**	**(8,954)**	**2,949**	**(8,240)**

The loss carryforwards amount to:

millions of €

	Dec. 31, 2019	Dec. 31, 2018
LOSS CARRYFORWARDS FOR CORPORATE INCOME TAX PURPOSES	**3,968**	**6,564**
Expiry within		
1 year	9	31
2 years	395	28
3 years	38	25
4 years	10	571
5 years	59	69
After 5 years	792	4,005
Unlimited carryforward period	2,665	1,835

Loss carryforwards and temporary differences for which no deferred taxes were recorded amount to:

millions of €	Dec. 31, 2019	Dec. 31, 2018
LOSS CARRYFORWARDS FOR CORPORATE INCOME TAX PURPOSES	**968**	**865**
Expiry within		
1 year	6	30
2 years	6	9
3 years	8	8
4 years	1	12
5 years	35	30
After 5 years	148	100
Unlimited carryforward period	764	676
TEMPORARY DIFFERENCES IN CORPORATE INCOME TAX	**747**	**507**

In addition, no deferred taxes are recognized on trade tax loss carryforwards of EUR 58 million (December 31, 2018: EUR 20 million) and on temporary differences for trade tax purposes in the amount of EUR 0 million (December 31, 2018: EUR 7 million). Furthermore, apart from corporate income tax loss carryforwards, no deferred taxes amounting to EUR 112 million (December 31, 2018: EUR 164 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 0 million (December 31, 2018: 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 6 million (2018: EUR 31 million, 2017: EUR 25 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 920 million (December 31, 2018: EUR 840 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 €

	2019			2018			2017		
	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	(603)	134	(469)	127	37	164	116	(19)	97
Gains (losses) from the remeasurement of equity instruments	99	0	99	(619)	(1)	(620)			
Share of profit (loss) of investments accounted for using the equity method	0	0	0				0	0	0
	(504)	**134**	**(369)**	**(492)**	**36**	**(456)**	**116**	**(19)**	**97**
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	(8)	0	(8)	(1)	0	(1)	0	0	0
Change in other comprehensive income (not recognized in income statement)	463	0	463	1,033	0	1,033	(2,196)	0	(2,196)
Gains (losses) from the remeasurement of available-for-sale financial assets									
Recognition of other comprehensive income in income statement	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	7	(2)	5
Change in other comprehensive income (not recognized in income statement)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	27	0	27
Gains (losses) from the remeasurement of debt instruments									
Recognition of other comprehensive income in income statement	(47)	0	(47)	(75)	(3)	(78)			
Change in other comprehensive income (not recognized in income statement)	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	(148)	46	(102)	(32)	10	(22)	450	(141)	309
Change in other comprehensive income (not recognized in income statement)	(483)	115	(368)	(382)	61	(321)	(270)	85	(185)
Gains (losses) from hedging instruments (IFRS 9 from January 2018, hedging costs)									
Recognition of other comprehensive income in income statement	2	(1)	1	3	(1)	2			
Change in other comprehensive income (not recognized in income statement)	(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	(7)	0	(7)	0	0	0	0	0	0
Change in other comprehensive income (not recognized in income statement)	11	0	11	7	0	7	0	0	0
	(192)	**154**	**(38)**	**693**	**87**	**780**	**(1,982)**	**(58)**	**(2,040)**
OTHER COMPREHENSIVE INCOME	**(696)**	**289**	**(407)**	**201**	**123**	**323**	**(1,866)**	**(77)**	**(1,943)**
Profit (loss)			5,268			3,328			5,551
TOTAL COMPREHENSIVE INCOME			**4,861**			**3,652**			**3,608**

32 PROFIT/LOSS ATTRIBUTABLE TO NON-CONTROLLING INTERESTS

millions of €	2019	2018	2017
T-Mobile US	1,325	915	1,933
Hrvatski Telekom	49	69	48
Hellenic Telecommunications Organization (OTE)	(27)	119	49
Magyar Telekom	63	65	56
T-Mobile Netherlands Holding B.V.	3	0	0
Other	(12)	(5)	4
	1,401	**1,163**	**2,090**

33 EARNINGS PER SHARE

Basic and diluted earnings per share are calculated in accordance with IAS 33 as follows:

		2019	2018	2017
Profit attributable to the owners of the parent (net profit (loss))	millions of €	3,867	2,166	3,461
Adjustment	millions of €	0	0	0
ADJUSTED NET PROFIT (LOSS) (BASIC/DILUTED)	millions of €	**3,867**	**2,166**	**3,461**
Number of ordinary shares issued	millions	4,761	4,761	4,722
Treasury shares	millions	(19)	(19)	(19)
ADJUSTED WEIGHTED AVERAGE NUMBER OF ORDINARY SHARES OUTSTANDING (BASIC/DILUTED)	millions	**4,743**	**4,742**	**4,703**
EARNINGS PER SHARE (BASIC/DILUTED)	€	**0.82**	**0.46**	**0.74**

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 2019 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 10, 2020. 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 0.70 for the 2018 financial year for each no par value share carrying dividend rights was paid out in 2019.

OTHER DISCLOSURES

35 NOTES TO THE CONSOLIDATED STATEMENT OF CASH FLOWS

NET CASH FROM OPERATING ACTIVITIES

Net cash from operating activities increased by EUR 5.1 billion year-on-year to EUR 23.1 billion. In the prior year, the cash outflows in connection with operating leases reduced net cash from operating activities. Due to the first-time application of IFRS 16, the principal repayment portion of lease payments is presented in net cash used in financing activities. The strong performance of the operating segments, in particular the United States, significantly increased net cash from operating activities. In the 2019 financial year, factoring agreements – especially in the Germany and Systems Solutions operating segments – resulted in negative effects of EUR 0.3 billion on net cash from operating activities. Factoring agreements had had no material effects in the prior year. Net cash from operating activities was also reduced in the reporting year by a EUR 0.5 billion increase in net interest payments and a EUR 0.1 billion increase in tax payments. In the previous year, dividends received in the amount of EUR 0.2 billion had had an increasing effect.

For further information on the first-time application of IFRS 16, please refer to the section "Initial application of standards, interpretations, and amendments."

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 active working capital is mainly attributable to the acquisition of mobile devices in connection with the JUMP! On Demand business model in the United States operating segment and to the expiration of a factoring agreement in the Systems Solutions operating segment. By contrast, the reduction in inventories of mobile devices in the United States and Germany operating segments had a positive effect on working capital. Liabilities carried as working capital decreased mainly as a result of the reduction in trade payables and a lower procurement volume in nearly all operating segments.

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 €

	2019	2018	2017
Cash capex			
Germany	(4,349)	(4,240)	(4,214)
United States	(6,369)	(4,661)	(11,932)
Europe	(1,824)	(1,887)	(1,874)
Systems Solutions	(384)	(462)	(383)
Group Development	(452)	(271)	(290)
Group Headquarters & Group Services	(1,028)	(1,078)	(1,005)
Reconciliation	48	107	204
	(14,357)	**(12,492)**	**(19,494)**
Payments for publicly funded investments in the broadband build-out[a]	(401)	n.a.	n.a.
Proceeds from public funds for investments in the broadband build-out[a]	341	n.a.	n.a.
Net cash flows for collateral deposited and hedging transactions	365	(170)	1,390
Cash inflows from the sale of shares in Scout24 AG	0	0	319
Cash outflows for the acquisition of the shares in Tele2 Netherlands[b]	(195)	0	0
Cash outflows for the acquisition of the shares in Layer3 TV[c]	0	(258)	0
Cash outflows for the acquisition of shares in UPC Austria GmbH[d]	0	(1,791)	0
Proceeds from the disposal of property, plant and equipment, and intangible assets	176	525	400
Cash flows from the loss of control of subsidiaries and associates[e,f]	62	(67)	528
Reverse allocation under contractual trust agreement (CTA) on pension commitments	0	225	0
Payment in relation to settlement reached in Toll Collect arbitration proceedings	(200)	(200)	0
Payment in relation to equity maintenance undertaking for Toll Collect GmbH	0	(60)	0
Acquisition/sale of government bonds, net	0	0	5
Other	(21)	(9)	38
	(14,230)	**(14,297)**	**(16,814)**

[a] For further information on the change in estimates for publicly funded investments in the broadband build-out, please refer to the section "Changes in accounting policies, changes in estimates."

[b] Includes, in addition to the purchase price of EUR 199 million, inflows of cash and cash equivalents in the amount of EUR 4 million.

[c] Includes, in addition to the purchase price of EUR 260 million, inflows of cash and cash equivalents in the amount of EUR 2 million.

[d] 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.

[e] 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.

[f] In 2017, EUR 600 million of this related to the cash inflows from purchase price payments and EUR 72 million to outflows of cash and cash equivalents.

Cash capex increased by EUR 1.9 billion to EUR 14.4 billion. In the 2019 financial year, mobile spectrum licenses were acquired for total cash of EUR 1.2 billion. EUR 0.1 billion of this related to the United States operating segment and was primarily attributable to the purchase of FCC licenses in two auctions for the 24 GHz and 28 GHz spectrum. In the reporting year, EUR 0.1 billion was spent on the 5G licenses purchased in the Germany operating segment, for which annual installments through 2030 have been agreed. Another EUR 0.1 billion was paid for spectrum in the Europe operating segment. The prior-year figure had included EUR 0.3 billion for the acquisition of mobile spectrum licenses, predominantly for the United States operating segment. Adjusted for investments in mobile spectrum licenses, cash capex was up by EUR 0.9 billion. This increase relates almost entirely to the United States operating segment and was primarily attributable to the infrastructure build-out for the 600 MHz spectrum, which also lays the groundwork for 5G. Interest payments (including capitalized interest) of EUR 4.3 billion (2018: EUR 3.6 billion; 2017: EUR 4.0 billion) were made in the reporting period. Capitalized interest was reported within cash capex in net cash used in investing activities, together with the associated assets.

The contractual grants receivable from publicly funded projects for the broadband build-out in Germany were recognized in full as of the start of the second half of 2019. 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.

Net cash used in financing activities

millions of €

	2019	2018	2017
Repayment of bonds	(2,718)	(4,604)	(10,992)
Dividend payments (including to other shareholders of subsidiaries)	(3,561)	(3,254)	(1,559)
Repayment of financial liabilities from financed capex and opex	(699)	(260)	(266)
Repayment of EIB loans	(660)	(159)	(374)
Net cash flows for collateral deposited and hedging transactions	112	244	39
Principal portion of repayment of lease liabilities	(3,835)	(1,174)	(715)
Repayment of financial liabilities for media broadcasting rights	(407)	(407)	(259)
Cash flows from continuing involvement factoring, net	(21)	31	1
Loans taken out with the EIB	500	150	825
Promissory notes, net	144	201	317
Secured loans	0	0	(1,863)
Issuance of bonds	5,479	7,824	10,189
Commercial paper, net	(467)	(623)	735
Overnight borrowings from banks	(626)	565	0
Cash inflows from transactions with non-controlling entities			
T-Mobile US stock options	2	3	18
Toll4Europe capital contributions	10	24	0
Other	1	2	0
	13	**29**	**18**
Cash outflows from transactions with non-controlling entities			
T-Mobile US share buy-backs	(139)	(997)	(511)
OTE share buy-back program	(110)	(94)	0
Acquisition of T-Mobile US shares	0	(164)	0
Acquisition of OTE shares	0	(285)	0
Other	(12)	(17)	(11)
	(261)	**(1,557)**	**(522)**
Other	(134)	(265)	(168)
	(7,141)	**(3,259)**	**(4,594)**

NON-CASH TRANSACTIONS IN THE CONSOLIDATED STATEMENT OF CASH FLOWS

A Deutsche Bundespost treasury note (zero-coupon bond) issued by Deutsche Telekom AG in 1990 with a nominal amount of EUR 0.2 billion fell due on December 31, 2019 and was repaid on that date by a bank using its own funds. The payment to this bank by Deutsche Telekom AG was made on the following banking day, January 2, 2020, which is why it is not shown in the consolidated statement of cash flows for the 2019 financial year. The full interest component of EUR 1.2 billion became payable on the due date. The repayment of the nominal amount will be reported under cash used in financing activities in the 2020 financial year. The interest component due will be recognized in net cash from operating activities in 2020.

In the 2019 financial year, Deutsche Telekom chose financing options totaling EUR 0.7 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 (2018: EUR 0.2 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 used in/from financing activities.

In the 2019 financial year, Deutsche Telekom leased assets totaling EUR 5.5 billion, mainly technical equipment and machinery plus land and buildings. These assets are now recognized in the statement of financial position under right-of-use assets and the related liabiliteis under lease liabilities. Future repayments of the liabilities will be recognized in net cash used in/from financing activities. In the prior year, finance leases totaling EUR 1.0 billion had been concluded in accordance with the previously applicable standard IAS 17.

Consideration for the acquisition of broadcasting rights will be paid by Deutsche Telekom in accordance with the terms of the contract on the date of its conclusion or spread over the term of the contract. Financial liabilities of EUR 0.3 billion were recognized in the 2019 financial year for future consideration for acquired broadcasting rights (2018: EUR 0.3 billion). As soon as the payments have been made, they are disclosed under net cash used in/from financing activities.

In the United States operating segment, EUR 0.9 billion was recognized for mobile handsets under property, plant and equipment in the 2019 financial year (2018: EUR 0.9 billion). These relate to the JUMP! On Demand business 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.

As part of the acquisition of 100 percent of the shares in Tele2 Netherlands, Deutsche Telekom transferred a 25 percent share in T-Mobile Netherlands (prior to the business combination).

For further information, please refer to the section “Changes in the composition of the Group.”

In the Germany operating segment, Deutsche Telekom acquired mobile spectrum licenses worth EUR 2.2 billion in the 2019 financial year for the construction of a 5G network. Under the payment schedule agreed with the Federal Republic of Germany, EUR 0.1 billion was paid in the reporting period and presented as cash capex. Future payments will primarily be recognized in net cash used in/from financing activities.

The carrying amounts of the financial liabilities disclosed in net cash used in/from 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, 2019	Of which: payments to be disclosed in net cash (used in) from 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**

[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.

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[a]	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 (used in) from financing activities[b]	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**	**(1,559)**	**289**	**55,688**	**58,161**
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[c]	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[c]	**627**	**1,058**	**(255)**	**1,854**	**3,287**	**59,894**	**66,349**
LEASE LIABILITIES[c]	**237**	**0**	**0**	**5,487**	**5,927**	**20,164**	**19,835**
DERIVATIVE FINANCIAL ASSETS	**0**	**0**	**(198)**	**0**	**(198)**	**(306)**	**2,333**

[a] 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.

[b] Deutsche Telekom exercised the option pursuant to IAS 7.33 and presented interest paid and interest received under net cash from operating activities.

[c] 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.

Total carrying amount changes having an effect on cash flows of EUR -3.4 billion in the items of the financial position allocated to net cash used in/from financing activities deviate from net cash used in financing activities due in particular to the dividend entitlements of Deutsche Telekom AG's shareholders having an effect on cash flows. The introduction of the IFRS 16 accounting standard led to the recognition of current and non-current lease liabilities and to the reclassification of finance lease liabilities that in the past had been recognized under financial liabilities. This resulted in an adjustment of the opening balances as of January 1, 2019. The other carrying amount changes in lease liabilities not having an effect on cash flows are mainly attributable to additions to liabilities in connection with the recognition of right-of-use assets. The other carrying amount changes in financial liabilities not having an effect on cash flows include additions of EUR 0.7 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 0.3 billion for the acquisition of broadcasting rights.

In the 2019 financial year, Deutsche Telekom made total interest payments of EUR 3.9 billion to service interest obligations. This figure includes interest payments for derivative and non-derivative financial liabilities as well as for lease liabilities. The above reconciliation only shows the carrying amounts of the financial liabilities, lease liabilities, and derivative financial assets allocated to net cash used in financing activities.

For further information, please refer to the section "Non-cash transactions in the consolidated statement of cash flows" above.

For further information on the first-time application of IFRS 16, please refer to the section "Initial application of standards, interpretations, and amendments."

The carrying amounts of the financial liabilities disclosed in net cash used in/from financing activities, divided into carrying amount changes having and not having an effect on cash flows, developed as follows in 2018:

millions of €	As of Jan. 1, 2018	Of which: payments to be disclosed in net cash (used in) from financing activities	Total carrying amount changes having an effect on cash flows	Changes in the composition of the Group
Bonds and other securitized liabilities	45,453	45,453	2,595	0
Liabilities to banks	4,974	4,974	536	0
	50,427	**50,427**	**3,131**	**0**
Finance lease liabilities	2,635	2,635	(1,174)	4
Liabilities to non-banks from promissory note bonds	480	480	2	0
Liabilities with the right of creditors to priority repayment in the event of default	0	0	0	0
Other interest-bearing liabilities	1,598	1,013	(680)	145
Other non-interest-bearing liabilities	1,443	4	3	6
Derivative financial liabilities	946	807	(5)	0
	7,102	**4,939**	**(1,854)**	**155**
FINANCIAL LIABILITIES	**57,529**	**54,635**	**1,277**	**155**
DERIVATIVE FINANCIAL ASSETS	**1,317**	**287**	**250**	**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, 2018 of the payments to be disclosed in net cash (used in) from financing activities	As of Dec. 31, 2018
Bonds and other securitized liabilities	962	36	79	0	1,077	49,033	49,033
Liabilities to banks	51	18	32	0	101	4,968	5,710
	1,013	**54**	**111**	**0**	**1,178**	**54,001**	**54,743**
Finance lease liabilities	70	0	0	989	1,063	2,471	2,471
Liabilities to non-banks from promissory note bonds	17	0	0	0	17	497	497
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	9	0	41	631	826	1,447	1,878
Other non-interest-bearing liabilities	0	0	0	0	6	13	1,609
Derivative financial liabilities	0	0	(75)	0	(75)	727	1,077
	96	**0**	**(34)**	**1,620**	**1,837**	**5,156**	**7,532**
FINANCIAL LIABILITIES	**1,109**	**54**	**77**	**1,620**	**3,015**	**59,157**	**62,275**
DERIVATIVE FINANCIAL ASSETS	**0**	**0**	**3**	**0**	**3**	**34**	**870**

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 activities for consumers and business customers in Germany. It also focuses on the wholesale business to provide 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 **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 sold the national company in Albania as of May 7, 2019. In addition to consumer business, most of the national companies also offer ICT solutions for business customers. In the context of international wholesale business, Telekom Global Carrier (TGC), which is a unit of the Europe operating segment, sells wholesale telecommunications services to the operating segments as well as to third parties. 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, as well as the takeover of Tele2 Netherlands by T-Mobile Netherlands effective January 2, 2019. Deutsche Telekom Capital Partners (DTCP) and the Group functions of Mergers & Acquisitions and Strategic Portfolio Management have also been assigned to Group Development. The financial 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 percent 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, and IT 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. Vivento Customer Services GmbH, a provider of call center services, was integrated into the Germany operating segment as of January 1, 2018. 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 comparative figures for 2017 have been adjusted retrospectively in segment reporting.

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 and property, plant and equipment. 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	Inter-segment revenue	Total revenue	Profit (loss) from operations (EBIT)	Depreciation and amortization	Impairment losses	Interest income
Germany	2019	20,572	1,314	21,886	4,063	(4,251)	(4)	3
	2018	20,351	1,349	21,700	3,969	(4,037)	(6)	4
	2017	20,552	1,379	21,931	4,276	(3,822)	(6)	6
United States	2019	40,418	2	40,420	5,488	(7,777)	0	19
	2018	36,521	1	36,522	4,634	(5,294)	0	14
	2017	35,735	1	35,736	5,930	(5,015)	(4)	14
Europe	2019	11,808	360	12,168	1,182	(2,790)	(341)	29
	2018	11,522	363	11,885	744	(2,334)	(679)	8
	2017	11,218	371	11,589	462	(2,283)	(874)	6
Systems Solutions	2019	5,380	1,425	6,805	(218)	(503)	(29)	14
	2018	5,497	1,439	6,936	(291)	(403)	(50)	14
	2017	5,504	1,414	6,918	(1,356)	(394)	(1,242)	13
Group Development	2019	2,158	639	2,797	615	(812)	0	0
	2018	1,579	606	2,185	560	(334)	0	0
	2017	1,660	603	2,263	1,504	(304)	0	0
Group Headquarters & Group Services	2019	195	2,425	2,620	(1,648)	(1,158)	(2)	1,330
	2018	186	2,549	2,735	(1,662)	(815)	(10)	1,017
	2017	278	2,657	2,935	(1,437)	(625)	(32)	1,150
TOTAL	**2019**	**80,531**	**6,166**	**86,696**	**9,482**	**(17,291)**	**(376)**	**1,395**
	2018	**75,656**	**6,307**	**81,963**	**7,954**	**(13,217)**	**(745)**	**1,057**
	2017	**74,947**	**6,425**	**81,372**	**9,379**	**(12,443)**	**(2,157)**	**1,189**
Reconciliation	2019	0	(6,166)	(6,166)	(25)	25	(21)	(1,047)
	2018	0	(6,307)	(6,307)	47	104	23	(780)
	2017	0	(6,425)	(6,425)	4	15	(1)	(869)
GROUP	**2019**	**80,531**	**0**	**80,531**	**9,457**	**(17,266)**	**(397)**	**348**
	2018	**75,656**	**0**	**75,656**	**8,001**	**(13,113)**	**(722)**	**277**
	2017	**74,947**	**0**	**74,947**	**9,383**	**(12,428)**	**(2,158)**	**320**

[a] 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 invest-ments	Invest-ments accounted for using the equity method	Net cash from operating activities	Net cash (used in) from investing activities	Of which: cash capex[a]	Net cash (used in) from financing activities	Average number of employees
(205)	0	(1)	41,253	30,968	6,237	12	7,498	(4,407)	(4,349)	7,366	61,626
(163)	0	1	37,419	27,571	4,730	12	8,200	(4,538)	(4,240)	(4,303)	63,832
(142)	6	0	33,739	26,641	4,786	12	8,463	(4,246)	(4,214)	(3,976)	65,482
(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
(1,434)	(1)	1,444	64,931	42,003	14,811	189	6,847	(9,948)	(11,932)	(966)	43,935
(252)	1	(259)	27,699	10,843	1,974	59	3,585	(1,748)	(1,824)	(1,823)	46,066
(205)	3	(282)	27,263	10,134	2,096	60	2,914	(1,960)	(1,887)	(1,161)	48,059
(260)	2	(281)	25,746	10,206	2,052	62	2,863	(1,761)	(1,874)	(1,067)	47,416
(28)	0	(39)	6,615	4,800	362	25	54	(398)	(384)	93	37,916
(9)	(535)	(36)	5,728	3,810	480	24	286	(1,116)	(462)	237	37,837
(10)	14	(28)	6,408	5,061	471	31	326	(422)	(383)	253	37,745
(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
(11)	57	(36)	9,997	5,548	335	346	1,000	673	(290)	(4,656)	2,127
(1,510)	(1)	(491)	54,162	65,066	998	9	4,101	(16,675)	(1,028)	(1,729)	17,985
(1,490)	(1)	(487)	50,047	58,931	1,076	10	5,928	(2,412)	(1,078)	705	18,947
(1,526)	(1)	(541)	46,957	55,863	1,018	11	6,709	(10,082)	(1,005)	5,750	19,750
(3,758)	**87**	**(2,005)**	**222,537**	**176,335**	**17,369**	**489**	**27,818**	**(30,835)**	**(14,406)**	**4,709**	**212,846**
(2,873)	**(529)**	**(1,800)**	**195,717**	**152,325**	**15,384**	**576**	**25,903**	**(15,353)**	**(12,599)**	**(10,192)**	**216,369**
(3,383)	**76**	**558**	**187,778**	**145,323**	**23,473**	**651**	**26,207**	**(25,786)**	**(19,698)**	**(4,662)**	**216,454**
1,046	0	12	(51,865)	(51,894)	(75)	0	(4,744)	16,605	48	(11,850)	0
779	0	(24)	(50,342)	(50,387)	(130)	0	(7,955)	1,056	107	6,933	0
866	0	0	(46,444)	(46,459)	(332)	0	(9,011)	8,972	204	68	0
(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**
(2,517)	**76**	**558**	**141,334**	**98,864**	**23,141**	**651**	**17,196**	**(16,814)**	**(19,494)**	**(4,594)**	**216,454**

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; 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, 2019	Dec. 31, 2018	Dec. 31, 2017	**2019**	2018[a]	2017
Germany	42,424	38,093	37,248	24,600	24,358	24,556
International	94,784	79,133	73,965	55,930	51,298	50,391
Europe (excluding Germany)	23,599	21,263	20,172	14,858	14,065	13,913
North America	71,079	57,817	53,724	40,445	36,667	35,897
Other countries	106	53	69	628	566	580
GROUP	**137,208**	**117,226**	**111,213**	**80,531**	**75,656**	**74,947**

[a] Due to a change in allocation between the geographical segments, the value of net revenue for the comparative period 2018 was adjusted retrospectively.

Information on products and services. Revenue generated with external customers for groups of comparable products and services developed as follows:

millions of €

	Net revenue		
	2019	2018	2017
Telecommunications	73,037	68,241	67,688
ICT solutions	7,039	6,958	6,735
Other	454	457	524
	80,531	**75,656**	**74,947**

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 0.6 billion (December 31, 2018: EUR 0.5 billion) and to contingent assets amounting to EUR 0.0 billion (December 31, 2018: 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.

Toll Collect arbitration proceedings. On May 16, 2018, Daimler Mobility AG (formerly Daimler Financial Services AG), Deutsche Telekom, and the Federal Republic of Germany reached an agreement to cease the Toll Collect arbitration proceedings. Daimler Mobility AG and Deutsche Telekom have both agreed to make final payments of EUR 550 million each, for which they are jointly and severally liable. These payments will be made in three tranches by 2020; the first two tranches have already been paid. Deutsche Telekom believes that a claim arising from the joint and several liability is unlikely to be made in excess of Deutsche Telekom's share of the risk.

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.

Consent Fee for Sprint. In connection with the agreed business combination of T-Mobile US and Sprint, T-Mobile US may be required to reimburse Sprint for 67 percent of the upfront consent and related bank fees it paid to lending banks, or USD 161 million, if the business combination agreement is terminated.

Arbitration proceedings against T-Mobile Polska S.A. In August 2019, Polish telecommunications provider P4 Sp. z o.o. initiated arbitration proceedings against T-Mobile Polska S.A. The plaintiff is claiming around PLN 400 million (around EUR 93 million) plus interest as payment for its alleged entitlement to retroactive mobile termination rates.

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 follow-on damage actions under civil law. 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. Three claims totaling EUR 215 million plus interest are currently 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. Deutsche Telekom recognizes a receivable in the amount of the net investment in the lease. The lease payments made by the lessees are split into an interest component and a principal component using the effective interest method. The lease receivable is reduced by the principal received. The interest component of the payments received is recognized as finance income in the income statement. Under business models in which Deutsche Telekom is classified as a manufacturer or dealer within the meaning of IFRS 16, revenue is disclosed similar to the accounting of revenue in accordance with IFRS 15. The gain or loss on the sale of 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 recognized under the lease revenue.

The following table shows how the amount of the net investment in a finance lease is determined:

millions of €	Dec. 31, 2019	Dec. 31, 2018
Minimum lease payments	213	143
Unguaranteed residual value	4	4
Gross investment	218	146
Unearned finance income	(21)	1
NET INVESTMENT (PRESENT VALUE OF THE MINIMUM LEASE PAYMENTS)	**197**	**147**

The following table presents the gross investment amounts and the present value of payable minimum lease payments:

millions of €

	Dec. 31, 2019	
Maturity	Gross investment	Present value of minimum lease payments
Within 1 year	79	74
In 1 to 2 years	65	53
In 2 to 3 years	34	31
In 3 to 4 years	19	18
In 4 to 5 years	15	15
After 5 years	6	6
	218	**197**

millions of €

	Dec. 31, 2018	
Maturity	Gross investment	Present value of minimum lease payments
Within 1 year	61	64
In 1 to 3 years	61	61
In 3 to 5 years	19	19
After 5 years	5	4
	146	**147**

Operating leases. If Deutsche Telekom is a lessor in connection with operating leases, it continues to recognize the leased assets in its statement of financial position. The lease payments received are recognized in profit or loss. The leases mainly relate to the rental of cell sites, building and co-location space, unbundled local loop lines, and terminal equipment.

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.

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 is based on the estimated market value of the device at the end of the contract. 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.

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, 2017	**112**	**1,543**	**1,656**
Currency translation	0	50	50
Changes in the composition of the Group	0	2	2
Additions	0	932	932
Disposals	(13)	(945)	(958)
Change from non-current assets and disposal groups held for sale	0	0	0
Reclassifications	0	16	16
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**
ACCUMULATED DEPRECIATION AND IMPAIRMENT LOSSES			
AT DECEMBER 31, 2017	**(85)**	**(726)**	**(811)**
Currency translation	0	(22)	(22)
Changes in the composition of the Group	0	0	0
Additions (depreciation)	(2)	(897)	(899)
Additions (impairment)	0	0	0
Disposals	12	667	679
Change from non-current assets and disposal groups held for sale	0	0	0
Reclassifications	0	(8)	(7)
Reversal of impairment losses	0	0	0
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)**
NET CARRYING AMOUNTS			
At December 31, 2018	23	614	637
AT DECEMBER 31, 2019	**21**	**816**	**837**

The future minimum lease payments arising from non-cancelable operating leases are as follows:

millions of € Maturity	Dec. 31, 2019
Within 1 year	876
In 1 to 2 years	589
In 2 to 3 years	32
In 3 to 4 years	365
In 4 to 5 years	21
After 5 years	697
	2,581

millions of €	
Maturity	Dec. 31, 2018
Within 1 year	704
In 1 to 3 years	448
In 3 to 5 years	311
After 5 years	452
	1,915

The increase in the future minimum lease payments mainly results from the higher number of cell sites and the related conclusion of new leases. Furthermore, the introduction of the IFRS 16 accounting standard also resulted in certain business models being classified as operating leases.

39 OTHER FINANCIAL OBLIGATIONS

The following table provides an overview of Deutsche Telekom's other financial obligations:

millions of €	**Dec. 31, 2019**			
	Total	Due within 1 year	Due > 1 year ≤ 5 years	Due > 5 years
Purchase commitments regarding property, plant and equipment	4,446	3,906	443	97
Purchase commitments regarding intangible assets	367	263	103	1
Firm purchase commitments for inventories	2,278	2,165	113	0
Other purchase commitments and similar obligations	15,342	7,968	6,044	1,330
Payment obligations to the Civil Service Pension Fund	2,111	336	1,086	689
Obligations from the acquisition of interests in other companies	23,616	23,616	0	0
Miscellaneous other obligations	47	3	14	30
	48,207	**38,257**	**7,803**	**2,147**

Obligations from the acquisition of interests in other companies mainly relate to the business combination of T-Mobile US and Sprint at USD 26.5 billion (EUR 23.6 billion) agreed on April 29, 2018; calculated as of the date of conclusion of the agreement. The item "Other purchase commitments and similar obligations" contains the obligation arising from the acquisition of the national media content rights (including various sublicensing rights) for the 2024 UEFA European Football Championship in the amount of EUR 0.2 billion.

For further information on agreed corporate transactions, please refer to the section "Summary of accounting policies – Changes in the composition of the Group and other transactions."

40 SHARE-BASED PAYMENT

SHARE MATCHING PLAN

Since the 2011 financial year, specific executives have been contractually obligated to invest a minimum of 10 percent 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 percent to 50 percent 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 percent and – since the 2019 financial year – a maximum of 50 percent of the target amount (100 percent) 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 2019 financial year, a total of 0.9 million (2018: 0.7 million) matching shares were allocated to beneficiaries of the plan at a weighted average fair value of EUR 12.06 (2018: EUR 10.64). The cost is to be recognized against the capital reserves pro rata temporis until the end of the service period and amounted to EUR 7.7 million in total for all tranches as of December 31, 2019 (December 31, 2018: EUR 6.1 million). In the reporting year, reserves were reduced by transfers of shares to plan participants in a total value of EUR 5.5 million (2018: EUR 2.6 million). The capital reserves recognized for the Share Matching Plan as of December 31, 2019 amounted to EUR 17.2 million (December 31, 2018: EUR 14.6 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 percent 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 2019 financial year, a total of 3.88 million (2018: 3.46 million) virtual shares were granted at a weighted average fair value of EUR 15.07 (2018: EUR 15.03). A plan must be remeasured at every reporting date until the end of the service period and expensed pro rata temporis. As of December 31, 2019, the cost of the long-term incentive plans amounted to EUR 50 million in total for all tranches (December 31, 2018: EUR 62 million). In 2019, the provision was utilized in the amount of EUR 76 million. The provision totaled EUR 125 million as of December 31, 2019 (December 31, 2018: EUR 151 million).

SHARE-BASED PAYMENT 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, 2019, there were 19 million T-Mobile US shares of common stock (December 31, 2018: 12 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, 2019	**11,010,635**	**57.66**
Granted	6,099,719	73.13
Vested	(5,862,128)	55.52
Forfeited	(745,015)	65.87
Non-vested as of December 31, 2019	**10,503,211**	**67.31**

Performance-based restricted stock units (PRSUs)

	Number of shares	Weighted average fair value at grant date USD
Non-vested as of January 1, 2019	**3,851,554**	**64.03**
Granted	1,046,792	73.98
Vested	(1,006,404)	52.47
Forfeited	(88,403)	62.02
Non-vested as of December 31, 2019	**3,803,539**	**69.78**

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 495 million as of December 31, 2019 (December 31, 2018: EUR 440 million).

Prior to the business combination, MetroPCS had established various stock option plans (predecessor plans). The MetroPCS stock options were adjusted in connection with the business combination. Following stockholder approval of T-Mobile US' 2013 Omnibus Incentive Plan, no new awards may be granted under the predecessor plan.

The plan 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, 2019	**284,811**	**14.58**	**3.8**
Exercised	(85,083)	15.94	
Forfeited/canceled	(4,786)	22.75	
Stock options outstanding at December 31, 2019	**194,942**	**13.80**	**2.9**
Stock options exercisable at December 31, 2019	180,966	13.48	2.6

The exercise of stock options generated cash inflows of EUR 1 million (USD 1 million) in the 2019 financial year (2018: EUR 3 million (USD 3 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 €

	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
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	FVOCI	5,390			5,390	
At fair value through profit or loss	FVTPL	4				4
Other financial assets						
Originated loans and other receivables						
At amortized cost	AC	4,282	4,282			
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	FVTPL	121				121
Equity instruments						
At fair value through other comprehensive income	FVOCI	293		293		
At fair value through profit or loss	FVTPL	22				22
Derivative financial assets						
Derivatives without a hedging relationship	FVTPL	893				893
Of which: termination rights embedded in bonds issued	FVTPL	630				630
Of which: energy forward agreements embedded in contracts	FVTPL	0				0
Derivatives with a hedging relationship	n.a.	1,439			287	1,152
Lease assets	n.a.	197				
Cash and cash equivalents and trade receivables 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	FVOCI	35		35		
LIABILITIES						
Trade payables	AC	9,431	9,431			
Bonds and other securitized liabilities	AC	51,644	51,644			
Liabilities to banks	AC	6,516	6,516			
Liabilities to non-banks from promissory note bonds	AC	699	699			
Other interest-bearing liabilities	AC	4,369	4,369			
Of which: collateral received	AC	1,273	1,273			
Other non-interest-bearing liabilities	AC	1,476	1,476			
Lease liabilities	n.a.	19,835				
Finance lease liabilities	n.a.	n.a.				
Derivative financial liabilities						
Derivatives without a hedging relationship	FVTPL	325				325
Of which: options granted to third parties for the purchase of shares in subsidiaries and associates	FVTPL	7				7
Of which: energy forward agreements embedded in contracts	FVTPL	146				146
Derivatives with a hedging relationship	n.a.	1,319			1,253	66
Trade payables directly associated with non-current assets and disposal groups held for sale	AC	29	29			

millions of €

	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
Of which: aggregated by measurement category in accordance with IFRS 9						
ASSETS						
Financial assets at amortized cost	AC	15,127	15,127			
Financial assets at fair value through other comprehensive income with recycling to profit or loss	FVOCI	5,390			5,390	
Financial assets at fair value through other comprehensive income without recycling to profit or loss	FVOCI	328		328		
Financial assets at fair value through profit or loss	FVTPL	1,040				1,040
LIABILITIES						
Financial liabilities at amortized cost	AC	74,164	74,164			
Financial liabilities at fair value through profit or loss	FVTPL	325				325

millions of €

					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[a]	Measure-ment category in accordance with IFRS 9	Carrying amount Dec. 31, 2018	Amor-tized cost	Fair value through other compre-hensive income without recycling to profit or loss	Fair value through other compre-hensive income with recycling to profit or loss	Fair value through profit or loss	Amounts recognized in the statement of financial position in accordance with IAS 17	Fair value Dec. 31, 2018[a]
ASSETS										
Cash and cash equivalents			AC	3,679	3,679					
Trade receivables										
At amortized cost			AC	4,280	4,280					
At fair value through other comprehensive income		5,390	FVOCI	5,703			5,703			5,703
At fair value through profit or loss		4	FVTPL	5				5		5
Other financial assets										
Originated loans and other receivables										
At amortized cost		4,317	AC	2,982	2,982					3,013
Of which: collateral paid			AC	299	299					
Of which: publicly funded projects			AC							
At fair value through other comprehensive income			FVOCI	0						0
At fair value through profit or loss		121	FVTPL	103				103		103
Equity instruments										
At fair value through other comprehensive income		293	FVOCI	324		324				324
At fair value through profit or loss		22	FVTPL	0						
Derivative financial assets										
Derivatives without a hedging relationship		893	FVTPL	597				597		597
Of which: termination rights embedded in bonds issued		630	FVTPL	99				99		99
Of which: energy forward agreements embedded in contracts		0	FVTPL	12				12		12
Derivatives with a hedging relationship		1,439	n.a.	273			5	268		273
Lease assets	197		n.a.	147					147	
Cash and cash equivalents and trade receivables directly associated with non-current assets and disposal groups held for sale			AC	27	27					
Equity instruments within non-current assets and disposal groups held for sale		35	FVOCI	34		34				34

[a] 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 9					
	Amounts recognized in the statement of financial position in accordance with IFRS 16	**Fair value Dec. 31, 2019**[a]	Measurement category in accordance with IFRS 9	Carrying amount Dec. 31, 2018	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 IAS 17	Fair value Dec. 31, 2018[a]
LIABILITIES										
Trade payables			AC	10,735	10,735					
Bonds and other securitized liabilities		56,357	AC	49,033	49,033					51,736
Liabilities to banks		6,572	AC	5,710	5,710					5,749
Liabilities to non-banks from promissory note bonds		799	AC	497	497					578
Other interest-bearing liabilities		4,506	AC	1,878	1,878					1,927
Of which: collateral received			AC	404	404					
Other non-interest-bearing liabilities			AC	1,608	1,608					
Lease liabilities	19,835		n.a.	n.a.						
Finance lease liabilities			n.a.	2,472					2,472	2,695
Derivative financial liabilities										
Derivatives without a hedging relationship		325	FVTPL	242				242		242
Of which: options granted to third parties for the purchase of shares in subsidiaries and associates		7	FVTPL	10				10		10
Of which: energy forward agreements embedded in contracts		146	FVTPL	52				52		52
Derivatives with a hedging relationship		1,319	n.a.	836			486	350		836
Trade payables directly associated with non-current assets and disposal groups held for sale			AC	36	36					

[a] 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, 2019[a]	Measurement category in accordance with IFRS 9	Carrying amount Dec. 31, 2018	Amounts recognized in the statement of financial position in accordance with IFRS 9				Amounts recognized in the statement of financial position in accordance with IAS 17	Fair value Dec. 31, 2018[a]
					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		
Of which: aggregated by measurement category in accordance with IFRS 9										
ASSETS										
Financial assets at amortized cost		4,317	AC	10,968	10,968					3,013
Financial assets at fair value through other comprehensive income with recycling to profit or loss		5,390	FVOCI	5,703			5,703			5,703
Financial assets at fair value through other comprehensive income without recycling to profit or loss		328	FVOCI	358		358				358
Financial assets at fair value through profit or loss		1,040	FVTPL	705				705		705
LIABILITIES										
Financial liabilities at amortized cost		68,234	AC	69,497	69,497					59,990
Financial liabilities at fair value through profit or loss		325	FVTPL	242				242		242

[a] The practical expedient under IFRS 7.29a was applied for information on specific fair values.

Trade receivables include receivables amounting to EUR 1.8 billion (December 31, 2018: EUR 1.7 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, 2019				Dec. 31, 2018			
	Level 1	Level 2	Level 3[a]	Total	Level 1	Level 2	Level 3	Total
ASSETS								
Originated loans and receivables		4,317		**4,317**		3,013		**3,013**
LIABILITIES								
Financial liabilities measured at amortized cost	40,460	27,144	630	**68,234**	41,342	18,548	100	**59,990**
Of which: bonds and other securitized liabilities	40,460	15,267	630	**56,357**	41,342	10,294	100	**51,736**
Of which: liabilities to banks		6,572		**6,572**		5,749		**5,749**
Of which: liabilities to non-banks from promissory notes		799		**799**		578		**578**
Of which: liabilities with the right of creditors to priority repayment in the event of default		0		**0**		0		**0**
Of which: other interest-bearing liabilities		4,506		**4,506**		1,927		**1,927**
Finance lease liabilities						2,695		**2,695**

[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, 2019				Dec. 31, 2018			
	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
ASSETS								
Trade receivables								
At fair value through other comprehensive income			5,390	**5,390**			5,703	**5,703**
At fair value through profit or loss			4	**4**			5	**5**
Other financial assets – Originated loans and other receivables								
At fair value through other comprehensive income				**0**				**0**
At fair value through profit or loss	114		7	**121**	93		10	**103**
Equity instruments								
At fair value through other comprehensive income			328	**328**			358	**358**
At fair value through profit or loss	22			**22**				**0**
Derivative financial assets								
Derivatives without a hedging relationship		263	630	**893**		486	111	**597**
Derivatives with a hedging relationship		1,439		**1,439**		273		**273**
LIABILITIES								
Derivative financial liabilities								
Derivatives without a hedging relationship		172	153	**325**		180	62	**242**
Derivatives with a hedging relationship		1,319		**1,319**		836		**836**

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.

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 €

	2019	2018
FAIR VALUE AS OF DECEMBER 31	**328**	**358**
Dividends recognized in profit/loss		
on investments divested in the reporting period	0	
on investments still held at the reporting date	0	3
Fair value at the derecognition date of instruments divested in the reporting period	225	91
Cumulative gains reclassified in the reporting period from other comprehensive income to retained earnings	82	
Of which: from the disposal of investments	60	
Of which: from the conversion of preference shares into common shares	22	
Cumulative losses reclassified in the reporting period from other comprehensive income to retained earnings	0	47
Of which: from the disposal of investments	0	47

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: 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, 2019	**358**	**99**	**12**	**(52)**
Additions (including first-time categorization as Level 3)	96	0	0	0
Decreases in fair value recognized in profit/loss (including losses on disposal)		(66)	(20)	(113)
Increases in fair value recognized in profit/loss (including gains on disposal)		594	8	20
Decreases in fair value recognized directly in equity	(29)			
Increases in fair value recognized directly in equity	128			
Disposals	(225)	0	0	0
Currency translation effects recognized directly in equity	0	3	0	(1)
CARRYING AMOUNT AS OF DECEMBER 31, 2019	**328**	**630**	**0**	**(146)**

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 313 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 35 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 190 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, 2019. In the case of investments with a carrying amount of EUR 71 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 52 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 3.3 and 8.4) were taken. The 25 percent quantile, the median, or the 75 percent 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 below. In addition, non-material individual items with a carrying amount of EUR 15 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 630 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 absolute figure used for the interest rate volatility at the current reporting date was between 1.0 and 1.9 percent. 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. The spreads used at the current reporting date were between 1.3 and 2.3 percent for the maturities of the bonds and between 0.5 and 1.0 percent for shorter terms. For the mean reversion input, which is likewise unobservable, 10 percent was used. 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. In the reporting period, net income of EUR 528 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. 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.

For the development of the carrying amounts in the reporting year, please refer to the table above.

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 liabilities at fair value through profit or loss: energy forward agreements embedded in contracts
Multiple next-level-up quantile	6		
Multiple next-level-down quantile	(16)		
Expected revenues +10%	4		
Expected revenues -10%	(4)		
Interest rate volatility[b] +10%		9	
Interest rate volatility[b] -10%		(10)	
Spread curve[c] +100 basis points		(269)	
Spread curve[c] -100 basis points		335	
Mean reversion[d] +100 basis points		(4)	
Mean reversion[d] -100 basis points		1	
Future energy prices +10%			62
Future energy prices -10%			(63)
Future energy output +5%			4
Future energy output -5%			(5)
Future prices for renewable energy credits[e] +100%			21
Future prices for renewable energy credits[e] from zero			(21)

[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.

[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.

With a carrying amount of EUR -146 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. 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 20 years from the commencement of commercial operation. In the case of two energy forward agreements, commercial operations have already begun; with the others, commercial operations are set to begin between 2020 and 2021. 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 2,899 gigawatt hours per year at the reporting date. The value of the derivatives is also significantly influenced by future energy prices, which are not observable for the period beyond around five years. 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 13.23/MWh and EUR 59.64/MWh when translated into euros and off-peak prices of between EUR 9.01/MWh and EUR 39.67/MWh when translated into euros. An average on-peak/off-peak ratio of 47 percent was used. In our opinion, the values used constitute the best estimate in each case. 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, a net expense of EUR 104 million (when translated into euros) was recognized under the Level 3 measurement in other operating income/expense for unrealized losses 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. 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 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 13 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 difference yet to be amortized in the income statement developed as follows during the reporting period:

Energy forward agreements

millions of €

	Development of the not yet amortized amounts	
	2019	2018
Measurement amounts on initial recognition	**151**	**112**
Measurement amounts on initial recognition (additions during the reporting period)	27	39
Measurement amounts amortized in profit or loss in prior periods	(3)	0
Measurement amounts amortized in profit or loss in the current reporting period	(6)	(3)
Currency translation adjustments	3	0
MEASUREMENT AMOUNTS NOT AMORTIZED AS OF DECEMBER 31	**172**	**148**

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 percent higher (lower) with no change in the reference variables, the fair values of the instruments would have been 1 percent lower (higher).

The financial liabilities measured at fair value through profit or loss and assigned to Level 3 include derivative financial liabilities with a carrying amount of EUR 7 million resulting from an option granted to third parties for the purchase of shares in an associate of Deutsche Telekom. The option was granted in connection with a sale of shares in this associate, and no notable fluctuations in value are expected. Due to their distinctiveness, the instruments assigned to Level 3 and described above constitute a separate class of financial instruments in each case.

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 translation	Impairments/ allowances	At fair value		
Debt instruments measured at amortized cost	2019	23	n.a.	662	(165)	n.a.	(41)	**479**
	2018	27	n.a.	1,059	(80)	n.a.	(145)	**861**
Debt instruments measured at fair value through profit or loss	2019	14	1	n.a.	n.a.	n.a.	6	**21**
	2018	10	0	n.a.	n.a.	n.a.	(3)	**7**
Debt instruments measured at fair value through other comprehensive income	2019	0	n.a.	n.a.	(257)	(26)	0	**(283)**
	2018	0	n.a.	n.a.	(322)	23	51	**(248)**
Equity instruments measured at fair value through profit or loss	2019	0	(6)	n.a.	n.a.	n.a.	(2)	**(8)**
	2018	0	0	n.a.	n.a.	n.a.	0	**0**
Equity instruments measured at fair value through other comprehensive income	2019	1	n.a.	n.a.	n.a.	99	n.a.	**100**
	2018	2	n.a.	n.a.	n.a.	(620)	n.a.	**(618)**
Derivatives measured at fair value through profit or loss	2019	n.a.	363	n.a.	n.a.	n.a.	n.a.	**363**
	2018	n.a.	(382)	n.a.	n.a.	n.a.	n.a.	**(382)**
Financial liabilities measured at amortized cost	2019	(1,768)	n.a.	(678)	n.a.	n.a.	n.a.	**(2,446)**
	2018	(1,820)	n.a.	(963)	n.a.	n.a.	n.a.	**(2,783)**
	2019	**(1,729)**	**358**	**(16)**	**(422)**	**73**	**(37)**	**(1,774)**
	2018	**(1,781)**	**(382)**	**96**	**(402)**	**(597)**	**(97)**	**(3,163)**

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 358 million) also includes interest and currency translation effects. The net currency translation gains on financial assets classified as debt instruments measured at amortized cost (EUR 662 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 losses on capital market liabilities of EUR 678 million. These include currency translation gains from derivatives that Deutsche Telekom used as hedging instruments for hedge accounting in foreign currency (EUR 179 million; 2018: EUR 143 million). Finance costs from financial liabilities measured at amortized cost (expense of EUR 1,768 million) primarily consist of interest expense on bonds and other (securitized) financial liabilities. The item also includes interest expenses from the accumulation of interest added back 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.

Non-interest-bearing securities or 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 fluctuations resulting from changes in exchange rates in accordance with IFRS 9. Volatility in 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 percent against all currencies at December 31, 2019, the hedging reserves in shareholders' equity and the fair values of the hedging instruments before taxes would have been EUR 4 million higher (lower) (December 31, 2018: EUR 14 million higher (lower)). The hypothetical effect of EUR 4 million on profit or loss primarily results from the currency sensitivities EUR/USD: EUR 12 million and EUR/GBP: EUR -8 million. If the euro had gained (lost) 10 percent against all currencies at December 31, 2019, other financial income and the fair value of the hedging instruments before taxes would have been EUR 52 million higher (lower) (December 31, 2018: EUR 40 million lower (higher)). The hypothetical effect of EUR 52 million on profit or loss primarily results from the currency sensitivities EUR/GBP: EUR 69 million, EUR/USD: EUR -18 million, and EUR/HUF: EUR 1 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 with issuer cancellation rights. The composition of the liabilities portfolio (ratio of fixed to variable) is managed by issuing primary (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 57 percent (2018: 63 percent) of the debt position denominated in euros had a variable rate of interest in 2019. In U.S. dollars, the variable-rate percentage decreased compared with 2018 from 17 percent to 16 percent. There were no significant fluctuations in the course of the reporting year.

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 fluctuations resulting from interest rate movements 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, these changes in value are 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, 2019, profit or loss before taxes would have been EUR 553 million (December 31, 2018: EUR 23 million) lower. If the market interest rates had been 100 basis points lower at December 31, 2019, profit or loss before taxes would have been EUR 617 million (December 31, 2018: EUR 70 million) higher. This simulation includes the effects from the financial instruments assigned to Level 3 described above. The hypothetical effect of EUR 617 million/EUR -553 million on income primarily results from the potential effects of EUR 585 million/EUR -521 million from interest rate derivatives, and EUR 32 million/EUR -32 million from non-derivative, variable-interest financial liabilities. 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. If the market interest rates had been 100 basis points higher (lower) at December 31, 2019, the hedging and revaluation reserves in equity before taxes would have been EUR 1,201 million higher (EUR 1,272 million lower) (December 31, 2018: EUR 673 million higher (EUR 672 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.

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)	2019	2018
Originated loans and other receivables	AC	4,282	2,952
	FVOCI	0	0
	FVTPL	121	103
Cash and cash equivalents	AC	5,392	3,679
Trade receivables	AC	5,452	4,280
	FVOCI	5,390	5,699
	FVTPL	4	5
Contract assets (IFRS 15)	n.a.	1,874	1,764
Lease receivables	n.a.	196	147

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 equiv-alents	Originated loans and other receivables		Cash and cash equiv-alents	Originated loans and other receivables		Cash and cash equiv-alents	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.
January 1, 2019	**0**	**(4)**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**(1,465)**	**(277)**	**(26)**	**0**
Reclassification due to a change in business model										66	(65)	0	
Additions								(8)		(384)	(242)	(20)	
Use										342	10	(1)	
Reversal										186	22	11	
Other										(59)			
Foreign currency effect													
DECEMBER 31, 2019	**0**	**(4)**	**0**	**0**	**0**	**0**	**0**	**(8)**	**0**	**(1,314)**	**(552)**	**(36)**	**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, 2019					Dec. 31, 2018				
	Contractual obligations fulfilled to date	Disruptions in performance already occurred	Non-performing	**Total**	Depreciation, amortization and impairment losses	Contractual obligations fulfilled to date	Disruptions in performance already occurred	Non-performing	**Total**	Depreciation, amortization and impairment losses
GENERAL APPROACH (SHORT TERM)										
12-month expected credit losses (stage 1)	8,224			**8,224**		6,167			**6,167**	
Lifetime expected credit losses										
Significant increase in credit risk, but not credit-impaired (stage 2)		103		**103**			9		**9**	
Credit-impaired at the reporting date, but not purchased or originated credit-impaired (stage 3)			28	**28**	(4)			30	**30**	
	8,224	**103**	**28**	**8,355**	**(4)**	**6,167**	**9**	**30**	**6,206**	**0**
GENERAL APPROACH (LONG TERM)										
12-month expected credit losses (stage 1)	1,326			**1,326**		455			**455**	
Lifetime expected credit losses		1		**1**						
Significant increase in credit risk, but not credit-impaired (stage 2)			0	**0**					**0**	
Credit-impaired at the reporting date, but not purchased or originated credit-impaired (stage 3)				**0**					**0**	
	1,326	**1**	**0**	**1,327**	**0**	**455**	**0**	**0**	**455**	**0**
SIMPLIFIED APPROACH										
Trade receivables	11,083	434	1,159	**12,676**	(100)	8,759	448	776	**9,983**	(98)
Contract assets	1,901	1	7	**1,909**	(7)	1,757	8	0	**1,765**	(2)
Lease receivables	197			**197**		130	14	3	**147**	0
	13,181	**435**	**1,166**	**14,782**	**(107)**	**10,646**	**470**	**779**	**11,895**	**(100)**
FINANCIAL ASSETS THAT ARE PURCHASED OR ORIGINATED CREDIT-IMPAIRED										
Receivables	4			**4**					**0**	
	22,735	**539**	**1,194**	**24,468**	**(111)**	**17,268**	**479**	**809**	**18,556**	**(100)**

Gain/loss on full write-off of trade receivables

millions of €

	2019	2018	2017
Expenses for full write-off of receivables	53	139	81
Income from recoveries on receivables written off	11	20	105

Offsetting of financial instruments

millions of €

	Dec. 31, 2019				Dec. 31, 2018			
	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	202	208	1,702	1,491	376	424	759	1,016
Amounts set off in the statement of financial position in accordance with IAS 32.42	(98)	(98)			(137)	(137)		
Net amounts presented in the statement of financial position	**104**	**110**	**1,702**	**1,491**	**239**	**287**	**759**	**1,016**
Amounts subject to enforceable master netting arrangements or similar agreements and not meeting all offsetting requirements in accordance with IAS 32.42	**(37)**	**(37)**	**(1,653)**	**(1,000)**	**(27)**	**(27)**	**(733)**	**(618)**
Of which: amounts related to recognized financial instruments	(37)	(37)	(446)	(446)	(27)	(27)	(333)	(333)
Of which: amounts related to financial collateral (including cash collateral)			(1,207)	(554)			(400)	(285)
NET AMOUNTS	**67**	**73**	**49**	**491**	**212**	**260**	**26**	**398**

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 554 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.

According to agreement, no cash collateral was provided for interest rate swaps concluded by T-Mobile US with a nominal value of EUR 4.0 billion (when translated into euros).

The fair values of the unhedged interest rate swaps at the reporting date were negative in each case from the perspective of T-Mobile US (total value of EUR -490 million (when translated into euros)).

In accordance with the terms of bonds issued by T-Mobile US, T-Mobile US has the right to terminate the 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.

There were no other significant agreements reducing the maximum exposure to the credit risks of financial assets. The maximum exposure to credit risk of the other financial assets thus corresponds to their carrying amounts.

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 2020 through 2033. In the case of rolling cash flow hedges for 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; rolling foreign currency hedges are 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 2019. 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 €

	2020				
	Nominal amount	Average hedge rate	Average swap rate received	Average swap rate paid	Average margin paid
FAIR VALUE HEDGES					
Interest rate risk					
EURIBOR	4,615		0.3649%	6M EURIBOR	0.0000%
USD LIBOR					
GBP LIBOR					
Cross-currency risk					
USD/EUR					
GBP/EUR					
Other					
CASH FLOW HEDGES					
Currency risk					
Buy					
USD/EUR	247	1.1102			
GBP/EUR	83	0.8362			
Other	29				
Sell					
USD/EUR	173	1.0632			
Interest rate risk					
EURIBOR					
USD LIBOR					

millions of €

	2021–2024				
	Nominal amount	Average hedge rate	Average swap rate received	Average swap rate paid	Average margin paid
FAIR VALUE HEDGES					
Interest rate risk					
EURIBOR	6,453		0.6228%	6M EURIBOR	0.3186%
USD LIBOR	2,449		2.4249%	3M USD LIBOR	0.8962%
GBP LIBOR	352		1.2500%	3M GBP LIBOR	0.7870%
Cross-currency risk					
USD/EUR					
GBP/EUR					
Other	79				
CASH FLOW HEDGES					
Currency risk					
Buy					
USD/EUR	3	1.1373			
GBP/EUR	770	0.9072	6.5000%	6.5718%	
Other	24				
Sell					
USD/EUR	197	1.0990			
Interest rate risk					
EURIBOR	7,178		6M EURIBOR	-0.2099%	0.3263%
USD LIBOR	3,562		3M USD LIBOR	4.9986%	3.0242%

millions of €	2025 and thereafter				
	Nominal amount	Average hedge rate	Average swap rate received	Average swap rate paid	Average margin paid
FAIR VALUE HEDGES					
Interest rate risk					
EURIBOR	9,200		1.4384%	6M EURIBOR	0.7661%
USD LIBOR	3,665		4.3042%	3M USD LIBOR	1.5948%
GBP LIBOR	470		2.5590%	6M GBP LIBOR	0.6477%
Cross-currency risk					
USD/EUR	1,557	1.1221	8.7500%	3M EURIBOR	5.8751%
GBP/EUR	796	0.8799	2.8571%	3M EURIBOR	1.0062%
Other	481				
CASH FLOW HEDGES					
Currency risk					
Buy					
USD/EUR	1,758	1.3620	8.7863%	7.7873%	
GBP/EUR	441	0.9122	7.9388%	7.5811%	
Other					
Sell					
USD/EUR					
Interest rate risk					
EURIBOR	1,000		6M EURIBOR	0.1120%	0.5966%
USD LIBOR	10,998		3M USD LIBOR	3.6857%	0.5350%

Nominal and carrying amounts of derivative financial instruments in hedging relationships

millions of €

	2019					2018					
	Nominal amount of the hedging instruments		Carrying amount of the hedging instruments		Change in value of the hedging instruments in the reporting period for determining ineffectiveness	Nominal amount of the hedging instruments		Carrying amount of the hedging instruments		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
	in foreign currencies	in euros	Financial assets	Financial liabilities		in foreign currencies	in euros	Financial assets	Financial liabilities		
FAIR VALUE HEDGES											
Interest rate risk		27,204	1,029	(39)	783		23,705	264	(129)	85	Other financial assets/ financial liabilities
Of which: EUR		20,268					16,374				
Of which: USD	6,865	6,114				7,500	6,549				
Of which: GPB	700	822				700	782				
Cross-currency risk		2,912	124	(26)	257		2,373	4	(221)	43	Other financial assets/ financial liabilities
Of which: USD	1,747	1,557				1,747	1,557				
Of which: GPB	700	796				300	339				
Of which: other		560					478				
CASH FLOW HEDGES											
Currency risk		3,725	166	(18)	251		4,121	5	(95)	(107)	Other financial assets/ financial liabilities
Buy											
USD/EUR	2,580	2,008				2,584	2,004				
GBP/EUR	1,171	1,294				1,429	1,574				
Other		52					70				
Sell											
USD/EUR	416	371				540	473				
Interest rate risk		22,739	120	(1,235)	(747)		8,383		(391)	(391)	Other financial assets/ financial liabilities
USD LIBOR	16,350	14,561				9,600	8,383				
EURIBOR		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 adjustment)	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)	Presentation of the hedged items in the statement of financial position
FAIR VALUE HEDGES								Financial liabilities
Interest rate risk	**2019**	28,019	857	(774)	304	n.a.	n.a.	
	2018	23,749	62	(67)	319	n.a.	n.a.	
Cross-currency risk	**2019**	2,981	24	(299)	0	n.a.	n.a.	
	2018	2,102	(254)	(13)	0	n.a.	n.a.	
CASH FLOW HEDGES								n.a.
Currency risk	**2019**	n.a.	n.a.	(244)	n.a.	83	8	
	2018	n.a.	n.a.	103	n.a.	(19)	8	
Interest rate risk	**2019**	n.a.	n.a.	727	n.a.	(1,140)	0	
	2018	n.a.	n.a.	393	n.a.	(393)	(16)	
HEDGE OF NET INVESTMENT								n.a.
Currency risk	**2019**	n.a.	n.a.	0	n.a.	794	n.a.	
	2018	n.a.	n.a.	0	n.a.	0	794	

[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 (dedesignated 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	**2019**	9	n.a.	n.a.	n.a.	n.a.		
	2018	18	n.a.	n.a.	n.a.	n.a.		
Cross-currency risk	**2019**	(42)	n.a.	n.a.	n.a.	n.a.		
	2018	30	n.a.	n.a.	n.a.	n.a.		
CASH FLOW HEDGES							Net revenue/ goods and services purchased/ other financial income (expense)	Other financial income (expense)
Currency risk	**2019**	7	244	(143)	0	101		
	2018	(4)	11	(114)	0	(103)		
Interest rate risk	**2019**	(20)	(727)	(21)	16	(732)	Interest expense	
	2018	(1)	(393)	0	82	(311)		

[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, 2019	(10)	(409)	794	375	58	433
Changes recognized directly in equity	244	(727)	0	(483)	(9)	(492)
Reclassification to profit or loss due to occurrence of the hedged item	(143)	(5)	0	(148)	2	(146)
BALANCE AT DECEMBER 31, 2019	**91**	**(1,141)**	**794**	**(256)**	**51**	**(205)**

[a] Figures include non-controlling interests.

[b] In the 2018 and 2019 financial years, 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, 2019	Net carrying amounts Dec. 31, 2018
ASSETS		
Interest rate swaps		
Without a hedging relationship	6	121
In connection with fair value hedges	1,029	264
In connection with cash flow hedges	120	0
Currency forwards/currency swaps		
Without a hedging relationship	49	24
In connection with cash flow hedges	5	2
Cross-currency swaps		
Without a hedging relationship	206	339
In connection with fair value hedges	124	4
In connection with cash flow hedges	161	3
Other derivatives in connection with cash flow hedges	0	0
Other derivatives without a hedging relationship	3	2
Embedded derivatives	630	112
LIABILITIES		
Interest rate swaps		
Without a hedging relationship	34	31
In connection with fair value hedges	39	128
In connection with cash flow hedges	1,235	391
Currency forwards/currency swaps		
Without a hedging relationship	59	36
In connection with cash flow hedges	4	3
In connection with net investment hedges	0	0
Cross-currency swaps		
Without a hedging relationship	78	112
In connection with fair value hedges	26	221
In connection with cash flow hedges	14	91
Other derivatives in connection with cash flow hedges	0	0
Other derivatives without a hedging relationship	7	12
Embedded derivatives	146	52

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 management against payment for the receivables sold. For the disclosures on the receivables sold, please refer to the table below. Expenses of EUR 24 million (EUR 230 million on a cumulative basis since commencement of the agreement) were recognized for a factoring agreement that expired in the 2019 financial year.

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 such 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. Expenses of EUR 4 million (EUR 68 million on a cumulative basis since commencement of the agreement) were recognized for factoring agreements terminated in the financial year.

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 creditor for 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 a bank and two other structured entities. Deutsche Telekom does not consolidate these other structured entities either because it likewise has no control over these entities' relevant activities. The two 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. The increase in the contractual maximum volume compared with the previous year results from the possibility to sell additional credit classes in a transaction at otherwise unchanged conditions. 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 a 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.

On January 16, 2020, a factoring agreement existing at the reporting date for the revolving sale of trade receivables from consumers and business customers relating to charges already due ended when the contract expired. The receivables with an aggregate nominal volume of EUR 840 million that had been sold directly to buyers outside the Group and had not yet been paid by the customers were bought back when the agreement ended. Receivables that had arisen, been sold, and been derecognized up to and including the reporting date December 31, 2019 were bought back at fair value and are recognized in this amount. Receivables that had arisen and been sold from January 1, 2020 were bought back at their nominal amount, no longer derecognized, and are recognized at the transaction price. Since there is no longer an intention to sell the portfolio of bought-back receivables in the future, the receivables are measured at amortized cost.

Transfer of financial assets

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**

millions of €	2018					
	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	Full transfer of the credit risk and full retention of the 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	2020–2022	2022	2019	2019–2023	2019–2022	
Contractual maximum volume	197	250	620	4,734	925	**6,726**
Purchase prices to be paid immediately	197	250	390	2,115	925	**3,877**
Volume of receivables sold as of the reporting date	133	285	393	2,949	904	**4,664**
Scope of volume of receivables sold in the reporting year	62–147	144–285	92–420	1,708–2,161	881–1,120	
Provision for receivables management	0	2	0	0	4	**6**
CONTINUING INVOLVEMENT						
Maximum credit risk (before credit insurance)			87	584	46	**717**
Credit insurance	33		150		17	**200**
Maximum late-payment risk		1	5	75	3	**84**
Carrying amount of the continuing involvement (asset side)			0	659	49	**708**
Carrying amount of the associated liability			1	681	80	**762**
Fair value of the associated liability			1	22	31	**54**
BUY-BACK AGREEMENTS						
Nominal value of receivables that can be bought back at the nominal amount			379	2,822	–	**3,201**
Nominal value of receivables that can be bought back at the collected amount			15	127	814	**956**
PURCHASE PRICE DISCOUNTS RECOGNIZED IN PROFIT OR LOSS, PROGRAM FEES, AND PRO-RATA LOSS ALLOCATIONS						
Prior reporting year	1	37	8	187	53	**286**
Cumulative since commencement of the agreement	3	206	68	824	290	**1,391**

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 2.65x at December 31, 2019 (December 31, 2018: 2.4x). The target corridor for relative debt has shifted from 2.00 to 2.50x to 2.25 to 2.75x on account of the mandatory first-time application of the IFRS 16 accounting standard as of January 1, 2019. 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 27.1 percent as of December 31, 2019 (December 31, 2018: 29.9 percent). The target corridor remains unchanged between 25 and 35 percent. In addition, Deutsche Telekom maintains a liquidity reserve covering all maturities of the next 24 months.

For further information, please refer to the section "Management of the Group" in the combined management report.

millions of €

	Dec. 31, 2019	Dec. 31, 2018
Financial liabilities (current)	11,463	10,527
Financial liabilities (non-current)	54,886	51,748
Lease liabilities	19,835	n.a.
FINANCIAL LIABILITIES AND LEASE LIABILITIES	**86,184**	**62,275**
Accrued interest	(748)	(719)
Other	(739)	(928)
GROSS DEBT	**84,697**	**60,628**
Cash and cash equivalents	5,393	3,679
Derivative financial assets	2,333	870
Other financial assets	940	654
NET DEBT	**76,031**	**55,425**

The IFRS 16 "Leases" accounting standard has been applied since January 1, 2019. The prior-year figures have been adjusted. Financial liabilities included finance lease liabilities in accordance with IAS 17 for the last time as of December 31, 2018.

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 percent (December 31, 2018: 31.9 percent) 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 Federal Network Agency. The acquisition of mobile spectrum through licenses may result in build-out requirements.

The Federal Posts and Telecommunications Agency (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 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 2019 financial year, Deutsche Telekom made payments in the amount of EUR 146 million (2018: EUR 123 million; 2017: EUR 94 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.

In May 2019, Deutsche Telekom acquired four frequency blocks in the 2 GHz band and nine lots in the 3.6 GHz band worth a total of EUR 2.17 billion, which the Federal Network Agency auctioned off on behalf of the Federal Republic of Germany. With the auction now over, Telekom Deutschland has filed an application with the Federal Network Agency on using the spectrum to begin building out the 5G network across Germany. In place of a lump-sum payment, government representatives agreed to the payment of the purchase price in annual installments from 2019 through September 13, 2030. Payment by installment was granted on the condition that Deutsche Telekom assumes additional build-out obligations. Deutsche Telekom must build out an additional 333 sites. Build-out obligations were recognized as liabilities in the amount of the financing advantage of EUR 59 million.

Deutsche Telekom Trust e.V. On August 14, 2019, the 11.34 percent stake in Ströer SE & Co. KGaA, which was worth EUR 0.4 million at the time, was transferred to the Group's own trust, Deutsche Telekom Trust e.V., where it will serve as plan assets to cover pension entitlements.

There are no material revenue, receivables, or liabilities from or to **joint ventures**.

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 19.9 million (2018: EUR 17.7 million) and expenses for other long-term benefits amounted to EUR 4.4 million (2018: EUR 5.2 million). Service cost of EUR 2.4 million (2018: EUR 2.8 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 (2018: EUR 1.5 million). No termination benefits were expensed in 2019 or 2018.

As of December 31, 2019, Deutsche Telekom recognized provisions for Board of Management and Supervisory Board compensation from short-term benefits of EUR 11.4 million (2018: EUR 10.2 million) and from other long-term benefits of EUR 10.3 million (2018: EUR 11.3 million). Furthermore, the present value of the defined benefit obligation (DBO) from the Board of Management pension amounts to EUR 27.1 million (2018: EUR 23.9 million).

The compensation of the Board of Management and the Supervisory Board totaled EUR 29.0 million in the reporting year (2018: EUR 30.4 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 2019 financial year

Total compensation of the members of the Board of Management for the 2019 financial year amounted to EUR 23.3 million (2018: EUR 24.6 million). This includes a total of 233,290 entitlements to matching shares with a fair value of EUR 2.7 million on the date granted (2018: EUR 2.3 million).

Former members of the Board of Management

A total of EUR 8.8 million (2018: EUR 8.1 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 213.4 million (2018: EUR 198.6 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 2019 amounted to EUR 2,888,500.00 (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

No significant events took place after the end of the reporting period.

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 2019 financial year:

millions of €	2019
Auditing services	12
Other assurance services	1
Tax advisory services	0
Other non-audit services	1
	14

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, the review of the interim financial statements, auditing activities in connection with the implementation of new accounting provisions, and the auditing of information systems and processes, as well as fees for other auditing services.

The fees recognized under other assurance services relate primarily to services in connection with regulatory requirements stipulated by the Federal Network Agency and with 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 10, 2020

Deutsche Telekom AG
Board of Management

Timotheus Höttges

Adel Al-Saleh	Birgit Bohle	Srini Gopalan	Dr. Christian P. Illek
Dr. Thomas Kremer	Thorsten Langheim	Claudia Nemat	Dr. Dirk Wössner

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 of financial position as at December 31, 2019, and the consolidated income statement, consolidated statement of comprehensive income, consolidated statement of changes in equity and consolidated statement of cash flows for the financial year from January 1 to December 31, 2019, 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, 2019. 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 accordance with the German legal requirements.

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, 2019, and of its financial performance for the financial year from January 1 to December 31, 2019, 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 § 322 Abs. 3 Satz [sentence] 1 HGB, 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, 2019. 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 | Effects of the first-time application of IFRS 16 on the accounting of leases for Deutsche Telekom as lessee

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 146.0 billion are reported in the consolidated financial statements of Deutsche Telekom Aktiengesellschaft. Goodwill amounting to EUR 12.4 billion (7.3% 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) once a year or if 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" is determined on the basis of the listed share price of T-Mobile US, Inc. The other measurements are based on budget projections of the individual units, which in turn are based on the financial budgets approved by the executive directors. The discount rate used is the weighted average cost of capital for the respective unit. Furthermore, the carrying amount of the respective unit was impacted by the first-time application of the new International Financial Reporting Standard 16 – Leases (IFRS 16) in the financial year, and corresponding adjustments had to be made to the budget projections and discount rate used for that unit. The impairment tests conducted on goodwill determined that no impairments were necessary in financial year 2019.

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 the non-current assets need to be tested for impairment. As of December 31, 2019, impairment tests were carried out on the units Romania – Fixed network and Romania – Mobile communications due to business development that was worse than expected on the back of intense competition. The budget projections prepared by the executive directors of the units and the discount rates applied for the units were used to calculate the recoverable amounts of the units on the basis of fair value less costs to sell. The impairment loss calculated on this basis was allocated to the tested assets of the units pro rata based on the carrying amounts, with their respective fair values serving as a floor. This resulted in the recognition of EUR 298 million in impairment of property, plant and equipment, and EUR 22 million in impairment of intangible assets.

The result of the measurements 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 planning value drivers. In this context, we also assessed whether the costs of 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 applied can in some cases have material effects on values, we also focused our testing on the parameters used to determine the discount rate applied, and evaluated the measurement model. In assessing the measurements, we also evaluated the adjustments to the budget projections and the discount rate for the respective unit due to the first-time application of IFRS 16. 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 conduction of the 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 80.5 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 as well as other relevant systems supporting the accounting treatment of revenue, as well as 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 inherent audit risk 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 | Effects of the first-time application of IFRS 16 on the accounting of leases for Deutsche Telekom as lessee

1 | In the Company's consolidated financial statements right-of-use assets of EUR 18.0 billion and lease liabilities of EUR 19.8 billion are reported as of the balance sheet date. Thus, lease liabilities represent 11.6% of total assets. In the financial year, the first-time application of the new accounting standard relating to leases, International Financial Reporting Standard 16 – Leases (IFRS 16), resulted in material effects on the opening balance sheet figures and their updating throughout the financial year, in particular for Deutsche Telekom as lessee. The modified retrospective approach was applied for the initial application of IFRS 16. The comparable figures from the prior year's periods were not adjusted. Due to the large volume of leases and transactions resulting from them, the Company has established group-wide processes and controls for the complete and accurate recording of the leases. Furthermore, the first-time application required the implementation of IT systems to account for these leases. The new IFRS 16 accounting standard necessitates that executive directors make estimates and judgmental decisions for certain areas which have been assessed in the context of our audit. In particular, this relates to estimates and judgmental decisions regarding exercising options with implications for the term of the leasing arrangement and in determining the payments to be taken into consideration in measuring the lease liability. Against this background and due to the complexity of the new requirements set forth in IFRS 16, the accounting of leases for Deutsche Telekom as lessee was of particular significance within the course of our audit.

2 | As part of our audit, we assessed, among other things, the appropriateness and operating effectiveness of the processes and controls established by the Group to record its leases. This also applies to the implementation of the IT systems to account for the leases and to the required adjustments made to existing systems in order to process the relevant transactions.

In addition, as part of our audit we assessed the impact of the first-time application of IFRS 16. We assessed the implementation work and evaluated the design of the processes set up to account for the transactions in accordance with IFRS 16 and of the IT systems in place to support the implementation of the new requirements. We inspected the lease agreements on a sample basis, verified the identification of lease and non-lease components and the determination of payments to be taken into consideration in measuring the lease liability, and assessed whether these were completely and accurately entered into the newly implemented systems to record leases. In particular, we interviewed Company employees and inspected the appropriate evidence to assess the estimates regarding the exercise of options impacting the lease term. Applying consistent audit procedures during the audit of subsidiaries ensured that we reacted appropriately to the complexity of implementing IFRS 16.

We were able to satisfy ourselves that the systems and processes established for subsequent measurement and adjusted to IFRS 16 as well as the implemented controls are appropriate. Furthermore, we were able to assess that the estimates and assumptions made by the executive directors are sufficiently documented and substantiated to ensure that leases are properly accounted for under the first-time application of IFRS 16.

3 | The Company’s disclosures relating to the accounting treatment of leases 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 sections "8 – Right-of-use assets – lessee relationships" and "13 – Financial liabilities and lease liabilities" of the "Notes to the consolidated statement of financial position" chapter, as well as "27 – Depreciation, amortization and impairment losses" and "28 – Finance costs" of the "Notes to the consolidated income statement" chapter of the notes to the consolidated financial statements. The disclosures on the initial impact of the first-time application of IFRS 16 are presented in the section entitled "Initial application of standards, interpretations and amendments in the financial year" in the "Accounting policies" chapter 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

Further Information pursuant to Article 10 of the EU Audit Regulation

We were elected as group auditor by the annual general meeting on March 28, 2019. We were engaged by the supervisory board on August 6, 2019. 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 am Main, February 10, 2020

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 2019

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)

LOTHAR SCHRÖDER
Member of the Supervisory Board since June 22, 2006
Deputy Chairman of the Supervisory Board since June 29, 2006
Member of the ver.di National Executive Board, Berlin, until September 25, 2019
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 AG, Bonn, Deputy Chairman of the Supervisory Board (9/2016 to 8/2019)
- Deutsche Telekom Services Europe SE, Bonn (since 8/2019), Deputy Chairman of the Supervisory Board (since 11/2019)

JOSEF BEDNARSKI
Member of the Supervisory Board since November 26, 2013
Chairman of the Group Works Council at Deutsche Telekom AG, Bonn
– No other seats –

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
Member of the Board of Management of Allianz SE, Munich, until December 31, 2019

Seats on the supervisory boards of other companies:

- Allianz Beratungs- und Vertriebs-AG, Munich (since 3/2018)[a]
- Allianz Deutschland AG, Munich (since 3/2016)[a]
- Allianz Global Corporate & Specialty SE, Munich, Deputy Chairwoman of the Supervisory Board (since 5/2013)[a]
- Allianz Private Krankenversicherungs-AG, Munich (since 3/2018)[a]
- Allianz Versicherungs-AG, Munich, Chairwoman of the Supervisory Board (since 11/2019)[a]

Member of comparable supervisory bodies of business enterprises in Germany or abroad:

- Allianz Compañia de Seguros y Reaseguros S.A., Barcelona, Spain, Member of the Board of Directors (5/2012 to 12/2019)[a]
- Companhia de Seguros Allianz Portugal S.A., Lisbon, Portugal, Member of the Board of Directors (3/2012 to 12/2019)[a]

PROF. DR. MICHAEL KASCHKE

Member of the Supervisory Board since April 22, 2015
CEO & President of Carl Zeiss AG, Oberkochen

Seats on the supervisory boards of other companies:

- Carl Zeiss Meditec AG, Jena, Chairman of the Supervisory Board (since 3/2010)[a]
- Carl Zeiss Industrielle Messtechnik GmbH, Oberkochen, Chairman of the Supervisory Board (since 1/2014)[a]
- Carl Zeiss SMT GmbH, Oberkochen, Chairman of the Supervisory Board (1/2011 to 10/2019)[a]
- 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 (since 1/2017)[a]
- Carl Zeiss Far East Co., Ltd., Hong Kong, China, Chairman of the Board of Directors (since 4/2002)[a]
- Carl Zeiss India (Bangalore) Private Ltd., Bangalore, India, Chairman of the Board of Directors (since 12/2009)[a]
- Carl Zeiss Pte. Ltd., Singapore, Singapore, Member of the Board of Directors (since 4/2002)[a]
- Carl Zeiss (Shanghai) Co., Ltd., Shanghai, China, Member of the Board of Directors (since 6/2017)[a]

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:

- Bank Gutmann Aktiengesellschaft, Vienna, Austria, Member of the Supervisory Board (9/2010 to 6/2019)
- Coca Cola European Partners plc, London, United Kingdom (since 5/2019)
- Landeskreditbank Baden-Württemberg – Förderbank (L-Bank) (regional state bank/development bank of Baden-Württemberg), Karlsruhe, agency under public law (not a commercial enterprise within the meaning of § 100 (2) sentence 1 no. 1 AktG), Member of the Advisory Board, purely advisory body (7/2004 to 7/2019)
- Unibail-Rodamco SE, Paris, France, Member of the Supervisory Board (since 5/2014)

[a] Supervisory board seats in companies that are part of the same group, as defined in § 100 (2) sentence 2 AktG (German Stock Corporation Act).

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
Deputy Chairwoman of the Group Executive Staff Representation Committee of Deutsche Telekom AG, Bonn
Chairwoman of the Executive Staff Representation Committee of T-Systems International GmbH, Frankfurt/Main

Member of the supervisory boards of subsidiaries, associates, and joint ventures:
- T-Systems International GmbH, Frankfurt/Main (since 12/2010)

HARALD KRÜGER
Member of the Supervisory Board since May 17, 2018
Chairman of the Board of Management of Bayerische Motoren Werke AG, Munich, until August 15, 2019
– No other seats –

FRANK SAUERLAND
Member of the Supervisory Board since November 20, 2018
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)

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 (since 5/2011), Chairman of the Supervisory Board (since 1/2018)
- Münchener Rückversicherungs-Gesellschaft Aktiengesellschaft in München, Munich (since 4/2019)
- Siemens Healthineers AG, Erlangen (since 3/2018)
- WITTENSTEIN SE, Igersheim (9/2017 to 3/2019)

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 –

MEMBERS OF THE BOARD OF MANAGEMENT OF DEUTSCHE TELEKOM AG IN 2019

TIMOTHEUS HÖTTGES

Chairman of the Board of Management since January 1, 2014

Seats on the supervisory boards of other companies:

- 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 (since 1/2016)

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

– No other seats –

BIRGIT BOHLE

Board member responsible for Human Resources and Legal Affairs, and Labor Director since January 1, 2020
Board member responsible for Human Resources, and Labor Director from January 1, 2019 to December 31, 2019

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 Europe since January 1, 2017

Member of the supervisory boards of subsidiaries, associates, and joint ventures:

- Hellenic Telecommunications Organization S.A. (OTE S.A.), Marousi, Athens, Greece (since 1/2017)
- T-Mobile Polska S.A., Warsaw, Poland (since 1/2017), Chairman of the Supervisory Board (since 1/2017)
- T-Mobile US, Inc., Bellevue, United States, Member of the Board of Directors (since 6/2019)

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), Chairman of the Board of Directors (1/2019 to 12/2019)
- Deutsche Telekom Services Europe AG, Bonn, Chairman of the Supervisory Board (1/2019 to 8/2019)
- 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)

DR. THOMAS KREMER

Board member responsible for Data Privacy, Legal Affairs and Compliance since June 1, 2012

Member of the supervisory boards of subsidiaries, associates, and joint ventures:

- T-Systems International GmbH, Frankfurt/Main (since 5/2015)

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:

- DFMG Deutsche Funkturm GmbH, Münster (9/2016 to 7/2019)
- 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)

CLAUDIA NEMAT

Board member responsible for Technology and Innovation since January 1, 2017

Seats on the supervisory boards of other companies:

- Airbus Group SE, Leiden, Netherlands (since 5/2016)
- Airbus Defence and Space GmbH, Ottobrunn (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)

DR. DIRK WÖSSNER

Board member responsible for Germany since January 1, 2018

Member of the supervisory boards of subsidiaries, associates, and joint ventures:

- Deutsche Telekom Außendienst GmbH, Bonn, Chairman of the Supervisory Board (since 1/2018)
- Deutsche Telekom Geschäftskunden-Vertrieb GmbH, Bonn (since 1/2018), Chairman of the Supervisory Board (since 2/2018)
- Deutsche Telekom Service GmbH, Bonn, Chairman of the Supervisory Board (since 1/2018)
- Deutsche Telekom Technik GmbH, Bonn, Chairman of the Supervisory Board (since 1/2018)
- Deutsche Telekom Privatkunden-Vertrieb GmbH, Bonn, Chairman of the Supervisory Board (since 1/2018)

GLOSSARY

4G. Refers to the fourth-generation mobile communications standard that supports higher transmission rates (see LTE).

5G. New communications standard, which offers data rates in the gigabit range, converges fixed-network and mobile communications, and supports the Internet of Things – rollout starting 2020.

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).

AT&T transaction. For details on the AT&T transaction relating to T-Mobile US and the effects of the termination of the agreement on the sale of the former T-Mobile US to AT&T, please refer to the 2011 Annual Report (in particular pages 76 and 182 et seq.).

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. CDP is an initiative involving more than 822 institutional investors with total investment assets of 95 trillion U.S. dollars (as of 2015). The CDP aims to promote dialog between investors and companies on climate change issues. Currently, some 11,000 (as of 2013) of the world's largest companies are involved in the project and provide information 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.

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.

FMCC – Fixed-Mobile Cloud Convergence. The merging of telecommunications and ICT solutions for small and medium-sized enterprises. Mobile communications, fixed network, mobile internet, broadband internet, and cloud/ICT products are bundled in one rate plan.

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. New generation of 4G mobile communications technology using, for example, wireless spectrum on the 800 MHz band freed up by the digitization 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, and facilitates new services for cell phones, smartphones, and tablets.

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, e.g., 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 WhatsApp.

Postpaid. Customers who pay for communication services after receiving them (usually on a monthly basis).

Prepay/prepaid. In contrast to postpaid contracts, prepay 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 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. The Science Based Targets initiative 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). The Sustainable Development Goals 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.

Wholesale bundled lines – IP-Bitstream Access/IP-BSA. Wholesale product for which Deutsche Telekom leases DSL lines to the competitor and transports the datastream via its concentrator network to the associated broadband point of presence (PoP), where the datastream is handed over to the competitor. In contrast to voluntary DSL resale, IP-BSA is a wholesale service required by the regulatory authority. This product is available in conjunction with a Deutsche Telekom PSTN line or as a DSL stand-alone variant (see also Wholesale unbundled lines).

Wholesale unbundled lines – such as IP-BSA Stand Alone/ IP-BSA SA. Wholesale product not bundled with a Deutsche Telekom PSTN line, which allows competitors to offer an all-IP product range to end customers.

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, EBITDA margin, adjusted EBITDA, adjusted EBITDA AL, adjusted EBITDA margin, adjusted EBIT, adjusted EBIT margin, adjusted net profit/loss, 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 relevant to alternative performance measures, please refer to the section "Management of the Group" in this 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 (printed, 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 19, 2020	March 26, 2020	May 14, 2020
Press conference on the 2019 financial statements and publication of the 2019 Annual Report	2020 shareholders' meeting	Publication of the Interim Group Report as of March 31, 2020
August 6, 2020	**November 5, 2020**	**February 18, 2021**
Publication of the Interim Group Report as of June 30, 2020	Publication of the Interim Group Report as of September 30, 2020	Press conference on the 2020 financial statements and publication of the 2020 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.

CONTACTS

Deutsche Telekom AG
Friedrich-Ebert-Allee 140
53113 Bonn, Germany
www.telekom.com

Media inquiries:
Corporate Communications
Phone: +49 (0) 228 181 49494
Email: media@telekom.de

Inquiries relating to the T-Share:
Investor Relations
Phone: +49 (0) 228 181 88880
Email: investor.relations@telekom.de

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