

COMBINED MANAGEMENT REPORT

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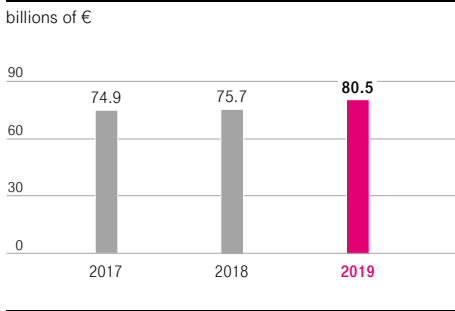
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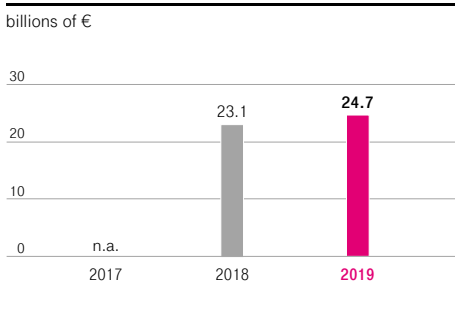
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DEUTSCHE TELEKOM AT A GLANCE

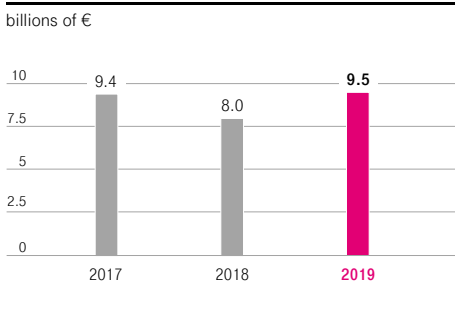
Net revenue



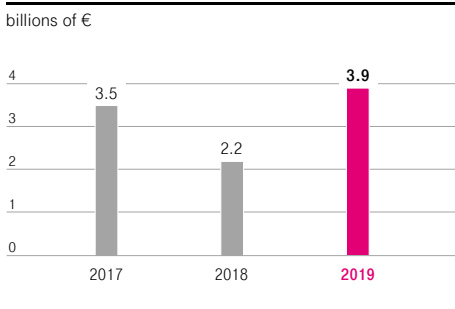
Adjusted EBITDA AL^a



EBIT



Net profit



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.

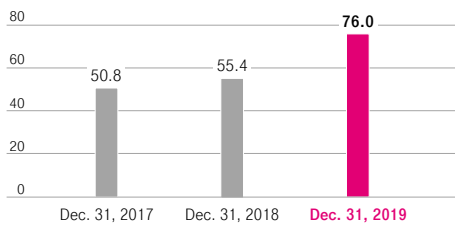
NET PROFIT

- 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.

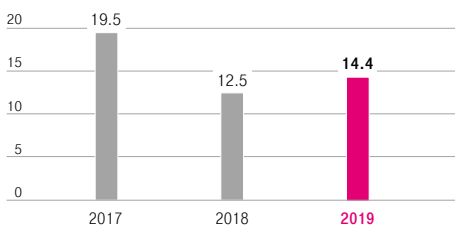
Net debt

billions of €



Cash capex

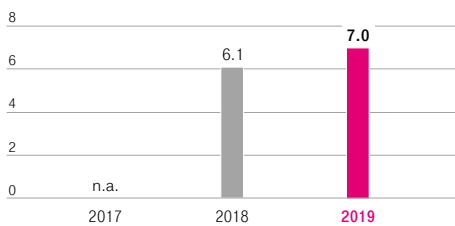
billions of €



Free cash flow AL^a

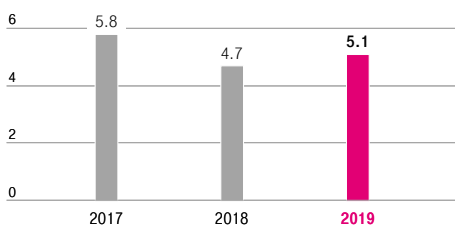
(before dividend payments and spectrum investment)

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

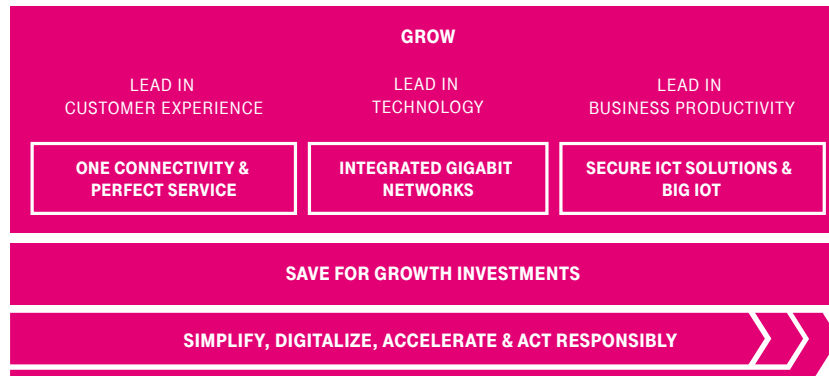
Since 2014, we have been aligning all of our corporate activities with our Leading European Telco strategy – with the aim of becoming Europe's leading telecommunications provider.

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](#)

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 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](#)

8 DECENT WORK AND ECONOMIC GROWTH



90% EMPLOYEES

13 CLIMATE ACTION



ENVIRONMENT

16 PEACE, JUSTICE AND STRONG INSTITUTIONS



RELATIONSHIPS

8 DECENT WORK AND ECONOMIC GROWTH



RELATIONSHIPS

MANAGEMENT OF THE GROUP

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

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

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.

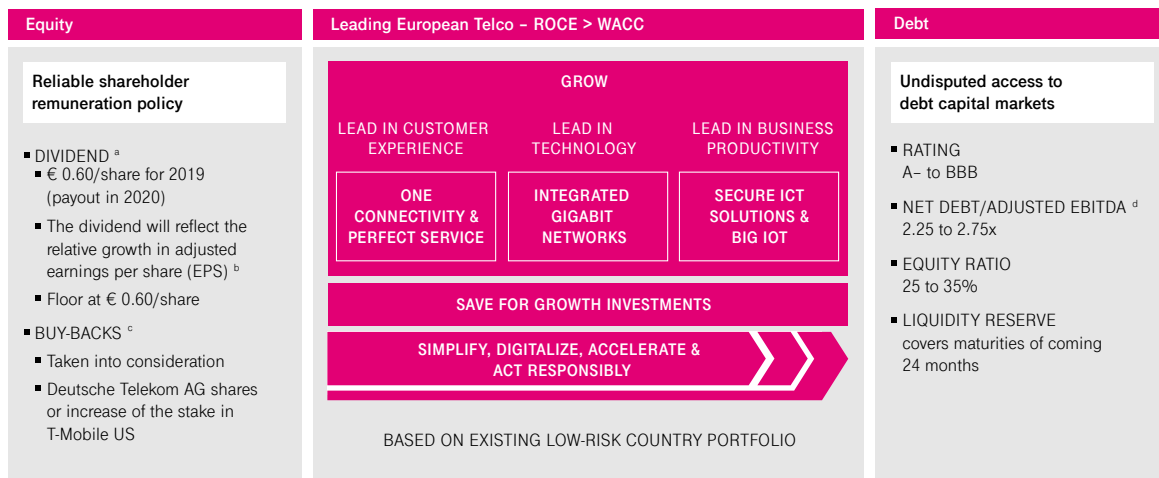
There is a sustainable dividend policy for shareholders, which is subject to approval by the relevant bodies and the fulfillment of other legal requirements. For the 2019 financial year, in keeping with our dividend policy as updated in November 2019, we plan to propose a dividend of EUR 0.60 per dividend-bearing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

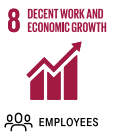
^b Excluding wholesale.

^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](#)."

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.

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.



STRUCTURE

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 O2 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).



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.

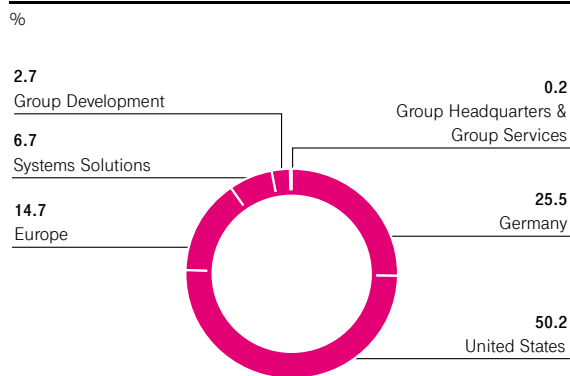
For further information on revenue development in the operating segments, please refer to the section "[Development of business in the operating segments](#)."

Contribution of the segments to net revenue

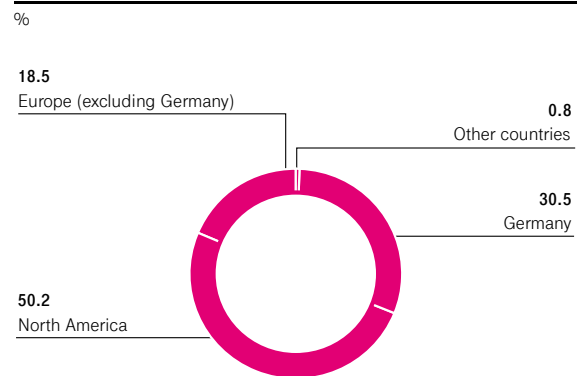
millions of €					
	2019	2018	Change	Change %	2017
NET REVENUE	80,531	75,656	4,875	6.4	74,947
Germany ^a	21,886	21,700	186	0.9	21,931
United States	40,420	36,522	3,898	10.7	35,736
Europe	12,168	11,885	283	2.4	11,589
Systems Solutions	6,805	6,936	(131)	(1.9)	6,918
Group Development	2,797	2,185	612	28.0	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



Breakdown of revenue by region



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

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

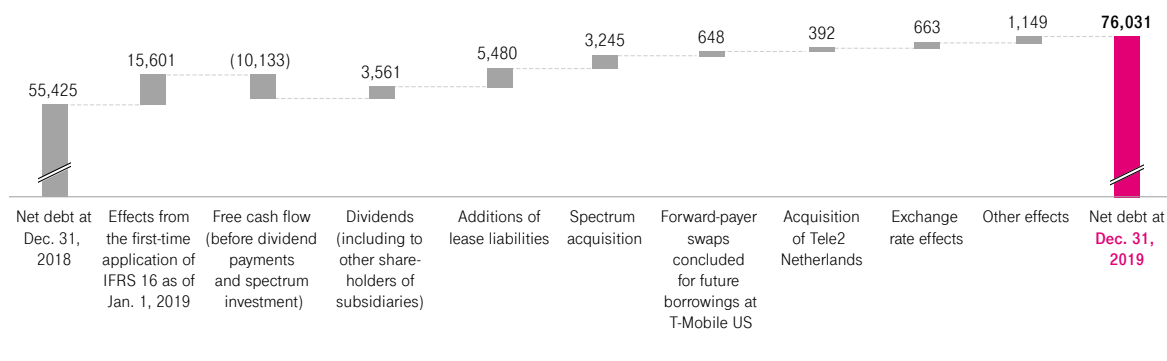
millions of €

	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					
Net debt					
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 (Aktengesetz – 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](#)



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.

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

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 CO₂ 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 CO₂ 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 CO₂ emissions (Scope 1 and 2) by 90 percent (compared to 2017).
3. 80 percent of our CO₂ 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).



In September 2019, we joined an international industry initiative launched by GSMA. Under this initiative we undertake to reduce our CO₂ 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 CO₂ 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](#)

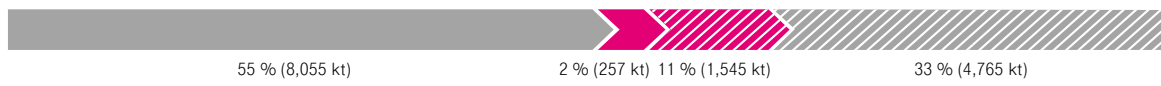


Our climate goal, adopted in 2013, to reduce the Group's CO₂ emissions by 20 percent (compared to 2008, excluding T-Mobile US) by 2020 is still in place. In all, 40 business units in 29 countries have undertaken to work toward this climate goal. They are helping us achieve this goal in different ways 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 CO₂ emissions across the Group in line with the market-based method of the Greenhouse Gas (GHG) protocol. The standard distinguishes between three CO₂ 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 CO₂-equivalent emissions (CO₂e emissions).

CO₂e emissions (Scope 1-3)

Deutsche Telekom Group in 2019 in % and kilotons (kt) of CO₂e



- **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.

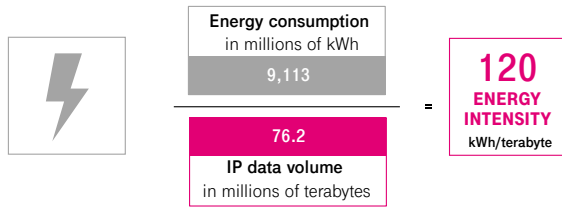
The PUE metric serves as one indicator for enhancing the energy efficiency in our data centers. This Green Grid Association method takes the total energy consumed by data centers into account, not only that used to operate the servers. In 2019, the global PUE metric for our T-Systems data centers was 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 CO₂ 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 CO₂ 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.”

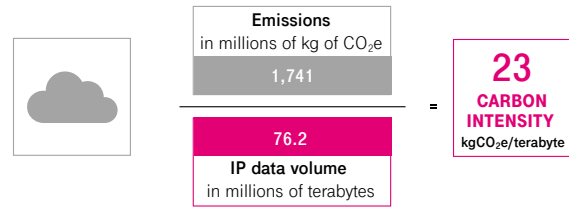
Energy Intensity ESG KPI

Deutsche Telekom Group in 2019



Carbon Intensity ESG KPI

Deutsche Telekom Group in 2019



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 CO₂ (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

17 PARTNERSHIPS FOR THE GOALS



ENVIRONMENT

15 LIFE ON LAND



ENVIRONMENT

8 DECENT WORK AND ECONOMIC GROWTH



ENVIRONMENT

17 PARTNERSHIPS FOR THE GOALS



ENVIRONMENT

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

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.



EMPLOYEES

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 CO₂ 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.

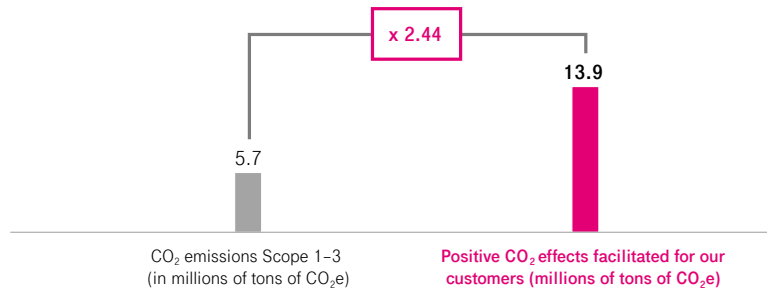
[SDG 7](#)



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 CO₂ effects facilitated for our customers through using selected products. We combine this figure with our own CO₂ 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 CO₂ effects facilitated for our customers in Germany were 144 percent higher in 2019 than our own CO₂ emissions (enablement factor of 2.44 to 1).

Enablement Factor ESG KPI

Deutsche Telekom Group in Germany in 2019



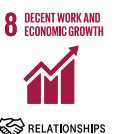
Sustainable products are another key competition factor at our Company. In order to highlight these sustainability benefits to our customers, we have suitable products certified by recognized environmental labels such as the Blue Angel. The majority of Telekom Deutschland’s fixed-network devices and 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](#)

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](#)



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](#)



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 "electromagnetic 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

9 INDUSTRY INNOVATION AND INFRASTRUCTURE



STRUCTURE

3 GOOD HEALTH AND WELL-BEING



ENVIRONMENT

8 DECENT WORK AND ECONOMIC GROWTH



RELATIONSHIPS

10 REDUCED INEQUALITIES



RELATIONSHIPS

4 QUALITY EDUCATION



RELATIONSHIPS

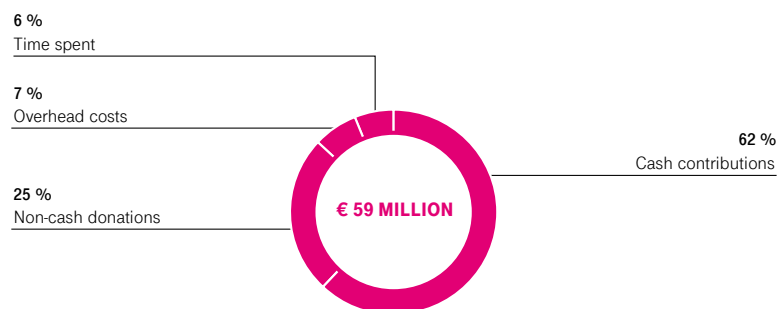
2019 was “digital democracy”: What benefits does the digital world offer for political participation and opinion forming? Where is democracy threatened by what happens on the internet – for instance through open or veiled populism, hate speech, fake news, and the manipulation of public opinion? Our “Media 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.

3 GOOD HEALTH AND WELL-BEING



RELATIONSHIPS

17 PARTNERSHIPS FOR THE GOALS



RELATIONSHIPS

10 REDUCED INEQUALITIES



EMPLOYEES

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](#)



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](#)



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 CO₂ emissions caused by logistics and a 14 percent saving of CO₂ emissions per product unit. [SDG 17](#)

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](#)

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.

17 PARTNERSHIPS FOR THE GOALS



ENVIRONMENT

16 PEACE, JUSTICE AND STRONG INSTITUTIONS



EMPLOYEES

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](#)



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](#)

- **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](#)

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.

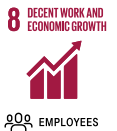
EXPENDITURE AND INVESTMENT IN RESEARCH AND DEVELOPMENT

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.

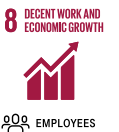


Practicing diversity. For over a decade, we have sustainably and comprehensively practiced and promoted diversity throughout the Group. In 2015, we launched a campaign on unconscious bias, which is now running internationally across all levels of the hierarchy. The goal is to raise employee awareness 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](#)

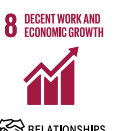


For further information on the subject of occupational health and safety, please refer to the section ["Corporate responsibility and non-financial statement."](#)

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

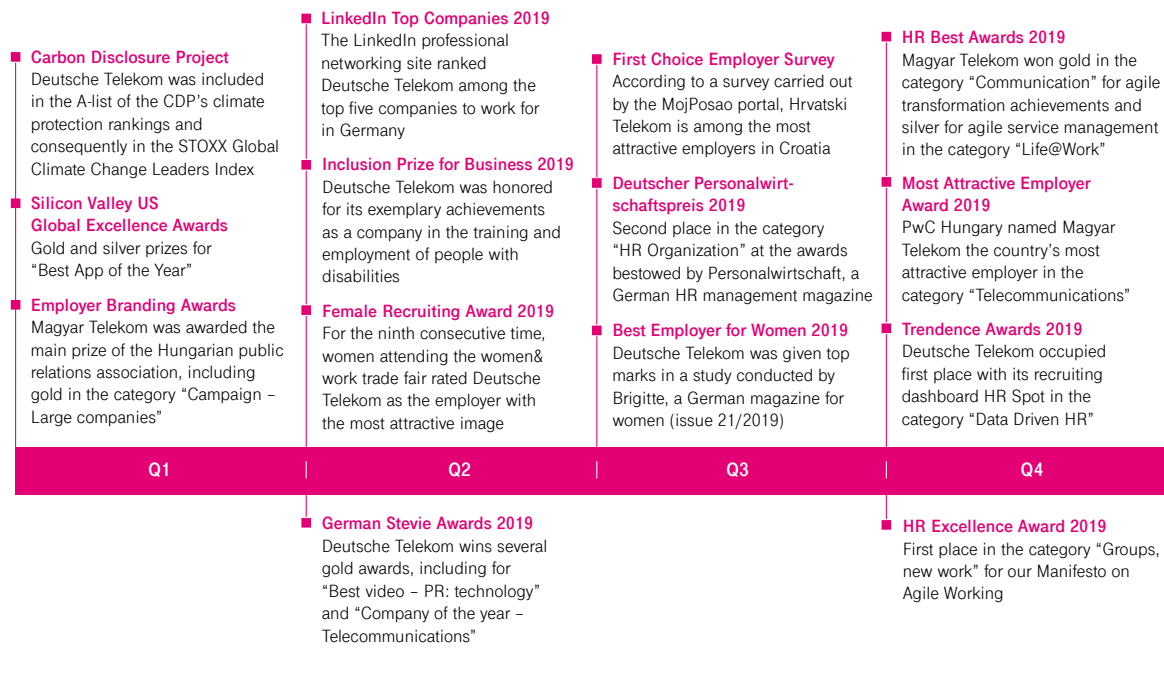
We want to be able to offer our customers value-added products, outstanding performance, and excellent service. Customer-oriented and agile working methods can contribute to achieving this goal and also enable us to respond quickly to change. That is why our HR work focuses on creating the framework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



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
Of which: Germany	%	2.3	1.9	21.1	1.7	1.4
Of which: international	%	9.5	9.8	(3.1)	9.2	8.1
PRODUCTIVITY TREND^a						
Net revenue per employee	thousands of €	378	350	8.2	346	331

^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
PERSONNEL COSTS AT DEUTSCHE TELEKOM AG UNDER GERMAN GAAP		2.3	2.5	(8.3)	2.7	3.5

^a Expenses for staff-related measures.

FORECAST ¹

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

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 AL²** 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 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

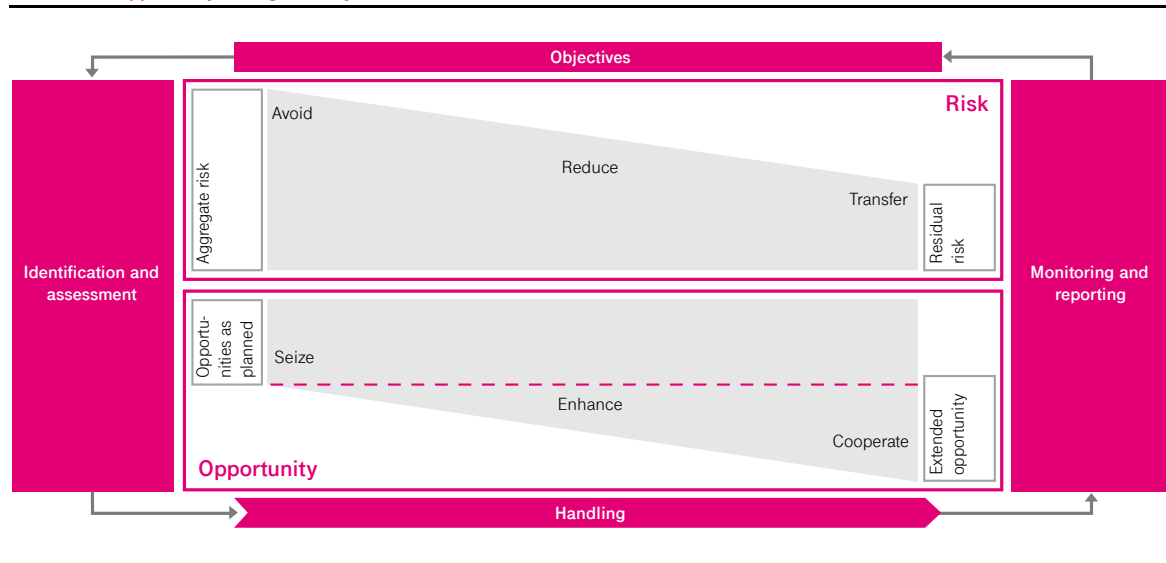
As one of the world’s leading providers in the telecommunications and information technology industry, we are subject to all kinds of uncertainties and change. In order to operate successfully in this ongoing volatile environment, we need to anticipate any developments at an early stage and systematically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

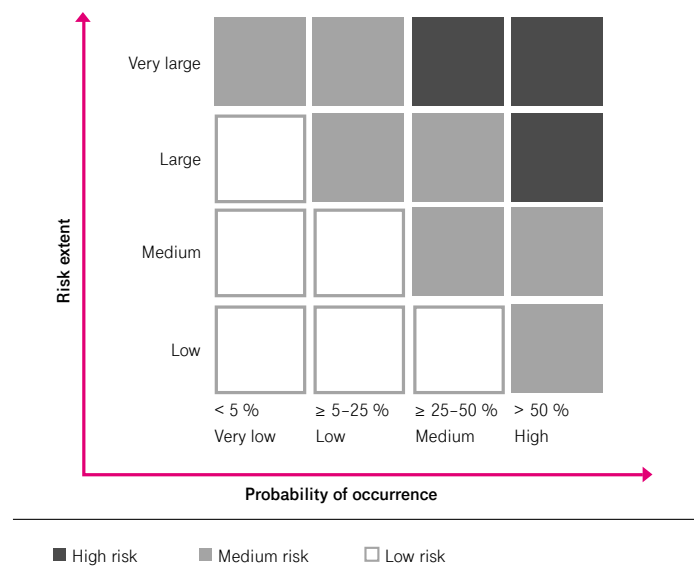
Probability of occurrence	Description
< 5 %	Very low
≥ 5 to 25 %	Low
> 25 to 50 %	Medium
> 50 %	High

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.



FINANCE



STRUCTURE

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



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 of 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



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](#)

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](#)

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 CO₂ 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 CO₂ 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 CO₂ effects facilitated for our customers in Germany were 144 percent higher in 2019 than our own CO₂ 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 CO₂ 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 CO₂ 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](#)

■ **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](#)



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

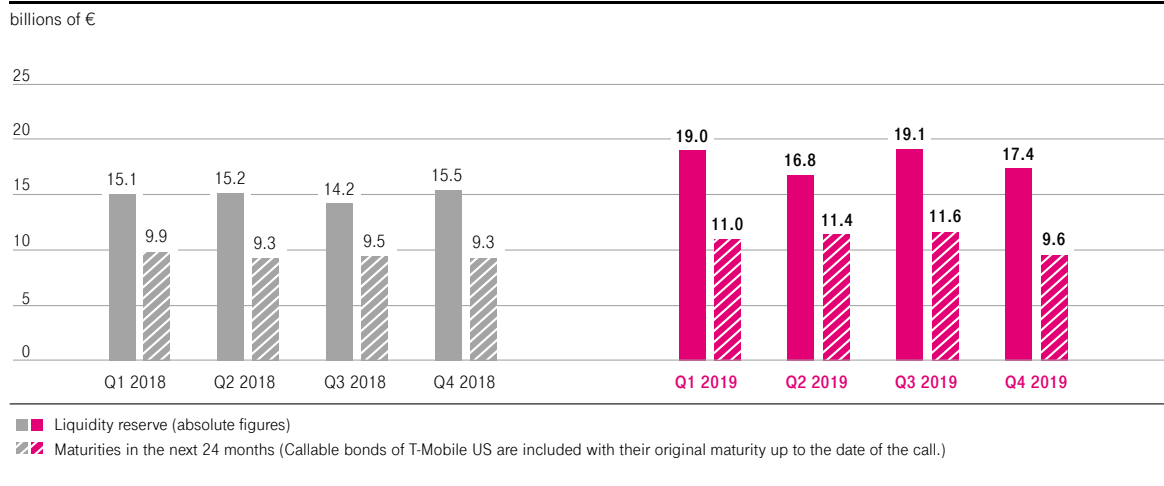
With regard to its assets, liabilities, and planned transactions, our Group is particularly exposed to liquidity risks, credit risks, and the risk of changes in exchange rates and interest rates. We want to contain these risks. Risks with an impact on cash flows are monitored in a standard process and 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



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](#)

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 disappplied 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

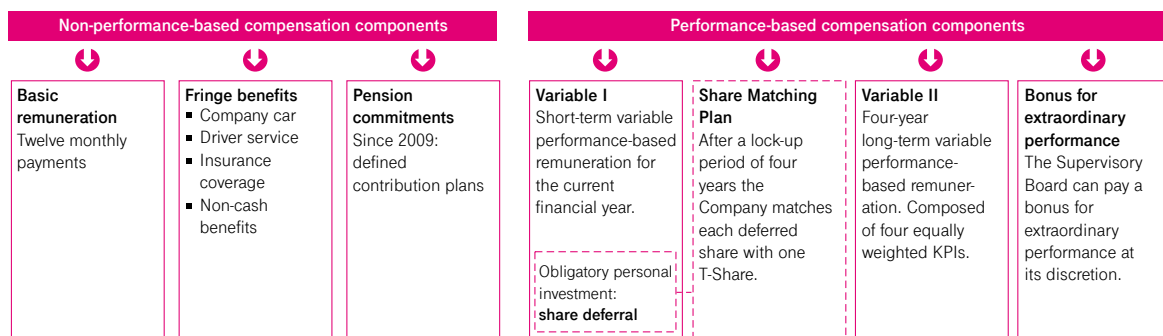
The “Compensation report” details the compensation system underlying Board of Management compensation as well as the specific remuneration received by the individual members of the Board of Management. It takes into consideration the requirements of the German Commercial Code taking account of the provisions 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:

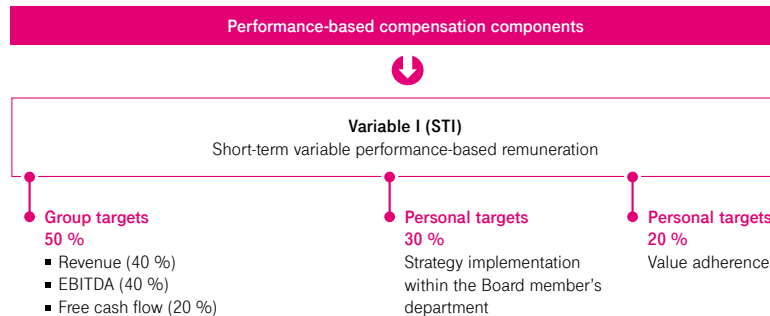
€	Service cost 2019	Defined benefit obligation (DBO) Dec. 31, 2019	Service cost 2018	Defined benefit obligation (DBO) Dec. 31, 2018
Birgit Bohle (since January 1, 2019)	307,304	329,515	0	0
Srini Gopalan	295,590	964,557	300,362	610,829
Timotheus Höttges	417,067	18,595,908	1,117,049	16,269,567
Dr. Christian 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.

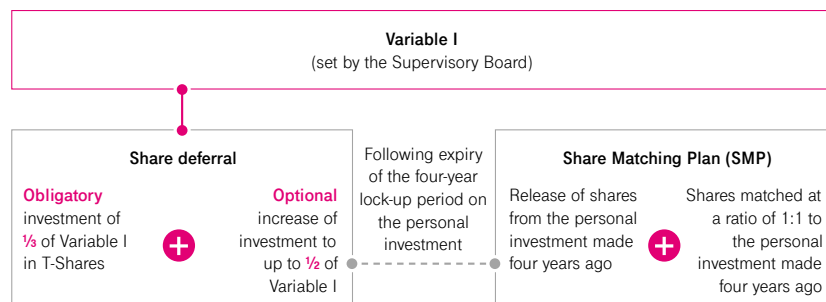
Variable I



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.

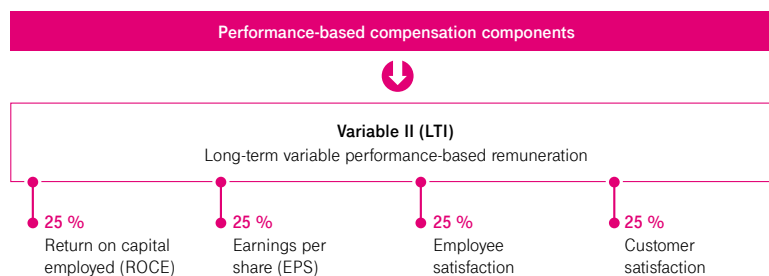
The fair value of the matching shares at grant date shown in the following table does not represent a component of remuneration for the Board of Management members in 2019. It is an imputed value of the entitlements to matching shares determined on the basis of relevant accounting policies. Here, the 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				Srinu 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
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:

- The Chairperson of the Audit Committee receives EUR 80,000.00, ordinary members of the Audit Committee EUR 40,000.00.
- The Chairperson of the General Committee receives EUR 70,000.00, ordinary members of the General Committee EUR 30,000.00.
- The Chairperson of the Nomination Committee receives EUR 25,000.00, ordinary members of the Nomination Committee EUR 12,500.00.
- 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. Bössinger, 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.