

SUSTAINABLE DEVELOPMENT GOALS

In order to successfully tackle global challenges, the member states of the United Nations (UN) adopted the 2030 Agenda for Sustainable Development at their General Assembly in September 2015. The aim is to enable economic development and prosperity – in line with social justice and taking account of the ecological limits of global growth. The Agenda applies equally to all nations of the world: All emerging and developing economies as well as industrial nations must play their part.

The core of the 2030 Agenda comprises 17 sustainable development goals (SDGs), which officially came into force in January 2016. They cover all three dimensions of sustainable development: the social, environmental and economic. In particular, it seeks to reduce poverty and hunger, promote healthcare and education, enable equality, protect the environment and climate, and make consumption increasingly sustainable. Implementing the ambitious SDGs will require everyone to work together: policy makers, civil society, and business. As such, companies are also called upon to make concrete contributions with respect to their business activities.

We are answering this call. Many of our products, services, and activities already allow us to make such a contribution. With our smart home solutions, for example, our customers can better monitor, manage, and reduce their energy consumption (SDG 13); our broadband roll-out enables many people to get access to digital education media (SDG 4), our services in the area of e-health improve medical care (SDG 3), and our cloud solutions can help to save energy and other resources in many sectors (SDG 13). In this Annual Report, we meet our responsibility to transparently communicate our contributions to the SDGs.

To clearly highlight the contribution our products, services and activities make towards the individual Sustainability Development Goals, we have marked the relevant passages of the following pages with the respective SDG symbol.

1 NO POVERTY



2 ZERO HUNGER



3 GOOD HEALTH AND WELL-BEING



4 QUALITY EDUCATION



5 GENDER EQUALITY



6 CLEAN WATER AND SANITATION



7 AFFORDABLE AND CLEAN ENERGY



8 DECENT WORK AND ECONOMIC GROWTH



9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



10 REDUCED INEQUALITIES



11 SUSTAINABLE CITIES AND COMMUNITIES



12 RESPONSIBLE CONSUMPTION AND PRODUCTION



13 CLIMATE ACTION



14 LIFE BELOW WATER



15 LIFE ON LAND



16 PEACE, JUSTICE AND STRONG INSTITUTIONS



17 PARTNERSHIPS FOR THE GOALS



SUSTAINABLE DEVELOPMENT GOALS

COMBINED MANAGEMENT REPORT

20 DEUTSCHE TELEKOM AT A GLANCE

22 Highlights in the 2016 financial year

26 GROUP ORGANIZATION

26 Business activities and organization

28 Management and supervision

28 GROUP STRATEGY

31 MANAGEMENT OF THE GROUP

31 Finance strategy

32 Value management and performance management system

35 THE ECONOMIC ENVIRONMENT

35 Macroeconomic development

36 Telecommunications market

39 Major regulatory decisions

40 DEVELOPMENT OF BUSINESS IN THE GROUP

40 Statement of the Board of Management on business development in 2016

41 Comparison of the Group's expectations with actual figures

42 Results of operations of the Group

46 Financial position of the Group

52 DEVELOPMENT OF BUSINESS IN THE OPERATING SEGMENTS

52 Germany

55 United States

57 Europe

63 Systems Solutions

65 Group Headquarters & Group Services

66 DEVELOPMENT OF BUSINESS AT DEUTSCHE TELEKOM AG

66 Results of operations of Deutsche Telekom AG

67 Financial position of Deutsche Telekom AG

69 Risk management in hedge accounting

70 CORPORATE RESPONSIBILITY

70 Sustainability performance: progress and forecast

74 Climate strategy: Cut CO₂ emissions and improve efficiency

75 Commendation for commitment to a sustainable supply chain

75 Focus on data protection and digital security

76 Assuming social responsibility

77 INNOVATION AND PRODUCT DEVELOPMENT

77 Innovation provides answers for the digital future

77 Group Innovation⁺

79 Three-pronged innovation strategy

82 Expenditure and investment in research and development

82 EMPLOYEES

82 Reorganization of work in the digitized ecosystem

82 HR priorities

83 Our HR work based on the HR priorities

86 Headcount development

86 Workforce statistics

87 SIGNIFICANT EVENTS AFTER THE REPORTING PERIOD

87 FORECAST

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

88 Economic outlook

88 Market expectations

90 Expectations for the Group

93 Expectations for the operating segments

97 RISK AND OPPORTUNITY MANAGEMENT

97 Board of Management's assessment of the aggregate risk and opportunity position

97 Risk and opportunity management system

99 Risk assessment and risk containment

100 Risks and opportunities

112 ACCOUNTING-RELATED INTERNAL CONTROL SYSTEM

113 OTHER DISCLOSURES

113 Corporate Governance Statement in accordance with § 289a and § 315 (5) HGB

113 Closing statement by the Board of Management on the dependent company report

113 Legal structure of the Deutsche Telekom Group

115 Compensation report

DEUTSCHE TELEKOM AT A GLANCE

We keep our promises: In 2016, we once again met our annual forecast. Net revenue increased substantially as planned. And with adjusted EBITDA of EUR 21.4 billion, we exceeded our target of around EUR 21.2 billion. Free cash flow was exactly on target despite a consistently high level of capital expenditure. Our shareholders also benefited from the positive development of business in the form of a dividend payment of EUR 0.55 per share for the 2015 financial year, which meant they were able to participate in the growth of free cash flow of around 9 percent.

Net revenue increased again year-on-year from EUR 69.2 billion to EUR 73.1 billion – an increase of 5.6 percent – driven once again by the strong U.S. business, where revenue was up 16.6 percent. In our home market of Germany, revenue decreased by 1.7 percent, primarily due to lower revenue from non-contract mobile devices. Business in our Europe operating segment remained under regulatory and competitive pressure. The 2.1 percent decline was mainly a result of the spin-off of the energy resale business in Hungary as of January 1, 2016. Despite the completion of the set-up phase of the toll collection system in Belgium in early 2016, revenue in our Systems Solutions operating segment decreased 3.5 percent year-on-year. In general, the downward price trend in ICT business had a negative effect on net revenue.

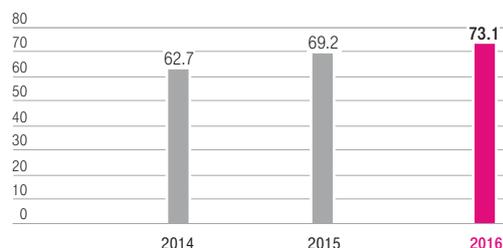
Adjusted EBITDA increased substantially by 7.6 percent compared with 2015. As with revenue, the growth driver was our U.S. business, which recorded an increase of 28.7 percent. In our Germany operating segment, adjusted EBITDA remained stable against the prior year, while in our Europe operating segment it decreased in particular due to competitive and regulatory pressure. Adjusted EBITDA also declined in our Systems Solutions operating segment as a result of the accounting treatment of risks from individual corporate customer contracts.

The adjusted EBITDA margin of 29.3 percent was up on the prior-year level. The operating segments with the strongest margins are still Germany with 39.9 percent and Europe with 32.1 percent.

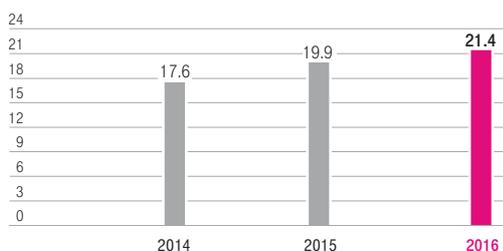
Our **EBIT** increased substantially by EUR 2.1 billion compared with the prior year to EUR 9.2 billion, mainly as a result of income of around EUR 2.5 billion from the sale of our stake in the EE *joint venture*. The transactions for the exchange of spectrum licenses made in the United States during the year and the sale of further parts of our share package in Scout24 AG also made a positive contribution to the development of EBIT. Higher amortization of intangible assets (including goodwill) and higher depreciation of property, plant and equipment reduced EBIT.

Despite strong EBIT growth, **net profit** declined by EUR 0.6 billion or 17.8 percent. This is due in part to the increase in losses from financial activities. The EUR 2.2 billion impairment of our financial stake in BT, which was recognized in profit and loss, was one of the main factors for this decrease. The tax expense in 2016 amounted to EUR 1.4 billion, up EUR 0.2 billion year-on-year. Profit attributable to non-controlling interests increased compared with 2015 by EUR 0.2 billion.

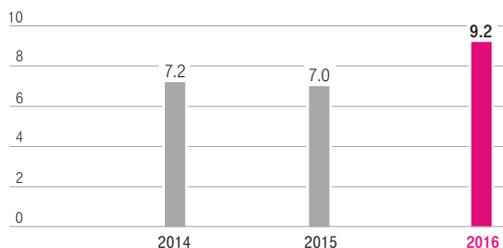
Net revenue
billions of €



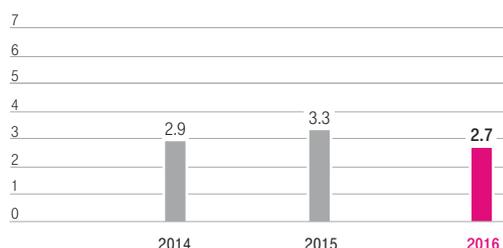
Adjusted EBITDA
billions of €



EBIT
billions of €

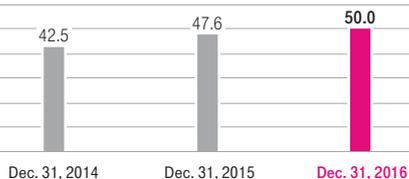


Net profit/loss
billions of €

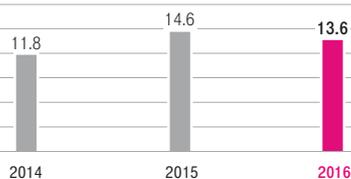


20	Deutsche Telekom at a glance	70	Corporate responsibility
26	Group organization	77	Innovation and product development
28	Group strategy	82	Employees
31	Management of the Group	87	Significant events after the reporting period
35	The economic environment	87	Forecast
40	Development of business in the Group	97	Risk and opportunity management
52	Development of business in the operating segments	112	Accounting-related internal control system
66	Development of business at Deutsche Telekom AG	113	Other disclosures

Net debt
billions of €



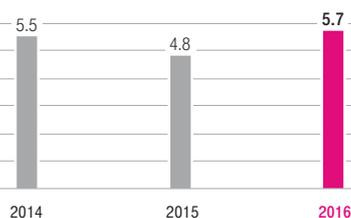
Cash capex
billions of €



Free cash flow (before dividend payments and spectrum investment)
billions of €



ROCE
%



Net debt increased in the reporting year by EUR 2.4 billion to EUR 50.0 billion. This was attributable to the acquisition of mobile spectrum for EUR 2.7 billion, dividend payments – including to non-controlling interests – of EUR 1.6 billion, exchange rate effects of EUR 0.8 billion, and payments to external pension funds (allocation under contractual trust agreement: EUR 0.3 billion). Free cash flow (EUR 4.9 billion) as well as the sale of parts of our share package in the Scout24 group (EUR 0.1 billion) reduced net debt.

Cash capex (including spectrum investment) decreased by EUR 1.0 billion to EUR 13.6 billion. This was mainly due to spectrum acquired for EUR 2.7 billion, primarily in the United States and in Europe, down from EUR 3.8 billion in total in the prior year. Cash capex (before spectrum investment) increased slightly year-on-year to EUR 11.0 billion in the reporting year. The focus was principally on our Germany, Europe, and United States operating segments, where cash capex increased in connection with investments made in building out and modernizing our networks.

Despite continuing to invest heavily in building out our network, free cash flow increased to EUR 4.9 billion. The overall positive development of business was reflected in improved net cash from operating activities, which more than compensated for the higher level of investment.

Our key performance indicator ROCE (return on capital employed) improved by 0.9 percentage points in the reporting period to reach 5.7 percent. This positive trend was due to a substantial increase in net operating profit after taxes (NOPAT), which more than offset the rise in the average amount of net operating assets (NOA) over the year. The main positive factors influencing NOPAT in 2016 were income from the sale of our stake in the EE joint venture and income from transactions for the exchange of spectrum licenses at T-Mobile US. These positive factors were partially offset by the impairments of goodwill and property, plant and equipment recognized in the financial year. The increase in average NOA is largely related to the build-up of assets in our United States and Germany operating segments. In Germany, this development was largely due to the investments made as part of our integrated network strategy. In the United States, the increase in NOA was not only down to ongoing network build-out, but also to the acquisition of spectrum and spectrum exchange transactions.

For a more detailed explanation, please refer to the section "Development of business in the Group," page 40 et seq.

HIGHLIGHTS IN THE 2016 FINANCIAL YEAR

BOARD OF MANAGEMENT

As of January 1, 2017, the Deutsche Telekom AG Group Board of Management was extended to include the additional Board department Technology and Innovation, headed by Claudia Nemat. Srinivasan (Sri) Gopalan joined the Board of Management as of January 1, 2017 as the member responsible for Europe. The Supervisory Board of Deutsche Telekom AG approved this decision in its meeting on June 30, 2016. The number of Board of Management members has thus been increased from seven to eight.

EMPLOYEES

On April 13, 2016, we and the ver.di union agreed the terms for a collective agreement for the following companies: Deutsche Telekom AG, Telekom Deutschland GmbH, Deutsche Telekom Kundenservice GmbH, Deutsche Telekom Technischer Service GmbH, Deutsche Telekom Technik GmbH, and Deutsche Telekom Regional Services and Solutions GmbH. The new collective agreement provides for salaries to increase with retrospective effect by 2.2 percent as of April 1, 2016 and by a further 2.1 percent as of April 1, 2017. Lower salary bands increased at the higher rate of 2.6 percent as of April 1, 2016. The agreement took effect on February 1, 2016 and runs for two years.

In the collective negotiations for T-Systems in Germany, we reached an agreement with ver.di on June 15, 2016. One of the points agreed was to increase salaries under the collective agreement by 1.0 percent, and in the lower salary bands by 1.5 percent, as of July 1, 2016, and by a further 1.5 percent as of April 1, 2017. The agreement took effect retrospectively on April 1, 2016 and runs for two years.

Both collective agreements exclude compulsory redundancies until December 31, 2018.

DIVIDEND

In 2016, we once again offered our shareholders the option of converting the dividend for the 2015 financial year into shares instead of receiving it as a cash payment. The acceptance rate stood at almost 41 percent of dividend-bearing shares, which means this option was taken up for some 1.9 billion shares. With a subscription ratio of 26.7: 1, this resulted in the issue of around 70 million new shares. Shareholders who did not choose this option received a cash dividend, which amounted to around EUR 1.5 billion in total. We are considering offering our shareholders this choice again for the 2016 financial year.

CORPORATE TRANSACTIONS

After the British Competition and Markets Authority (CMA) had approved the sale of the **EE joint venture** to the UK company BT unconditionally and without remedies in January 2016, we and the French telecommunications provider Orange consummated the transaction on January 29, 2016 at a purchase price of GBP 13.2 billion. In return for our stake in the EE joint venture, we received a financial stake of 12.0 percent in BT and a cash payment of GBP 15.7 million.

In December 2016, we agreed to sell our hosting service provider **Strato** to United Internet AG for a purchase price of around EUR 0.6 billion. We expect the transaction to close in the first half of 2017. Payment of most of the purchase price is to be made immediately after closing. Until this

date, our stake in Strato will be reported in the consolidated financial statements under non-current assets and liabilities held for sale. The sale of Strato is in line with our strategy of developing other options for increasing the value of business areas that can no longer be adequately developed within the Group, through partnerships or disposals.

In April 2016, we placed approximately 2.6 million shares in **Scout24 AG** at a price of EUR 30.00 per share. In another book-building process in December 2016, we brought 1.8 million shares to market at a price of EUR 32.00 per share, with gross proceeds of EUR 0.1 billion in total. Following the transactions, we continue to hold directly and indirectly approximately 10.2 percent of the total number of shares of Scout24 AG. Due to the continued significant influence on Scout24 AG's finance and operations, we continue to include the remaining stake in this company in the consolidated financial statements using the equity method, reporting it under the Group Headquarters & Group Services segment in the reporting year.

BOND ISSUANCES

Under our debt issuance program, we placed **euro bonds** totaling EUR 4.5 billion in March 2016, followed in April 2016 by a fixed-interest euro bond with a volume EUR 0.5 billion, and in October 2016 by a fixed-interest **GBP bond** of GBP 300 million. In September 2016, we also placed separate **U. S. dollar bonds** with a total volume of USD 2.75 billion. All bonds were issued by Deutsche Telekom International Finance B.V. with the guarantee of Deutsche Telekom AG. The issuances form part of our general corporate financing and did not increase the level of our net debt. 

FINANCING RELATIONSHIPS

In order to optimize the financing terms and conditions for our subsidiary **T-Mobile US** and thus also those for the Group, we provided T-Mobile US with a 3-year partially secured credit line of USD 2.5 billion and a secured loan of USD 660 million in December 2016. Together with the temporary loan commitments for up to USD 4.0 billion, which were made in March and April 2016 and run until the end of May 2017, Deutsche Telekom AG provided its subsidiary T-Mobile US with a total funding framework of more than USD 7 billion as of the reporting date. This does not increase the Group's net debt. 

INVESTMENTS IN NETWORKS AND NEW SPECTRUM

■ In 2016, **T-Mobile US** acquired spectrum licenses from a number of competitors for a total of around EUR 1.7 billion. Swap arrangements were also consummated with competitors in the reporting year; giving rise to a total non-cash gain of EUR 0.5 billion. In September 2016, T-Mobile US agreed the swap of spectrum licenses with a competitor. The spectrum licenses to be exchanged in the value of EUR 0.1 billion were reclassified to non-current assets and disposal groups held for sale. The transaction is expected to be closed in the first half of 2017.



For further information on the issuances, please refer to the section "Development of business in the Group," page 40 et seq.



For further information on our financing relationship with T-Mobile US, please refer to the section "Significant events after the reporting period," page 87.

20	Deutsche Telekom at a glance	70	Corporate responsibility
26	Group organization	77	Innovation and product development
28	Group strategy	82	Employees
31	Management of the Group	87	Significant events after the reporting period
35	The economic environment	87	Forecast
40	Development of business in the Group	97	Risk and opportunity management
52	Development of business in the operating segments	112	Accounting-related internal control system
66	Development of business at Deutsche Telekom AG	113	Other disclosures

■ At the spectrum auction in Poland which ended in October 2015, T-Mobile Polska was the highest bidder, acquiring spectrum of some EUR 0.5 billion, which was paid at the beginning of February 2016. In June 2016, T-Mobile Polska acquired additional mobile spectrum for around EUR 0.5 billion. This was offered to our subsidiary by the Polish regulatory authority UKE after the highest bidder had declined to accept the spectrum. T-Mobile Polska was offered the spectrum for purchase as the second highest bidder in accordance with the rules of the auction. Payment was made in July 2016.

■ Work to expand Europe's largest data center in Biere near Magdeburg began on schedule in June 2016. It is expected to be put into operation after only two years of construction – in time to serve the increasing demand for secure and reliable cloud services and further cement our market leadership in Europe. We expect the investment for the expansion in Biere to be in the three-digit million range. [SDG](#)

■ For the new age of telecommunications, as part of our "Leading European Telco" Group strategy, we are working towards a pan-European production model with an IP-based infrastructure. We laid the foundation for this in August 2016 with the commissioning of our first production sites in the Hungarian capital of Budapest; two more will be set up in Poland and Greece in 2017. These production sites will provide services like voicemail, text messaging, and e-mail for all our European subsidiaries in the form of product modules. Each subsidiary can assemble these modules tailored to the needs of their respective market. In this way, the set-up of our pan-European network ensures long-term competitiveness on our markets while at the same time creating synergies throughout the Group.

INNOVATION

■ We proved our technology leadership once again in the reporting year. In particular, we reached milestones in the development of the new 5G standard and in narrowband communications. At the Mobile World Congress in Barcelona, for example, we unveiled the world's first end-to-end 5G system: with a latency of less than a millisecond – a technical record and a major step towards achieving genuine real-time applications such as self-driving cars or remote medical surgery.

■ In October 2016, we introduced the world's first end-to-end system for narrowband communications (Narrowband Internet of Things – NB-IoT) in our networks in Germany and the Netherlands. One of the first applications is an innovative parking system we developed together with our partner Huawei. The sensors installed in parking spaces communicate with drivers via an app, directing them to empty spaces. The narrowband technology allows the use of low-energy, cost-efficient sensors and thus is ideal for flexible use in all sectors of the industry and economy. [SDG](#)

PARTNERSHIPS

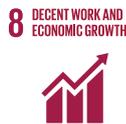
"Win with partners" is one of the four areas of operation in our Group strategy, and it underscores just how important collaboration and partnerships are for the success of our Group. We have successfully partnered with key players for many years, including Apple, Samsung, and Microsoft. We again entered into and expanded a large number of partnerships in the reporting year. We would like to present some of them in detail:

■ At the end of February 2016, we entered into a strategic partnership with South Korea's largest mobile telecommunications services provider, SK Telecom. The shared aim is to further expand our performance potential as industry leaders, so as to create additional customer benefits. Our collaboration covers in particular the areas of media and IoT platforms. The partnership is also driving forward the development of 5G technology. We managed to win SK Telecom as a committed partner for the Next Generation Enterprise Network Alliance (ngena) initiated by us.

■ At the Hannover Messe in June 2016, where we exhibited under the motto "Digitization. Simply. Make it happen.", we expanded our alliance to drive the progress of the industrial Internet. We agreed to collaborate with Huawei to open up the IoT mass market for hardware and sensor technology. We are expanding our longstanding collaboration with the German Research Center for Artificial Intelligence (DFKI) to make it possible to promptly incorporate the latest scientific and research findings into our in-house product development processes. For industrial data analysis, we intend to work with GE Digital, a subsidiary of the U. S. industrial group General Electric (GE), and use their Predix cloud platform. We want to work with GE Digital to drive forward digital innovations in industrial segments like production, transport, energy, or healthcare.

■ Our business customer arm T-Systems and the energy management company Eaton have been pooling their IoT expertise since November 2016. Together we want to offer small and medium-sized mechanical and plant engineering companies secure IoT solutions for networking their systems in the cloud. Eaton provides an automation component that ensures easy connection to our multi-IoT platform. This will enable mechanical engineering companies to monitor and maintain entire facilities directly from the cloud and, thanks to intelligent data analysis, to improve their productivity. [SDG](#)

■ When digitizing critical business processes, sustainable quality is crucial. Our Zero Outage quality program aims for stable ICT operation and the highest possible level of customer satisfaction. We have been further developing this vision since 2016 in our global partner ecosystem together with other big names from the ICT industry and have set up a Zero Outage Industry Standard association: We have defined an industry-wide, cross-company standard for IT quality, which we now plan to establish with all partners.



For further information on our innovations, please refer to the section "Innovation and product development," page 77 et seq.

- T-Systems, Daimler and DKV EURO SERVICE are working to establish a partnership for the development and provision of a **European Electronic Toll System (EETS)** throughout all of Europe. For marketing the EETS services and handling toll collection vis-à-vis end customers, the joint venture parties intend to integrate the services of sales and marketing partners. The intended technical basis for the planned services is an on-board unit that can be used internationally to enable billing of toll charges Europe-wide with a single device.

NEW DEALS WITH CORPORATE CUSTOMERS

We continued our streak of success in cloud services in the reporting year. But we also succeeded in concluding, extending, and expanding various contracts in other areas in Germany and abroad. Examples of new corporate customer contracts:

- At the end of May 2016, T-Systems concluded an agreement with **ITSCare**, the IT service provider for the AOK health insurance fund for Baden-Württemberg, Hesse, and Rhineland-Palatinate/Saarland. This triple-digit-million, multi-year deal covers the centralized operation of the IT infrastructure with data center and network services, as well as decentralized services like service desk and workplace services.
- The Austrian highway operator **ASFINAG** has commissioned T-Systems with the operation of the central toll collection system **GoMaut 2.0** from 2018. This deal, awarded in August 2016 with a term of ten years, involves operating the toll billing IT systems, around 230 points of sale in Austria and abroad, as well as the 48 mobile control units. We will operate the hardware in our own highly secure data center, the T-Center in Vienna, as well as further develop and modernize existing applications. The company will deploy state-of-the-art virtualization and automation technologies, with the aim of increasing security and quality while reducing costs.
- T-Systems once again convinced the automotive group **Daimler** of its IT expertise, concluding an agreement with a three-digit million order volume: It includes the operation and modernization of the mainframe computers as well as key IT applications. Furthermore, we will connect more than two million vehicles around the world via Daimler's connected car platform.
- At the end of November 2016, **Deutsche Bahn** awarded us the contract to deliver tens of thousands of terabytes of data to supply the ICE fleet with fast Internet. This makes us one of the largest suppliers of data volumes for Deutsche Bahn's new, free Wi-Fi service on board its trains. The service requires a fast, resilient network in which we have continuously invested along the ICE routes.

- At the end of December 2016, **Swiss National Railways (SBB)** and T-Systems signed another corporate customer agreement. After T-Systems Switzerland successfully transferred some of SBB's applications to the cloud in the reporting year, the entire SAP infrastructure is now to follow. In the future, we will provide this as Infrastructure-as-a-Service (IaaS). In addition, Platform-as-a-Service (PaaS) services are to be pooled in a cloud-based platform in Switzerland in the future.

- The UK telecommunications company **BT** is expanding its cloud ecosystem with T-Systems. The agreement, signed in December 2016, covers the provision of cloud-based SAP solutions from our data centers. From the first half of 2017, BT's business customers will be able to purchase the new PaaS service "BT Compute for SAP."

NEW PRODUCTS AND RATE PLANS

Of course, we again launched new products, services and rate plans on the market in the reporting year, some of which are presented below: □

- At CeBIT in March 2016, we unveiled another central component of our cloud ecosystem with our **Open Telekom Cloud**. This secure online solution allows business customers to purchase not only tailor-made private cloud solutions, but also infrastructure, software, and applications as needed.
- We have added to our **security solutions** in the MagentaSecurity portfolio. We have pooled all of the Group's security units in our new Telekom Security organization, where we make use of both proprietary innovations and solutions offered in partnership with leading international security specialists.
- **MagentaOne** has been available to consumers in all of our European integrated markets since March 2016. We employ an international marketing concept adapted to the local markets and their requirements to market our convergent product portfolio.
- The **MagentaMobil Happy** rate plans, available since March 2016, provide our MagentaEins customers in Germany with a new top smartphone or tablet at a reduced price every 12 months when extending their contract. Since mid-April 2016, the **MagentaMobil** rate plans include even more features: In addition to larger high-speed data volumes, subscribers can benefit from an integrated HotSpot flat rate and a free EU roaming package for calls, text messages, and mobile data usage. We have redesigned our **MagentaMobil Start** prepaid portfolios: Since October 2016, our customers in Germany have been able to profit from attractive offers, such as 50 percent bigger data volumes compared with the old rate plans and data speeds of up to 300 Mbit/s in the LTE network.



For more information, please go to www.telekom.com/media

20	Deutsche Telekom at a glance	70	Corporate responsibility
26	Group organization	77	Innovation and product development
28	Group strategy	82	Employees
31	Management of the Group	87	Significant events after the reporting period
35	The economic environment	87	Forecast
40	Development of business in the Group	97	Risk and opportunity management
52	Development of business in the operating segments	112	Accounting-related internal control system
66	Development of business at Deutsche Telekom AG	113	Other disclosures

- At the 2016 Hannover Messe, we unveiled our new **Cloud of Things starter kit** that provides companies with a simple entry-level digitization solution. It enables companies of all sizes to connect their machines, equipment, or vehicles and monitor them remotely without any costly installation. Our platform, which we operate in our secure data center in Germany, receives the data and makes them available to customers via an online portal.
- In May 2016, we launched our new service **EntertainTV** – with a new design, new highly user-friendly interface, and new, elegant hardware. Customers can now use unique features: The “restart” option means they never again have to miss the beginning of programs that have already started. The “seven-day replay” function provides even greater freedom, allowing viewers to watch replayable programs for up to a week after their broadcast. EntertainTV combines live television, on-demand content, apps, and media libraries on one platform, and not just on television, but also on tablets and smartphones using the EntertainTV mobil add-on option.
- Since May 2016, fixed-network customers switching to us from another provider have benefited from a **personal switch advisor** – complementing the service for owner builders and the moving home manager as an additional component for enhancing the customer experience and improving customer retention. In addition, since December 2016, we have offered two new services for our **customer hotline**: First, customers have the option of being connected with the same advisor; second, our hotline calls customers back within a previously specified waiting period.
- Since June 2016, our **mobile customers** have been able to make calls on their smartphones via any Wi-Fi (WLAN) network in Germany or abroad with the free add-on **WLAN Call**. All they need is a WLAN Call-enabled smartphone and a mobile contract that includes Voice over LTE. The software needed for this add-on is installed in the smartphone, i. e., no additional app is required. WLAN Call is of particular benefit in places that for construction reasons do not have sufficient mobile reception, but do have Wi-Fi, such as underground garages or basements.
- Together with the Fraunhofer Institute for Secure Information Technology (SIT), we launched **Volkverschlüsselung – secure e-mail for everyone** – at the end of June 2016. The Fraunhofer SIT is developing this user-friendly software, which generates a cryptographic key and configures the users’ e-mail programs. Volkverschlüsselung, which is free of charge, is part of an initiative we have launched together with Fraunhofer SIT to promote the widespread usage of end-to-end encryption among the general public and thus bolster the protection of electronic communications of consumers and businesses. SDG

- The **PaketButler**, our connected solution to make it easier to receive parcels and send back returns, has been in use across Germany since November 2016. We developed the PaketButler together with our partner feldsechs from Hamburg and launched it on the market in close partnership with DHL. But in principle all delivery companies can use it. The connected parcel box makes it secure, simple and convenient to receive and return parcels, even when no one is home. The customer simply places the box, with its integrated **SIM card**, outside their door and then secures it by placing the tear-resistant belt between door and frame. The delivery company places the parcel inside the theft-proof box, and the PaketButler then sends a push message to the recipient’s smartphone, informing them that their goods have arrived.
- In September 2016, T-Mobile US launched the latest Un-carrier initiative: With the **T-Mobile ONE** and **T-Mobile ONE Plus** rate plans, customers can make unlimited calls, send unlimited text messages, and enjoy an unlimited high-speed 4G/LTE data volume. On T-Mobile ONE, video typically streams at DVD (480p) quality and tethering is at maximum 3G speeds. Customers on T-Mobile ONE Plus plans also receive unlimited high-speed 4G/LTE mobile HotSpot data volume, unlimited High Definition Day Passes, and up to two times faster speeds when traveling abroad in more than 140 countries and destinations.
- Since October 2016, our new **multi-IoT platform** in the cloud data center in Biere has been bringing together the IoT platforms of various well-known companies, such as Microsoft, Cisco and Huawei. IoT solutions can thus be used across platforms and on any terminal equipment. Differing platforms and standards inhibit the market development of the Internet of Things. With our multi-IoT platform, we offer a cross-industry, scalable platform as well as the right complete IoT packages for fast entry to IoT.

AWARDS

We received a large number of awards again in the reporting year – among other things for our outstanding networks, our excellent service, our innovative marketing concepts, and for our extremely valuable Telekom brand. The following graphic summarizes the main awards received in 2016. 

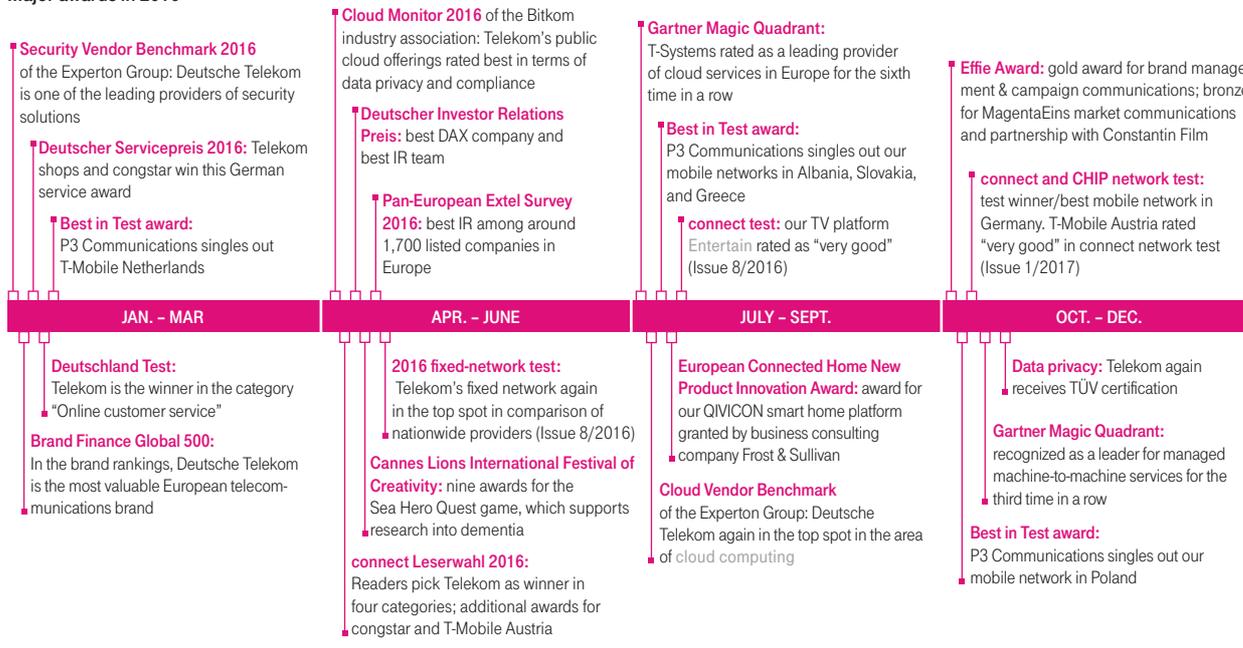


For details on more awards, please go to www.telekom.com/media



For information on awards received for our HR activities, please refer to the section “Employees,” page 82 et seq.

Major awards in 2016



GROUP ORGANIZATION

- Organization and business activities
- Management and supervision

BUSINESS ACTIVITIES AND ORGANIZATION

Business activities. With 165 million mobile customers, around 29 million fixed-network and around 19 million broadband lines, we are one of the leading integrated telecommunications companies worldwide. We offer our customers fixed-network/broadband, mobile communications, Internet, and Internet-based TV products and services for consumers, and ICT solutions for business and corporate customers. We have an international focus and are represented in more than 50 countries. In the 2016 financial year, we generated around 66 percent of net revenue, i. e., EUR 48.4 billion, outside Germany. Overall, we employ some 218,300 people (December 31, 2016).

The fixed-network business encompasses 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. When marketing these services, we also sell mobile handsets and other hardware. In addition, we also sell mobile services to resellers and to companies that buy network services and market them independently to third parties (mobile virtual network operator, 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.

We believe that economic, social, and ecological aspects can be reconciled, and place sustainability at the heart of all we do. A range of sector-specific and general conditions are crucial to the success of business activities. These include qualified staff and excellent working conditions within our own Group but also at our suppliers, as well as first-rate quality at reasonable costs – with regard to data protection and security, customer service, network build-out, and in materials procurement. It is also important to consider the potential consequences of climate change for our business activities: for example, to construct our network infrastructure in such a way that it is protected from severe weather conditions, changes in temperatures, and higher wind speeds. We also help our customers to reduce their carbon footprint with innovative products and services. Furthermore, we are cutting back our own energy consumption. Also beyond our core business, we do everything we can to ensure that our actions are socially acceptable. For us, this means conducting ourselves in a way that is ethical and compliant with the law and informing and involving our stakeholders in a transparent way. [SDG](#)

Our responsible corporate governance and business success are based on our shared corporate values and 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.



For information on our footprint, please visit www.telekom.com/worldwide



20	Deutsche Telekom at a glance	70	Corporate responsibility
26	Group organization	77	Innovation and product development
28	Group strategy	82	Employees
31	Management of the Group	87	Significant events after the reporting period
35	The economic environment	87	Forecast
40	Development of business in the Group	97	Risk and opportunity management
52	Development of business in the operating segments	112	Accounting-related internal control system
66	Development of business at Deutsche Telekom AG	113	Other disclosures

Organization. Our financial reporting conforms with our Group strategy and is based on the following organizational structure. Our Group is broken down into four operating segments whose business activities are assigned in three segments by region and in one segment by customer and product.

The following graphic provides an overview of the organizational structure of our Group, which we will explain in detail.

Organizational structure



Our **Germany** operating segment comprises all fixed-network and mobile activities for consumers and business customers in Germany. In addition, it provides **wholesale** telecommunications services for the Group's other operating segments.

Our **United States** operating segment combines all mobile activities in the U. S. market.

Our **Europe** operating segment comprises all fixed-network and mobile operations of the national companies in Greece, Romania, Hungary, Poland, the Czech Republic, Croatia, the Netherlands, Slovakia, Austria, Albania, the F.Y.R.O. Macedonia, and Montenegro. In addition to consumer business, most of our national companies also offer information and communication technology (ICT) solutions to business customers. On January 1, 2016, we bundled the business customer operations at Magyar Telekom under our Europe operating segment; previously they had been assigned to the Systems Solutions operating segment. The units International Carrier Sales & Solutions (ICSS), Group Technology, and Global Network Factory (GNF) also belong to our Europe operating segment: ICSS primarily provides wholesale telecommunications services for the operating segments in our Group. Group Technology ensures efficient and customized provision of technologies, platforms, and services for mobile and fixed-network communications. GNF designs and operates a global network for providing wholesale customers with voice and data communication. Deutsche Telekom Pan-Net, established in 2015, also belongs to the Europe operating segment. It operates and manages the shared pan-European network and is responsible for developing and providing services for our European national companies.

Drawing on a global infrastructure of data centers and networks, our **Systems Solutions** operating segment operates ICT systems for multinational corporations and public sector institutions. In this way, T-Systems provides customers all over the world with integrated solutions for the digital age. But the operating segment also offers ICT solutions tailored to the needs of small and medium-sized enterprises. The offering primarily includes services from the cloud, M2M, and security solutions, complementary, standardized mobile and fixed-network products, as well as solutions for virtual collaboration and IT platforms. They form

the basis for the digital business models of our corporate customers. The Systems Solutions operating segment comprises two business areas: Market Unit and Telekom IT. Telekom IT focuses on the Group's internal national IT projects. The Market Unit mainly comprises business with external customers and since October 2015 has been divided into three divisions: the IT Division, the TC Division (Telecommunications), and the Digital Division. These roles and responsibilities are more closely aligned to address the needs of our customers and enable us to grow as we improve efficiency and profitability.

Group Headquarters & Group Services comprises all Group units that cannot be allocated directly to one of the operating segments. 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 acts as service provider for the Group; in addition to typical services such as financial accounting, human resources services, and operational procurement, Group Services also includes Vivento, our personnel service provider. On the one hand, it is in charge of securing external employment opportunities for employees and 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 MobilitySolutions, which is a full-service provider for fleet management and mobility services. Our central innovation unit Group Innovation⁺ is working to develop new business areas and products in close dialog with our operating segments. 

Changes in the organizational structure from January 1, 2017. We have created the new Board of Management department **Technology and Innovation**, in which we have pooled our Group's overarching network, innovation, and IT tasks. As a result, organizational changes took effect at the beginning of 2017: We have transferred the Innovations, Telekom IT, and Technology units of our Germany, Europe and Systems Solutions operating segments into a separate Board department. As of January 1, 2017, we will report on the Technology and Innovation Board department under the Group Headquarters & Group Services segment.

In addition, as of January 1, 2017, we will be reporting on the new **Group Development** operating segment. The objective of Group Development is to actively manage and increase the value of selected subsidiaries or equity investments of the Group. For this purpose, the following units and subsidiaries have been assigned to this operating segment: T-Mobile Netherlands from the Europe operating segment, Deutsche Funkturm (DFMG) from the Germany operating segment, and Deutsche Telekom Capital Partners (DTCP), our stakes in BT, Scout24 AG, Ströer SE & Co. KGaA, and the held-for-sale company Strato AG from the Group Headquarters & Group Services segment. The Group functions of Mergers & Acquisitions and Strategic Portfolio Management have also been assigned to Group Development. Our approach of integrated, value-driven management aims to give our subsidiaries and equity investments the level of entrepreneurial freedom they need and thus to promote their strategic further development. The management teams maintain an intensive dialog with the segment management and the relevant supervisory and advisory boards.

Our integrated planning and management process will take account of this new structure from 2017. 



For more information, please refer to Note 31 "Segment reporting" in the notes to the consolidated financial statements, **page 192 et seq.**



For more information, please refer to the section "Forecast," **page 87 et seq.**

8 DECENT WORK AND ECONOMIC GROWTH



For a description of the compensation of the Board of Management and the Supervisory Board, please refer to the section "Other disclosures," page 113 et seq.

MANAGEMENT AND SUPERVISION

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. The recommendations of the German Corporate Governance Code are complied with. [SDG](#)

As of December 31, 2016, Board of Management responsibilities were distributed across seven Board departments. Four of these cover cross-functional management areas:

- Chairman of the Board of Management and the Board departments
- Finance
- Human Resources
- Data Privacy, Legal Affairs and Compliance

In addition, there are three segment-based Board departments:

- Germany
- Europe and Technology
- T-Systems

Changes in the composition of the Board of Management. Claudia Nemat was reappointed as member of the Board of Management responsible for Europe and Technology effective October 1, 2016 as per a resolution of December 16, 2015. Dr. Thomas Kremer was reappointed as member of the Board of Management responsible for Data Privacy, Legal Affairs and Compliance effective June 1, 2017 as per a resolution of August 30, 2016. Reinhard Clemens was reappointed as member of the Board of Management responsible for T-Systems effective December 1, 2017 as per a resolution of December 14, 2016.

Changes in the composition of the Supervisory Board (shareholders' representatives). Dr. Hubertus von Grünberg's term of office on the Supervisory Board expired at the end of the shareholders' meeting on May 25, 2016. At that shareholders' meeting, Dr. Helga Jung was elected to the Supervisory Board.

Changes in the composition of the Supervisory Board (employees' representatives). Waltraud Litzemberger resigned her position on the Supervisory Board effective midnight December 31, 2015. Nicole Koch was court-appointed to the Supervisory Board effective January 1, 2016.

The Supervisory Board of Deutsche Telekom AG advises the Board of Management and oversees its management of business. It is composed of 20 members: Ten represent the shareholders and ten the employees. [SDG](#)

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

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.

Composition of the Board of Management

Members of the Board of Management	Department
Timotheus Höttges	Chairman of the Board of Management (CEO)
Reinhard Clemens	T-Systems
Niek Jan van Damme	Germany
Thomas Dannenfeldt	Finance (CFO)
Dr. Christian P. Illek	Human Resources
Dr. Thomas Kremer	Data Privacy, Legal Affairs and Compliance
Claudia Nemat	Europe and Technology

Changes in the organizational structure from January 1, 2017. At its meeting on June 30, 2016, the Supervisory Board resolved to extend the Group Board of Management to eight Board departments by setting up a new Technology and Innovation Board department effective January 1, 2017; the previous Europe and Technology Board department will continue as a separate Europe Board department. The new Board department will be headed by Claudia Nemat effective January 1, 2017, who was previously responsible for the Europe and Technology department. At the same meeting, our Supervisory Board appointed Srinu Gopalan as the new Board of Management member responsible for the Europe department effective January 1, 2017.

GROUP STRATEGY

- Deutsche Telekom aims to be the leading telecommunications provider in Europe
- Group strategy successfully implemented again in 2016

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. We see ourselves as a driving force for a modern and competitive digital Europe. Our leadership goal covers four dimensions: best network, best service, best products, and preferred provider for business customers. Furthermore, we work towards making the information and knowledge society accessible to all, and endeavor to reconcile economic, ecological, and social aims in the interests of sustainable economic activity. In this way we strive to make a positive contribution to sustainable development at all levels of the value chain. The key action areas for our sustainability management focus on both its importance for our business success and the expectations of our stakeholders. [SDG](#)

As the following graphic shows, our Leading European Telco strategy is based on four areas of operation which are derived from our leadership goal and focus on our customers, as well as on three supporting areas of operation which provide the framework for our internal activities.



For details on the activities of the Supervisory Board in the reporting year, please refer to page 5 et seq.

12 RESPONSIBLE CONSUMPTION AND PRODUCTION



For more information, please refer to the section "Corporate responsibility," page 70 et seq.

20	Deutsche Telekom at a glance	70	Corporate responsibility
26	Group organization	77	Innovation and product development
28	Group strategy	82	Employees
31	Management of the Group	87	Significant events after the reporting period
35	The economic environment	87	Forecast
40	Development of business in the Group	97	Risk and opportunity management
52	Development of business in the operating segments	112	Accounting-related internal control system
66	Development of business at Deutsche Telekom AG	113	Other disclosures

Leading European Telco corporate strategy



STRATEGIC AREAS OF OPERATION

Integrated IP networks

Our core business is setting up, operating, and marketing networks and communication services. We aim to offer our customers the best network and fastest possible connection. Above-average **network quality** is therefore a differentiator for us, with which we can clearly set ourselves apart from the competition. We regularly perform outstandingly in independent network tests: proof that we are systematically upgrading our networks and remain quality leader, despite rising competitive pressure. The built-out of our networks also serves our corporate and social aims: A modern network makes our products and services attractive for a larger number of potential customers and thus increases our revenue potential. Modern networks and systems also improve our energy efficiency. At the same time, we give more people access to modern information and telecommunications services.

Step by step we are migrating our entire fixed network to the **Internet Protocol (IP)** for all customers. In the long term, an **integrated, pan-European IP network** will allow us to meet our customers' wishes quickly, flexibly, and economically. The gradual migration to modern IP networks was completed in Croatia and Montenegro in 2015, and was also almost fully completed in Hungary in the reporting year. In Germany and our other integrated national companies, this transformation is well underway and is set to be virtually complete by 2018. The establishment of a new Board of Management department for Technology and Innovation, headed by Claudia Nemat, underscores the importance we place on uniform network production and management. As technology, IT and innovation increasingly converge, this lays important groundwork for the ongoing digitization of our telecommunications networks.

We continue to invest in our fixed networks to provide the best possible broadband coverage and remain competitive. We are bringing **optical fiber** closer to our customers with the **FTTC** (fiber to the curb) technology and in doing so, increase bandwidths. In Germany, we are planning to be able to offer approximately 80 percent of the population a download bandwidth of at least 50 Mbit/s – thanks, for example, to **vectoring** technology.

In mobile communications, we intend to further roll out our **LTE networks**: In Germany, we plan to cover approximately 95 percent of the population with LTE by 2018; in our European national companies, coverage is to reach between 75 and 95 percent. Furthermore, we want to provide substantially more Wi-Fi HotSpots in Germany and build an even denser mobile communications network using high-performance small cells. In the United States, our 4G/LTE network covered around 314 million people at the end of 2016.

As a leading telecommunications provider, we are actively involved in developing and standardizing the **fifth generation mobile communications standard (5G)**. 5G will open the door to entirely new and flexible use cases. The key components of the 5G concept are the deployment and distribution of computing power in the network, dedicated network layers for individual applications, and the seamless integration of fixed-network and mobile communications technologies. 5G provides the basis for future technologies such as virtual reality, autonomous driving, and the Internet of Things. We anticipate that 5G will be ready from 2020.

Best customer experience

With our award-winning network, integrated products, and service excellence, we are creating an **outstanding customer experience**. We delight our customers with expertise, simplicity, and speed. Also for this reason, we continuously improve our processes and IT systems.

Fixed-mobile convergence (**FMC**), i.e., the joint marketing of fixed-network and mobile communications in one product, offers our customers a seamless telecommunications experience – consistently and across different technologies. We therefore intend to significantly expand the range of convergent products we offer. Among other reasons, the aim is to win new customers and retain existing customers, as well as to increase revenue. Around three million customers in Germany had opted for MagentaEins by the end of 2016. We thus met our target of gaining three million FMC customers by 2018 in the 2016 financial year – two years earlier than originally planned. In total, the integrated national companies of our Europe operating segment won around 1.4 million customers for our FMC products as of the end of 2016.

Our customers benefit from our **convergent product portfolio**, which shows them just how easy and uncomplicated telecommunications can be. Take the EU-Flat Plus mobile flat rate, for example, which is only available to our MagentaEins customers. We had launched our **hybrid router** in Germany in 2014. It combines the strengths of the fixed network (consistent high capacity) with those of mobile communications (high transmission rates).

By 2018, we plan to improve our **customer service**, focusing on customers and efficiency. We want to offer our customers an outstanding and consistent service experience on all channels – shop, hotline, and online. We are paying particular attention to expanding our online channel and seamless switching between the different channels. In 2016 we improved customer service in a number of areas. In Germany, for example, we overhauled the mobile and fixed-network portal, the online shop, and the Customer Center to give them a modern look and began work to combine these onto one single platform. Every new fixed-network customer is assigned a personal switch adviser – this is just one of the ways in which we set ourselves apart from the competition as a premium service provider. Our integrated sales and service app, which can handle all important customer issues, has now been rolled out at six of our European national companies, most recently in Austria.

For more information on our outstanding network, please refer to the section "Highlights in the 2016 financial year," page 22 et seq.

9 **INDUSTRY, INNOVATION AND INFRASTRUCTURE**

For information on our progress with building out the network, please refer to the section "Development of business in the operating segments," page 52 et seq.

We measure **customer retention/satisfaction** using the globally recognized TRI*M method. Based on this TRI*M performance indicator, we improve our customer contact processes, and our products and services. We determine the loyalty of our customers towards the Company in surveys. The results are presented as a performance indicator, the TRI*M index, which ranges between minus 66 and plus 134 points. In the reporting year, the value stood at 70.2 points, compared with 68.3 points in the prior year, based on the equivalent basis for calculation. Our aim is to improve this result step by step through 2018.

For our customers, **data privacy and security** are very important and hence are a vital differentiator in competition. We guarantee our customers that we will handle their data securely and confidentially. We also see data privacy and security as a growing business area, which we want to significantly expand with existing and new security solutions. The new Telekom Security business unit, which bundles all security activities across the Group, went into operation on January 1, 2017. [SDG](#)

Win with partners

We are an innovative company. We are focusing our own innovative power on our networks, our process landscape, selected platforms for the production and sale of our products, and on our access products. Together with partners, we offer an even wider range of products and services and deliver the digital offerings our customers want. We offer our partners access to a large and attractive customer base, to our established marketing and sales, and to technical wholesale services. In addition, these partnerships offer the chance to set ourselves apart from the competition. [E](#)

We want to be the preferred telecommunications provider when it comes to innovative partners selling their products. For this reason, we have developed a **standardized platform**, which can be thought of as a power strip (Steckerleiste) that partners can simply plug in to integrate their services. We launched the “Steckerleiste” platform in Albania, Austria and Montenegro in the reporting year. More countries, including Poland and Macedonia, are to follow in 2017.

We are also further developing our **TV business** and want to drive growth here too. We make attractive content accessible across all screens. We rolled out a new TV platform in the reporting year with the aim of guaranteeing an even better TV experience. EntertainTV has a completely redesigned user interface, new hardware, and innovative features. The service includes more than 300 channels and some 120,000 on-demand titles from partners such as Sky and Maxdome. The new “restart” and “seven-day replay” functions mean live television and video on demand are converging to an ever greater extent. An added benefit for MagentaEins customers is the EntertainTV mobil option, which is included free of charge in their product bundle until December 31, 2017.

With our **cloud partner solutions** such as Microsoft Azure and Office 365, Salesforce, Informatica, or the VMware vCloud, we provide our customers with an attractive platform offering from a single source:

highly integrated and secure. We also operate the Open Telekom Cloud together with our partner Huawei as a stand-out solution “Made in Germany” that offers utmost security at low prices. Our public cloud offering had already attracted more than 65,000 registered customers by the end of the reporting year.

In 2016 we established a new alliance, **ngena** (Next Generation Enterprise Network Alliance), together with our partners CenturyLink, Reliance, and SK Telecom. ngena aims to provide services to international business customers from 2017 as an independent company and attract a further 20 partners in the coming years. All members of ngena ensure network access in their markets. ngena links the individual networks to create a global network using Cisco cloud and virtualization technology and offers this global network to ngena’s members as a platform. Using this “sharing economy” business model, ngena aims to secure a competitive advantage in corporate customer network business.

Lead in business

The strengthening of our position on the business customer market is an important step on our journey to become the leading telecommunications company in Europe. In addition to traditional IT and telecommunications business, we will continue to focus increasingly on platform-based services (in the area of the Internet of Things, for example) and cloud services.

In particular, business in IT and telecommunications services from the cloud is growing unabatedly and in response, we are constantly expanding our **cloud ecosystem** to include technology partners who are in turn market leaders. We are already one of the leading providers in Europe with our scalable cloud platforms and we are growing faster than the market in the area of public cloud computing.

The Market Unit of our corporate customer arm, T-Systems, comprises three divisions that are closely aligned with the needs of our customers: the IT Division, the TC Division (Telecommunications), and the Digital Division. The **Digital Division** will be an especially important growth driver: We expect substantial double-digit growth rates through 2018 with platform-based solutions in the healthcare, mobility, and industry business areas, as well as with our own and partner cloud products. We plan to generate more than half of T-Systems’ external revenue in such digital growth areas by 2018. In 2016, the annual average stood at around 48 percent. [SDG](#)

SUPPORTING AREAS OF OPERATION

The supporting areas of operation provide the framework for our internal activities.

Transform portfolio. In 2016, we steadily continued to develop our **portfolio of investments** with a view to our strategic target. The portfolio of business areas that cannot be developed adequately in the Group has been streamlined systematically. For example, we expect to add substantial further value by selling Strato AG to United Internet AG, which was



For more information on our partnerships, please refer to the section “Highlights in the 2016 financial year,” page 22 et seq.



20	Deutsche Telekom at a glance	70	Corporate responsibility
26	Group organization	77	Innovation and product development
28	Group strategy	82	Employees
31	Management of the Group	87	Significant events after the reporting period
35	The economic environment	87	Forecast
40	Development of business in the Group	97	Risk and opportunity management
52	Development of business in the operating segments	112	Accounting-related internal control system
66	Development of business at Deutsche Telekom AG	113	Other disclosures

agreed in December 2016. To ensure the efficient management of our investments in BT, T-Mobile Netherlands, DFMG (Deutsche Funkturm) and Deutsche Telekom Capital Partners going forward, we have created the new Group Development operating segment. With a 12-percent financial stake, we remain BT's largest shareholder and continue to participate in the development of the company and the UK telecommunications market. In future, we plan to support and intensify the partnership and thus increase the value of our investment. At T-Mobile Netherlands, our focus is on repositioning the business in the market with the aim of reversing the current downward trend in revenue and earnings. The acquisition of the fixed-network operations from Vodafone Netherlands means we are now in a position to offer fixed-network and convergence products in the Netherlands as well. DFMG will continue to concentrate heavily on its biggest customer within the Group, Telekom Deutschland, but the company will also redouble its efforts to expand third-party business and tap growth areas.

Evolve financial targets & efficiency. Our finance strategy ensures that our balance sheet ratios remain sound. We want to earn our cost of capital in the medium term and cost-effectively manage our non-current assets in terms of utilization and replacement investments. We are sticking to our strict cost discipline.

Encourage leadership & performance development. The digital transformation makes work more flexible, more virtual and more participative. Our managers are the architects of the digital transformation and support our employees as we move into the new digital age. They do so on the basis of our leadership principles "Collaborate," "Innovate," and "Empower to perform," our Guiding Principles, and our leadership model "Lead to win," which is based on a continuous dialog between manager and employee. At the heart of this is feedback on performance and development, a direct link between performance assessment and incentives, and the determination of personal development paths. [SDG](#) 

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

To be the leading European telecommunications provider.

- As one of the **leading providers**, we already have very high-performance networks and offer outstanding service for our customers.
- Our networks are **integrated** and employ uniform technical standards.
- We provide the platforms for **successful partnerships** in the consumer and business customer segments.
- At heart we are a **telecommunications provider** – that also offers selected connectivity-based, scalable ICT business models.

MANAGEMENT OF THE GROUP

- Finance strategy implemented consistently
- Group-wide value management

We continue to be 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.

FINANCE STRATEGY

In 2016, we continued to systematically execute the finance strategy that we announced at our Capital Markets Days in February 2015. 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 reliable dividend policy for shareholders, which is subject to approval by the relevant bodies and the fulfillment of other legal requirements. We intend to pay a dividend of at least EUR 0.50 per dividend-bearing share for the financial years 2015 to 2018. Relative growth in free cash flow is also to be taken into account when measuring the amount of the dividend for the specified financial years. Thus we offer our shareholders both an attractive return and planning reliability. Following its success in previous years, we again offered our shareholders the option of converting the dividend for the 2015 financial year into Deutsche Telekom AG shares instead of receiving it as a cash payment. The latter offers investors the opportunity to leave funds in our Company, improve financial ratios further, and to benefit even more from the success of their investment in the long term. We consider offering our shareholders this option again for the 2016 financial year.

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 drive forward the transformation of the Company to an IP-based production model. In mobile communications, the infrastructure build-out will focus on the LTE standard, and in the fixed network, on optical fiber and vectoring.

8 DECENT WORK AND ECONOMIC GROWTH



For more information on the priorities of our HR work, please refer to the section "Employees," page 82 et seq.

Our finance strategy until 2018

Equity	Leading European Telco strategy				Debt
<p>Reliable shareholder remuneration policy</p> <p>Dividend^a Following free cash flow growth Floor at EUR 0.50 per share and year</p> <p>Attractive option: choice of converting dividend entitlements into shares (dividend in kind)</p>	<p>Integrated IP networks</p>	<p>Best customer experience</p>	<p>Win with partners</p>	<p>Lead in business</p>	<p>Undisputed access to debt capital markets</p> <p>Rating: A-/BBB</p> <p>Net debt/adj. EBITDA: 2 to 2.5x</p> <p>Equity ratio: 25 to 35%</p> <p>Liquidity reserve: covers maturities of coming 24 months</p>
Value creation: ROCE > WACC					
<ol style="list-style-type: none"> 1 Infrastructure transformation Support fast IP migration and transform network infrastructure 2 Cost transformation Reduce indirect cost 3 Portfolio management Deliver on preferred business model (integrated + B2C/B2B) and value generation 4 Risk management Maintain a low-risk country portfolio 					

^aSubject to approval by the relevant bodies and the fulfillment of other legal requirements.



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 our cost of capital in the medium term. We aim to achieve this goal in part by optimizing the utilization of our non-current assets. We also intend to achieve our target of earning our cost of capital through strict cost discipline and improved cross-functional collaboration. A good example of this is the creation of our multi-shared service center Deutsche Telekom Services Europe GmbH, which bundles cross-functional service units with the aim of establishing end-to-end process responsibility on an international level. Improvements like this will ensure our viability. We also focus our performance management on unadjusted EBIT. Taking capital expenditure into consideration brings EBIT closer

to the ROCE concept and supports our rigorous focus on the efficient allocation of capital at the Deutsche Telekom Group. [SDG](#)

VALUE MANAGEMENT AND PERFORMANCE MANAGEMENT SYSTEM

In order to set and achieve our strategic goals more effectively, we are pursuing a Group-wide value management approach. Ultimately, specific performance indicators are required to measure success. The basis for this is a reliable and understandable performance management system. The following tables and information provide an overview of our key financial and non-financial performance indicators.

Financial performance indicators

		2016	2015	2014	2013	2012
ROCE	%	5.7	4.8	5.5	3.8	(2.4)
Net revenue	billions of €	73.1	69.2	62.7	60.1	58.2
Profit (loss) from operations (EBIT)	billions of €	9.2	7.0	7.2	4.9	(4.0)
EBITDA (adjusted for special factors)	billions of €	21.4	19.9	17.6	17.4	18.0
Free cash flow (before dividend payments, spectrum investment) ^a	billions of €	4.9	4.5	4.1	4.6	6.2
Cash capex ^b	billions of €	(11.0)	(10.8)	(9.5)	(8.9)	(8.0)
Rating (Standard & Poor's, Fitch)		BBB+	BBB+	BBB+	BBB+	BBB+
Rating (Moody's)		Baa1	Baa1	Baa1	Baa1	Baa1

^aAnd before AT&T transactions and compensation payments for MetroPCS employees.

^bBefore spectrum investment.

20	Deutsche Telekom at a glance	70	Corporate responsibility
26	Group organization	77	Innovation and product development
28	Group strategy	82	Employees
31	Management of the Group	87	Significant events after the reporting period
35	The economic environment	87	Forecast
40	Development of business in the Group	97	Risk and opportunity management
52	Development of business in the operating segments	112	Accounting-related internal control system
66	Development of business at Deutsche Telekom AG	113	Other disclosures

PROFITABILITY

In order to underline the importance of the successful long-term development of our Group, we have incorporated sustainable growth in enterprise value into our medium-term aims and implemented it as a separate (key performance indicator) KPI 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 for this purpose in the course of the year (net operating assets, NOA).

ROCE is the performance indicator that helps us to embed our aim of sustainably increasing the value of our Group across all operational activities. Additional value accrues when the return on capital employed exceeds the cost of capital. Our goal, therefore, 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).

Calculation of the ROCE financial performance indicator

millions of €

		2016	2015
ROCE	%	5.7	4.8
Profit from operations (EBIT)		9,164	7,028
Share of profit (loss) of associates and joint ventures accounted for using the equity method		(53)	24
Interest component of unrecognized rental and lease obligations		573	725
Other NOPAT adjustments		0	0
NET OPERATING PROFIT (NOP)		9,684	7,777
Tax (imputed tax rate 2016: 30.3%; 2015: 30.3%)		(2,934)	(2,356)
NET OPERATING PROFIT AFTER TAXES (NOPAT)		6,750	5,421
Cash and cash equivalents		7,747	6,897
Operating working capital		(5,056)	(5,311)
Intangible assets		60,599	57,025
Property, plant and equipment		46,758	44,637
Non-current assets and disposal groups held for sale ^a		372	849
Investments accounted for using the equity method		725	822
Other assets		279	532
Present value of unrecognized rental and lease obligations		14,320	18,137
Other provisions		(6,388)	(6,345)
Other NOA adjustments		0	0
NET OPERATING ASSETS (NOA)		119,356	117,243
AVERAGE NET OPERATING ASSETS (Ø NOA)		119,101	112,441

^a Excluding the carrying amounts of companies accounted for using the equity method.

NOPAT is an earnings indicator derived from the income statement. As it does not take cost of capital into account, it also includes the interest component of unrecognized rental and lease obligations.

NOA include 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 and other receivables, inventories, trade and other payables, as well as additional current and non-current assets and liabilities selected in line with the internal steering logic. NOA also include rental and operating lease obligations recognized by the lessor where required for operations. 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 immense 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. ROCE has given us a holistic perspective from which to consider our investments with fresh insight.

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. We also use the EBIT and EBITDA 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 EBITDA/EBIT 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, EBIT, and net profit/loss to the respective figures adjusted for special factors, please refer to the table on page 45.

FINANCIAL FLEXIBILITY

We define free cash flow as net cash from operating activities less net cash outflows for investments in intangible assets (excluding goodwill) and property, plant and equipment. This indicator is the main yardstick for providers of debt capital and equity. It measures the potential for further developing our Company, e.g., for generating organic growth and the ability to pay dividends and repay debt.

Central free cash flow management is responsible for transparency, steering, forecasts, and performance measurement in relation to free cash flow and especially in relation to working capital. As part of our

measures to optimize working capital over the long term, in the reporting year the focus was on further extending the period of payment for our payables in Germany and Europe, evaluating inventories management in Germany and Europe, and further optimizing receivables management in all our operating segments; this also involved factoring measures. We plan to continue down this route in the coming years by focusing on the following areas: extending the period of payment for payables and improving receivables and inventories management in the United States, Germany, and Europe.

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.

NON-FINANCIAL PERFORMANCE INDICATORS

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

	2016	2015	2014	2013	2012
Customer satisfaction (TRI*M index)	70.2	67.4	65.9	64.9	-
Employee satisfaction (commitment index) ^a	4.1	4.1	4.0	4.0	4.0
FIXED-NETWORK AND MOBILE CUSTOMERS					
Mobile customers millions	165.0	156.4	150.5	142.5	127.8
Fixed-network lines millions	28.5	29.0	29.8	30.8	32.1
Broadband lines ^b millions	18.5	17.8	17.4	17.1	16.9
SYSTEMS SOLUTIONS					
Order entry ^c millions of €	6,605	5,608	7,107	7,792	8,737

^a Commitment index according to the most recent employee surveys in 2015 and 2012.

^b Excluding wholesale.

^c The prior-period comparative for 2015 and 2014 was adjusted retrospectively due to changes in the structure of the Group implemented as of January 1, 2016. 



For more information, please refer to Note 31 "Segment reporting" in the notes to the consolidated financial statements, page 192 et seq.

20	Deutsche Telekom at a glance	70	Corporate responsibility
26	Group organization	77	Innovation and product development
28	Group strategy	82	Employees
31	Management of the Group	87	Significant events after the reporting period
35	The economic environment	87	Forecast
40	Development of business in the Group	97	Risk and opportunity management
52	Development of business in the operating segments	112	Accounting-related internal control system
66	Development of business at Deutsche Telekom AG	113	Other disclosures

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 and fixed-network lines.

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 our customers 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 executives. It was also used as a parameter in the long-term incentive plan which was launched in 2015. 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 executives can benefit from the development of customer retention/satisfaction across the Group. 

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 and updated with the results of the last pulse survey. 

In view of the major significance of employee satisfaction for the success of the Company, executives 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. This allows eligible executives to benefit from the development of employee satisfaction across the Group.

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 – those yet to be processed – within the Systems Solutions operating segment. 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

- Economic development in our markets positive
- Telecommunications market impacted by further regulatory interventions

MACROECONOMIC DEVELOPMENT

The global economy recovered somewhat over the course of the reporting year. This positive trend is attributable to stable production in most industrialized nations and, in particular, to an economic improvement in the emerging economies. In its January 2017 forecast, the International Monetary Fund (IMF) estimates that in 2016 gross domestic product (GDP) increased by 4.1 percent in the emerging and developing countries and by 1.6 percent in the industrialized countries.

In our core markets, economic growth rates largely recorded positive trends in 2016. GDP in Germany increased by 1.8 percent year-on-year, again driven largely by private consumption. Unemployment was low in December 2016 at 6.1 percent. The U.S. economy grew by 1.6 percent in the 2016 reporting year. At the end of 2016, the unemployment rate stood at 4.9 percent; its lowest level for nine years. GDP growth rates continued to develop positively in 2016 in virtually all countries in our Europe operating segment. The economies continued to profit from rising domestic consumption and stable demand, primarily from the eurozone. Greece is still in a period of transition and could only participate to a limited extent in the growth across Europe as a whole in 2016; however, the economy there is showing signs of stabilization, reflected in slight growth in the second half of the year.

The situation in the national labor markets in our Europe operating segment continued to improve in most countries thanks to positive economic growth. However, some countries, such as Greece and Croatia, continue to report high structural unemployment. The recession of recent years, along with economic uncertainties, have weakened the labor market situation in Greece. The labor markets in Poland and Slovakia recovered in 2016, although levels of unemployment at the older end of the working-age population and in rural areas remain high.

High structural unemployment rates lead to reduced purchasing power among those affected and impact on their willingness to spend. Some customers have adapted their demand behavior. In addition to long-term unemployment, austerity measures in the public sector and the low willingness to invest also had a detrimental effect on demand for telecommunications and ICT services. In some countries, the intense pressure to shore up state finances led to special taxes being maintained or introduced for telecommunications companies.



For more information on customer satisfaction, please refer to the section "Group strategy," page 28 et seq.

8 DECENT WORK AND ECONOMIC GROWTH



For more information on employee satisfaction, please refer to the section "Employees," page 82 et seq.

The following table shows the GDP growth rate trends and the unemployment rates in our most important markets.

Development of GDP and the unemployment rate in our core markets from 2014 to 2016

	GDP for 2014 compared with 2013	GDP for 2015 compared with 2014	GDP estimate for 2016 compared with 2015	Unemployment rate in 2014	Unemployment rate in 2015	Estimated unemployment rate for 2016
Germany	1.6	1.7	1.8	6.7	6.4	6.1
United States	2.4	2.6	1.6	6.2	5.3	4.9
Greece	0.7	(0.2)	0.1	26.5	25.0	23.4
Romania	3.1	3.8	4.8	5.2	5.1	4.8
Hungary	3.7	2.9	2.0	7.5	6.7	5.0
Poland	3.3	3.6	3.1	12.3	10.5	9.0
Czech Republic	2.7	4.5	2.5	7.7	6.5	5.5
Croatia	(0.4)	1.6	2.4	19.3	17.1	15.0
Netherlands	1.4	2.0	2.1	9.0	8.7	7.3
Slovakia	2.5	3.6	3.3	13.2	11.5	9.7
Austria	0.6	1.0	1.5	5.6	5.7	6.1
United Kingdom	3.1	2.2	2.0	6.2	5.3	4.9

Sources: Bloomberg Consensus, Consensus Economics, Oxford Economics; January 2017.

TELECOMMUNICATIONS MARKET

Worldwide, the market for information and communications technologies (ICT) grew by 2.1 percent in 2016 to EUR 3.1 trillion. This increase was due to strong demand for telecommunications equipment and services, especially in India, China, and the United States. The high-tech association Bitkom (Federal Association for Information Technology, Telecommunications and New Media) and the EITO (European Information Technology Observatory) expect the telecommunications market segment to record an increase of 1.5 percent to EUR 1.8 trillion and the information technology (IT) market segment to record an increase of 2.9 percent for 2016. The global market for telecommunications services grew by 1.7 percent. In the European Union, revenues from telecommunications services stabilized in the 2016 financial year and for the first time recorded a slight plus of 0.3 percent following eight consecutive years of decline. The European Telecommunications Network Operators' Association (ETNO) expects total revenues in the EU telecommunications market to have grown slightly by 0.2 percent year-on-year to EUR 245 billion in the reporting year. The growth in data revenues in the 2016 reporting year offset the declines in traditional voice and messaging services, which remain under pressure from extensive regulatory interventions including cuts in roaming charges and termination rates, and from the substitution effects caused by OTT (over-the-top) players.

The digitization of the economy and society changes on the one hand the existing market structures, and on the other, the market realities of many industries that have previously been exclusively analog. Use of data services is growing exponentially. Demand is also rising for more speed – for both download and upload, for fixed and mobile networks. New technologies, like the Internet of Things (IoT), Industry 4.0, big data, or cloud computing place high demands on network infrastructure: Ubiquitous connectivity and high performance standards and security are critical to success for many applications. In a market environment in which the network infrastructure needs to be substantially upgraded and

a broad ecosystem of rival market players has developed, investment incentives must be created – for the good of consumers, the industry, and a digitally sovereign economy.

Consolidation pressure remains high in the European telecommunications industry, partly due to declining revenues in many markets as a result of regulatory interventions, increasing competition, and technological change. In addition, high investments are needed for the network build-out, for innovation, and the acquisition of spectrum. The British Competition and Markets Authority approved the acquisition of EE by BT unconditionally and without remedies in January 2016. By contrast, the European Commission only approved the combination of Liberty Global and BASE in Belgium subject to strict conditions. The Commission intervention resulted in consolidation plans being blocked in Denmark (between Telia and Telenor) and in the United Kingdom (between Three and O₂); in Italy the Commission supported the establishment of a fourth mobile provider, thus creating favorable conditions for Iliad to enter the market. The Commission approved the combination of Vodafone and Liberty Global in the Netherlands subject to Vodafone selling its fixed-network business to a suitable competitor. Our Dutch subsidiary T-Mobile Netherlands participated successfully in a bidding process.

European General Data Protection Regulation. The European General Data Protection Regulation will enter into force on May 25, 2018. The new data protection law closes a large gap in the regulation of service providers outside of the EU by imposing the same rules for all market players operating in the EU. The Regulation assures Europe of a high level of data protection and, at the same time, will pave the way for new digital business models. The General Data Protection Regulation applies directly in the member states and does not need to be transposed into national law. Contrary or redundant German law must be repealed by way of a specific act (Rechtsbereinigungsgesetz).

20	Deutsche Telekom at a glance	70	Corporate responsibility
26	Group organization	77	Innovation and product development
28	Group strategy	82	Employees
31	Management of the Group	87	Significant events after the reporting period
35	The economic environment	87	Forecast
40	Development of business in the Group	97	Risk and opportunity management
52	Development of business in the operating segments	112	Accounting-related internal control system
66	Development of business at Deutsche Telekom AG	113	Other disclosures

EU-U.S. Privacy Shield. The European Commission put forward the EU-U.S. Privacy Shield in early February 2016. As in the case of the former Safe Harbor Agreement, the Privacy Shield is intended to enable personal data of EU citizens to be transmitted to and processed in the United States. The majority of EU member states approved the final draft of the Privacy Shield, which was then adopted by the European Commission on July 11, 2016. The Privacy Principles it contains represent an improved set of data protection requirements compared with the Safe Harbor Agreement. Following criticism of the first draft of the Privacy Shield, the European Commission endeavored in a revised draft to assuage in particular the concerns expressed recently by the Article 29 Working Party, which comprises representatives from national data protection authorities in Europe. It cannot be ruled out that the Privacy Shield will be referred to the European Court of Justice again, in particular with regard to the legality of the still possible mass recording of personal data by national U.S. authorities.

IT security legislation. Within the scope of the German IT Security Act (IT-Sicherheitsgesetz – IT-SiG), a draft ordinance (BSI-KritisV) was drawn up in the first quarter of 2016, which sets out, inter alia, specific criteria that operators of critical infrastructure (KRITIS) from the information technology and telecommunications, water, energy, and food sectors can use to determine whether they are subject to the provisions of the IT-SiG. The ordinance entered into force on May 3, 2016. As a result, the provisions of the German Telecommunications Act (Telekommunikationsgesetz) were tightened up for the telecommunications sector, requiring precautions to be taken in particular with regard to the failure safety of the networks and services. In our own interests, we took these precautions before the Act was amended, and hence we already satisfied the main obligations for safeguarding public security.

The European Parliament adopted the EU Network and Information Security Directive on July 6, 2016. The Directive – in addition to the provisions of IT-SiG – requires online marketplaces, search engine operators, and cloud service providers to comply with minimum requirements designed to safeguard the security of their infrastructures and to report incidents. It may become necessary for German lawmakers to amend the IT-SiG. It remains to be seen whether such an amendment would also remedy the previous deficiency of the IT-SiG regarding the non-consideration of hardware and software vendors.

Work on the new **Payment Services Directive 2** at EU level is complete. The Directive will replace Payment Services Directive 1 from 2007 and must be implemented in the member states by the start of 2018. The Federal Ministry of Finance (BMF) published a first draft in December 2016. Where no payment services license exists, billing models for voice and non-voice services for invoicing third-party services via the telephone bill are restricted to a maximum of EUR 300 per month and EUR 50 per transaction. Depending on its transposition into national law, this may lead to severe restrictions in business models for billing third-party and to costs for implementing compliance with the thresholds. In addition, it will impose additional reporting obligations on the Federal Financial Supervisory Authority (BaFin).

GERMANY

According to Bitkom, revenue from IT products and services, telecommunications, and consumer electronics increased by 1.7 percent to around EUR 161 billion in Germany in the reporting year. Information technology in particular recorded strong growth of 3.6 percent. Telecommunications revenues (telecommunications services, hardware, and infrastructure systems) decreased by 0.4 percent in 2016 to around EUR 67 billion. The positive development in infrastructure systems could not completely offset weakening business with terminal equipment – caused in part by the first ever decline in smartphone revenues in 2016 – and steadily declining revenues from fixed-network and mobile services. Regulatory effects such as the reduction in EU roaming charges and interconnection rates were the main reason for lower revenues from telecommunications services.

The German broadband market grew by more than 4 percent in 2016. There are now some 32 million broadband lines in Germany. Providers with their own infrastructure benefited the most from this market growth, along with resellers and regional providers that do not have their own network. 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. Integrated offerings comprising fixed-network and mobile communications not only offer customers numerous advantages, but also increase customer retention. The trend towards integrated offerings continued in 2016, with more and more providers incorporating them into their portfolios. We launched our first integrated offering, MagentaEins, 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 services, and security applications. Vodafone followed suit in 2015 with Red One; then O₂ in 2016 with Blue One.

In the German mobile market, **service revenues** decreased slightly by around 0.5 percent year-on-year to approximately EUR 18.2 billion, driven largely by the aforementioned regulatory effects and ongoing price pressure. The use of mobile data is growing 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; use of these services requires use of the mobile Internet and data flat rates. The growing popularity of connected products such as smartphones and tablets, as well as watches, shoes, bicycles, and much more, is pushing up demand for mobile broadband speeds and for large data volumes in the rate plan portfolios.

Digitization is continuing apace. The result: growing demand by the industry for ever 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 (machine-to-machine) are needed in order to meet these demands. We believe that the M2M sector alone grew by around 30 percent in 2016, and this growth is unlikely to slow in the coming years. In the IT sector, we expect market growth to be around 5 percent, driven largely by the strong development of cloud services of over 17 percent. [SDG](#)



UNITED STATES

The mobile communications market in the United States continues to be divided between four major nationwide providers – AT&T, Verizon Wireless, Sprint, and T-Mobile US – 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 mobile and data traffic. The two largest national network operators are AT&T and Verizon Wireless. The market continues to be very dynamic. The Dutch company Altice completed its USD 17.7 billion acquisition of Cablevision Systems Corp. in June 2016. Charter Communications completed its USD 55.1 billion acquisition of Time Warner Cable in May 2016. AT&T has announced plans to acquire media giant Time Warner Inc. for USD 85.4 billion. Comcast, Charter, and Altice have all hinted at interest in launching their own mobile virtual networks, as well. The consolidation and convergence of the U. S. telecommunications market is expected to continue, as fixed and wireless become more integrated.

Growth has slowed as a result of the high market penetration. Voice revenues continued to decline slightly in 2016. However, the persistent data revenue surplus could more than compensate the decline. Mobile data usage remains at a high level, in line with the rapid development of LTE networks and the high use of smartphones, which now account for around 80 percent of all handsets. Data revenue is growing steadily year after year and is accompanied by tough price competition from the main market players. Since 2013, T-Mobile US has brought about a significant operational turnaround and intensified competition in the U. S. mobile market. This is mainly due to improvements in their network, as well as successful implementation of the Un-carrier initiatives, which contributed very successfully to customer satisfaction.

The fierce competition is accompanied by regulatory announcements of the FCC (Federal Communications Commission). In June 2016, the DC Circuit Court of Appeals upheld the FCC's Open Internet Order. The provisions define a standard, which in the future is to apply to the conduct of the affected companies. For the first time, this also includes interconnection agreements between Internet service providers (ISPs) and third parties. The FCC reserves the right to carry out case-by-case reviews with regard to the conduct of the affected companies. The challengers have petitioned the court for a rehearing.

The Broadcast Incentive Auction for frequencies began in May 2016, and will continue into 2017. The underlying intention is for television providers to voluntarily hand back their licensed frequencies in exchange for a portion of the proceeds from the auction of the returned spectrum to mobile providers.

EUROPE

Revenues in the traditional communication markets of our Europe operating segment declined slightly overall in 2016. In fixed-network business, ongoing growth in broadband and TV business only partially offset the decline in fixed-network telephony. The mobile communications markets also reported a slight downward trend: Growth rates for

mobile data usage were high, but not enough to fully offset the declines in traditional voice and messaging services. Special levies on telecommunications services, in Greece for example, along with the costs of acquiring new spectrum, in Poland for example, continued to put pressure on the telecommunications industry in some of our national companies.

Competitive and price pressure continued throughout 2016 – despite business combinations and partnerships. This is largely a result of the trend towards convergent product bundles such as KPN Compleet in the Netherlands and Kombinieren & Sparen (combine & save) in Austria. In addition, providers with aggressive pricing strategies entered the market, e.g., Digi in Hungary and SWAN in Slovakia. Services from OTT (over-the-top) players, like WhatsApp, are also increasingly replacing traditional voice and messaging services. We have already rolled out our MagentaOne convergence product (CosmoteOne in Greece) in all countries with an integrated telecommunications infrastructure. The growing significance of FMC is placing more consolidation pressure on non-integrated providers, as demonstrated by the combination of Vodafone and Ziggo in the Netherlands. We continue to develop our mobile-centric national companies in the direction of convergence and our aim is to establish integrated business models. Corresponding measures have been put in place and some are already being implemented, such as the acquisition of Vodafone's broadband arm in the Netherlands.

The fixed-network operators in the markets of our Europe operating segments are increasingly switching from conventional telephony (PSTN) to Internet technology (all IP). By the end of 2016, we had almost completed the migration to IP in our fifth national company. The broadband build-out trend in fixed-network and mobile communications continued unabated. We invested heavily in driving forward the roll-out of the LTE and fiber-optic networks in many countries. In Hungary, the first production site for our pan-European all-IP network (Pan-Net) was ready for operation in August 2016 and is now starting central production of the first virtualized services. Our TV services were subject to intense competition in the reporting year; we successfully stood our ground thanks to exclusive broadcasting rights, such as for sporting events, and the modernization of our TV platforms in countries including Greece. [SDG](#)

SYSTEMS SOLUTIONS

The business volume in the ICT industry in Western Europe, i. e., our core market, that the Systems Solutions operating segment and the T-Systems brand can address increased by 3.1 percent, from EUR 182 billion in the prior year to EUR 188 billion. However, this trend impacted the individual business areas 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 economic recovery 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 (cyber security), Internet of Things (IoT), cloud computing, and unified communications is leading to a long-term stabilization of the markets



20	Deutsche Telekom at a glance	70	Corporate responsibility
26	Group organization	77	Innovation and product development
28	Group strategy	82	Employees
31	Management of the Group	87	Significant events after the reporting period
35	The economic environment	87	Forecast
40	Development of business in the Group	97	Risk and opportunity management
52	Development of business in the operating segments	112	Accounting-related internal control system
66	Development of business at Deutsche Telekom AG	113	Other disclosures

served by our segment. Substitution effects between fixed-network and mobile operations continue to intensify. The migration to all-IP solutions, such as the combination of Internet access, Voice over IP, IP VPN, and unified communications solutions continued to increase.

In terms of IT services, demand has grown further for cloud services and cyber security services, as has the importance of digitization, intelligent networks, the Internet of Things (including Industry 4.0), and communication between machines (M2M). The advance of digitization and the shift towards cloud solutions also transformed demand in the systems integration business. Traditional project business – application development and the associated integration – declined by 0.4 percent. By contrast, the market for consultation and integration services, infrastructure and Platforms-as-a-Service (PaaS) models grew by 31 percent.

The market for outsourcing computing and desktop services (CDS) shrank by 1.1 percent in the reporting year to EUR 57 billion. Two contrasting trends played a role in this context: Business from long-term, rather traditional outsourcing contracts declined by 5 percent, while the market for cloud computing grew by 14 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, OBS, and NTT in the telecommunications market, and IBM, HP, 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. We are positioning ourselves in this environment as a digital enabler, a cloud transformer, and an ICT operator, with a focus on quality, data security, and end-to-end responsibility for the transformation, integration, and operation of ICT services. But we are also entering increasingly into strategic partnerships with our competitors so as to offer our customers innovative solutions.

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 2016. The focus was mainly on the regulation of services for wholesale customers and the corresponding charges as well as the award of mobile frequencies.

REGULATION

Further vectoring roll-out agreed. On February 23, 2015, we applied to the Federal Network Agency to provide another 6.1 million households with superfast Internet connections (vectoring technology) in the areas near local exchanges (nearshore areas). The Federal Network Agency published the regulatory order on September 1, 2016, thus giving the green light for the vectoring roll-out. As part of an agreement under

public law, we have undertaken to roll out vectoring technology in the nearshore area in more than 7,000 service areas throughout Germany. This is tied to a fine of up to EUR 224 million that will be charged if we fail to meet this contractually agreed roll-out target on time. The Federal Network Agency is currently reviewing the specific conditions required for nearshore vectoring by way of a reference offer procedure; this review is expected to be concluded by mid-2017.

Regulation on the bitstream market. The Federal Network Agency also regulates the offer terms and conditions for **Layer 2 Bitstream access (BSA) products** in a reference offer procedure. It reached a final decision on the reference offer on December 9, 2016. The rates were reviewed in a separate procedure and, on December 21, 2016, following the completion of an EU-wide consolidation process, were approved until November 30, 2017. On November 18, 2016, the Federal Network Agency launched a new, separate procedure to review whether payments for Layer 3 BSA can be offset against the purchase of Layer 2 BSA.

Applications for ULL monthly charges. On June 29, 2016, the Federal Network Agency published the final decision on monthly charges for unbundled local loops (ULLs) and for the necessary access to passive infrastructure: The charges for the main option – access to the unbundled local loop up to the main distribution frame – are 1.7 percent lower than the charges that were previously approved, taking them from EUR 10.19/month to EUR 10.02/month. The rental fees for cable ducts and dark fiber were also reduced substantially. The new rates took effect as of July 1, 2016.

Regulation of termination rates. For the first time ever, the Federal Network Agency has now set termination rates for **mobile and fixed networks** in accordance with European Commission recommendations on the basis of “pure LRIC cost modeling.” According to the draft decision on mobile termination rates (MTR), rates are to be reduced by more than 30 percent, staggered over three years. Fixed-network termination rates (FTR) are even to decrease by around 58 percent in the next two years from the current approved level. Provided the Commission does not express any serious doubts, the final decision on termination rates is expected in the first quarter of 2017.

Additional special taxes affecting our international subsidiaries. In addition to the existing special taxes, e.g., in Greece, Hungary, Romania, and Croatia, Greece introduced taxes of 5 percent on broadband Internet access and of 10 percent on pay TV as part of an additional package of measures.

AWARDING OF FREQUENCIES

The table on the following page provides an overview of the main spectrum awards and auctions as well as license extensions at our international subsidiaries. It also indicates spectrum to be awarded in the near future in various countries. 



For further information on the spectrum awards, please refer to the section “Risk and opportunity management,” page 97 et seq.

Main spectrum awards

	Start of award procedure	End of award procedure	Frequency ranges (MHz)	Award process	Acquired spectrum (MHz)	Spectrum investment
Albania	Q3 2017	Q4 2017	800	Sealed bid ^a or auction	tbd	tbd
Greece	Q1 2017	Q2 2017	1,500/1,800/2,100/2,600	Details tbd	tbd	tbd
Macedonia	Q2 2017	Q3 2017	900/1,800	Sealed bid ^a or auction	tbd	tbd
Montenegro	Q3 2016	Q3 2016	800/900/1,800/2,100/2,600	Auction (CCA ^b)	2 x 20 in 800 MHz and further spectrum	€ 27 million
Austria	Q3 2017	Q4 2017	3,500/3,700	Auction (CCA ^b) (expected)	tbd	tbd
Netherlands	Q2 2014	Q1 2016	2,100	License extended until 2020	2 x 20	€ 24 million
Poland	Q1 2015	Q2 2016	800/2,600	Auction (SMRA ^c)/ Sealed bid ^a	2 x 10/2 x 15	Approx. PLN 4 billion (around € 1.0 billion)
Slovakia	Q1 2017	Q2 2017	1,800/3,700	Auction (SMRA ^c)	tbd	tbd
Czech Republic	Q2 2016	Q2 2016	1,800/2,600	Auction (SMRA ^c)	2 x 10/1 x 25	€ 27 million
Czech Republic	Q1 2017	Q2 2017	3,700	Auction (SMRA ^c)	tbd	tbd
Czech Republic	Q1 2017	Q2 2017	900/1,800	Extension of licenses (expected)	tbd	tbd
United States	Q3 2016	Q1 2017 (expected)	600	Incentive auction ^d	tbd	tbd

^a Submission of an individual bid in a sealed envelope, in some cases sequential, in several awards.

^b Combinatorial Clock Auction, three-stage, multi-round auction for spectrum from all frequency ranges.

^c Simultaneous electronic multi-round auction with ascending, parallel bids for all ranges.

^d Quantity and prices of spectrum to be traded depends on spectrum surrendered by radio broadcasters.

DEVELOPMENT OF BUSINESS IN THE GROUP

- Adjusted EBITDA of EUR 21.4 billion
- Free cash flow of EUR 4.9 billion

STATEMENT OF THE BOARD OF MANAGEMENT ON BUSINESS DEVELOPMENT IN 2016

Bonn, February 14, 2017

We can once again look back on a successful financial year and are on track to meet our medium-term ambition level. We met, and in some cases actually exceeded, our key company targets for 2016. Adjusted EBITDA stood at EUR 21.4 billion, slightly exceeding our guidance of EUR 21.2 billion. This was largely attributable to the positive development of business in the United States. Free cash flow (before dividend payments and spectrum investments) reached EUR 4.9 billion as expected – growth of almost 9 percent year-on-year. ROCE increased by 0.9 percentage points year-on-year, mainly as a result of income from the sale of our stake in the EE joint venture to BT. This one-time effect also benefited ROCE, which was at 5.7 percent higher than expected.

Our net revenue rose by as much as 5.6 percent to EUR 73.1 billion. The driving force here was once again our United States operating segment, which grew by 16.6 percent year-on-year, mainly thanks to strong mobile customer additions of 8.2 million in particular as a result of T-Mobile US' successful Un-carrier initiatives.

In the reporting year, our profit from operations (EBIT) amounted to EUR 9.2 billion, which was substantially higher than the prior-year figure. This was mainly as a result of income of around EUR 2.5 billion from the sale of our stake in the EE joint venture. The transactions for the exchange of spectrum licenses made in the United States during the year and the sales of further parts of our share package in Scout24 AG also had a positive effect on the development of EBIT. This trend was partially offset by higher amortization of intangible assets (including goodwill) and higher depreciation of property, plant and equipment compared with 2015 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. SDG Net profit decreased by around 18 percent to EUR 2.7 billion. The EUR 2.2 billion impairment of our financial stake in BT, which was recognized in profit and loss, almost completely offset the income from the sale of our stake in the EE joint venture, which was recognized in EBIT.

Net debt increased from EUR 47.6 billion to EUR 50.0 billion, primarily as a result of acquiring mobile spectrum and continuing to invest heavily in building out and modernizing our networks in the United States, Germany, and Europe.

Subject to approval by the relevant bodies and the fulfillment of other legal requirements, we continue to adhere to our shareholder remuneration strategy as planned and will propose to the shareholders' meeting a dividend of EUR 0.60 per dividend-bearing share. We thus once again kept the promise we made at our Capital Markets Days in February 2015, which was to include our shareholders in the relative growth of free cash



20	Deutsche Telekom at a glance	70	Corporate responsibility
26	Group organization	77	Innovation and product development
28	Group strategy	82	Employees
31	Management of the Group	87	Significant events after the reporting period
35	The economic environment	87	Forecast
40	Development of business in the Group	97	Risk and opportunity management
52	Development of business in the operating segments	112	Accounting-related internal control system
66	Development of business at Deutsche Telekom AG	113	Other disclosures

flow. We are also considering offering our shareholders the choice – as in previous years – of having their dividend paid out in cash or converting it into Deutsche Telekom AG shares.

The trends in the industry, in particular on the European telecommunications markets, remain challenging: saturated markets, rising competition, strict regulatory requirements – all resulting in further price erosion. In order to succeed in the future, we continue to invest heavily in the key to our success: our networks. In 2016, we made investments (before spectrum) of EUR 11.0 billion, a marginally higher amount than in the prior year. In the fixed network, our focus was on investments in vectoring and fiber-optic roll-out in Germany, IPTV, and the continued migration to an IP-based network. In mobile communications, we invested in LTE, increased network coverage, and upgraded capacity to meet increasing demand for high-speed data transfer rates in all our operating segments. Our rating remained solid in 2016 with undisputed access to the capital market at all times. This helps us to flexibly manage our planned investments for the coming years and establish the basis for further growth.

Our customer satisfaction levels developed positively. In the reporting year, we raised our TRI*M customer loyalty score once again. Employee satisfaction at Deutsche Telekom also remains at a high level. The surveys conducted in 2016 corroborated the good results of our last employee survey in 2015. [SDG](#)

Against this backdrop, we are reasserting our commitment to the strategic goal we set ourselves in 2014 of becoming the leading European telecommunications provider. With this goal in mind, in 2016 we continued to focus intently on delivering state-of-the-art networks and products that give our customers simple, convenient access to the digital world. We continue to see ourselves as the driving force behind the creation of a modern and competitive digital Europe. [SDG](#)

COMPARISON OF THE GROUP'S EXPECTATIONS WITH ACTUAL FIGURES

In the 2015 Annual Report, we outlined expectations for the 2016 financial year for our financial and non-financial key performance indicators anchored in our management system. The following tables summarize the results in 2015, the results expected for the reporting year, and the actual results achieved in 2016. The performance indicators that we also forecast in the 2015 Annual Report and their development are presented in the individual sections.

Comparison of the expected financial key performance indicators with actual figures

		Results in 2015	Expectations for 2016	Results in 2016
ROCE	%	4.8	slight increase	5.7
Net revenue	billions of €	69.2	increase	73.1
Profit (loss) from operations (EBIT)	billions of €	7.0	strong increase	9.2
EBITDA (adjusted for special factors)	billions of €	19.9	around 21.2	21.4
Free cash flow (before dividend payments and spectrum investment)	billions of €	4.5	around 4.9	4.9
Cash capex ^a	billions of €	10.8	around 11.2	11.0
Rating (Standard & Poor's, Fitch)		BBB+	from A- to BBB	BBB+
Rating (Moody's)		Baa1	from A3 to Baa2	Baa1

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

		Results in 2015	Expectations for 2016	Results in 2016
Customer satisfaction (TRI*M index)		67.4	slight increase	70.2
Employment satisfaction (commitment index) ^b		4.1	stable trend	4.1
FIXED-NETWORK AND MOBILE CUSTOMERS				
GERMANY				
Mobile customers	millions	40.4	slight increase	41.8
Fixed-network lines	millions	20.2	slight decrease	19.8
Broadband lines	millions	12.6	slight increase	12.9
UNITED STATES				
Branded postpaid	millions	31.7	strong increase	34.4
Branded prepay	millions	17.6	slight increase	19.8
EUROPE				
Mobile customers	millions	52.7	decrease	51.7
Fixed-network lines	millions	8.8	slight decrease	8.7
Retail broadband lines	millions	5.2	increase	5.6
SYSTEMS SOLUTIONS				
Order entry	millions of €	5,608	increase	6,605

^a Before spectrum investment.

^b Commitment index according to the most recent employee surveys in 2015 and 2012.

8 DECENT WORK AND ECONOMIC GROWTH



9 INDUSTRY, INNOVATION AND INFRASTRUCTURE





Details on the trends in our financial and non-financial key performance indicators can be found in this section as well as in the section "Development of business in the operating segments," page 52 et seq.

In the reporting year, we met or exceeded all of our financial key performance indicators forecast in the prior year. Our performance in 2016 was dominated by substantial growth in revenue and adjusted EBITDA, driven mainly by U. S. business, which recorded growth on the back of the persistently rapid rate of new customer acquisition as a result of the Un-carrier campaigns. Net exchange rate effects were only a subordinate factor influencing these performance indicators. The positive effect of the terminal equipment lease model introduced at T-Mobile US had already been factored into our expectations for adjusted EBITDA and, at the time of our forecast, we had also made reference to the higher volatility of our financial figures. As for cash capex (before spectrum investments), though we came in just below the forecast figure of around EUR 11.2 billion, our investment volume of EUR 11.0 billion was even higher than last year's already strong level. In the Germany, Europe, and United States operating segments, cash capex increased as a result of the investments made in connection with the network build-out and the network modernization.

Our key performance indicator ROCE (return on capital employed) improved by 0.9 percentage points in the reporting period to reach 5.7 percent. This positive trend was due to a substantial increase in net operating profit after taxes (NOPAT), which more than offset the rise in the average amount of net operating assets (NOA) over the year. The main positive factors influencing NOPAT in 2016 were income from the sale of our stake in the EE joint venture and income from transactions for the exchange of spectrum licenses between T-Mobile US and two competitors. These positive factors were partially offset by the impairments of goodwill and property, plant and equipment recognized in the financial year. The increase in average NOA is largely the result of the build-up of assets in our United States and Germany operating segments. In Germany, this development was largely due to the investments made as part of our integrated network strategy. In the United States, the increase in NOA was not only down to ongoing network build-out, but also to the acquisition of spectrum and spectrum exchange transactions.

We are also extremely well on track with our non-financial key performance indicators. In our United States operating segment, in particular, we again recorded continued strong mobile customer additions, both

in the postpaid and prepay segments. 2016 was the third year in succession in which we won over more than eight million new customers. In our Systems Solutions operating segment, the order volume rose more sharply than expected. This was attributable, on the one hand, to delays with order entries that we had expected in 2015 and, on the other, to two additional major contracts that we signed at the end of 2016.

RESULTS OF OPERATIONS OF THE GROUP

NET REVENUE

In the reporting year, we generated net revenue of EUR 73.1 billion, which was well above the prior-year level by EUR 3.9 billion. The business development of our United States operating segment contributed substantially to this positive trend: T-Mobile US' successful Un-carrier initiatives gave a strong boost to the number of new customers and thus also to service revenues. Terminal equipment revenue also continued to rise: Customers increasingly chose to lease high-value terminal equipment in connection with the JUMP! On Demand business model introduced by T-Mobile US in June 2015. In our home market of Germany, revenue decreased by 1.7 percent, primarily due to lower revenue from non-contract mobile devices. In the Europe operating segment, revenue also decreased by 2.1 percent year-on-year, mainly as a result of the spin-off of the energy resale business in Hungary as of January 1, 2016. In addition, revenue continued to come under pressure from decisions by regulatory authorities and persistently intense competition in the telecommunications markets in our national companies, especially in the Netherlands. Despite billing for the completion of the set-up phase of the toll collection system in Belgium in the first quarter of 2016, revenue in our Systems Solutions operating segment decreased 3.5 percent year-on-year. In general, the downward price trend in ICT business had a negative effect on net revenue. In our Group Headquarters & Group Services segment, revenue declined year-on-year, mainly on account of revenue lost in connection with the sale of our online platform t-online.de and our digital marketing company InteractiveMedia in November 2015 as well as the realignment of the Group Innovation⁺ unit.

Adjusted for slightly negative net exchange rate effects and negative effects of changes in the composition of the Group of EUR 0.2 billion, revenue increased by EUR 4.1 billion or 6.0 percent.



For details on the revenue trends in our Germany, United States, Europe, and Systems Solutions operating segments as well as at our Group Headquarters & Group Services, please refer to the section "Development of business in the operating segments," page 52 et seq.

Contribution of the segments to net revenue

millions of €

	2016	2015	Change	Change %	2014
NET REVENUE	73,095	69,228	3,867	5.6 %	62,658
Germany	22,041	22,421	(380)	(1.7) %	22,257
United States	33,738	28,925	4,813	16.6 %	22,408
Europe ^a	12,747	13,024	(277)	(2.1) %	13,221
Systems Solutions ^a	7,907	8,194	(287)	(3.5) %	8,252
Group Headquarters & Group Services	2,212	2,275	(63)	(2.8) %	2,516
Intersegment revenue	(5,550)	(5,611)	61	1.1 %	(5,996)

^a Business customer operations at Magyar Telekom in Hungary, which had previously been organizationally assigned to the Systems Solutions operating segment, have been managed and reported under the Europe operating segment since January 1, 2016. Comparative figures have been adjusted retrospectively.

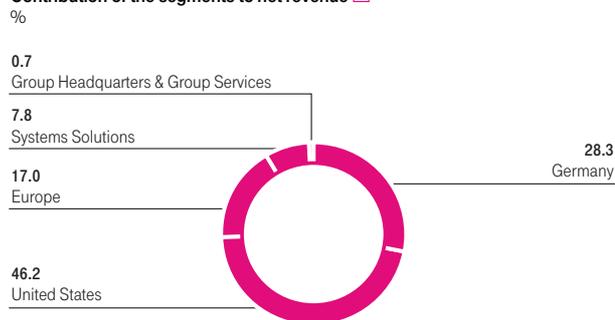
20	Deutsche Telekom at a glance	70	Corporate responsibility
26	Group organization	77	Innovation and product development
28	Group strategy	82	Employees
31	Management of the Group	87	Significant events after the reporting period
35	The economic environment	87	Forecast
40	Development of business in the Group	97	Risk and opportunity management
52	Development of business in the operating segments	112	Accounting-related internal control system
66	Development of business at Deutsche Telekom AG	113	Other disclosures

At 46.2 percent, our United States operating segment again provided the largest contribution to net revenue of the Group. This was an increase of 4.4 percentage points compared with the prior year, due in particular to ongoing strong customer additions. By contrast, the contributions by our other operating segments and the Group Headquarters & Group Services segment decreased. The proportion of net revenue generated internationally continued to increase, from 63.8 percent to 66.3 percent.

Breakdown of revenue by region



Contribution of the segments to net revenue



EBITDA, ADJUSTED EBITDA

Excluding special factors, **adjusted EBITDA** increased year-on-year by EUR 1.5 billion to EUR 21.4 billion in the reporting year. This development was primarily driven by our United States operating segment, which recorded an increase in its adjusted EBITDA contribution of EUR 1.9 billion, mainly as a result of the continued success of the Un-carrier initiatives. The revenue effects from the JUMP! On Demand terminal equipment lease model also contributed to the increase in adjusted EBITDA as the related costs were depreciated over the lease term and thus were excluded from adjusted EBITDA. In 2016, EBITDA adjusted for special factors was stable year-on-year in our Germany operating segment. Efficiency gains across all functions compensated for lower revenue. Adjusted EBITDA declined in our Europe operating segment – primarily as a result of competition and regulation – and in our Systems Solutions operating segment, mainly due to the accounting treatment of risks from individual corporate customer contracts. Our Group Headquarters & Group Services segment’s adjusted EBITDA had benefited in the prior year from a positive non-recurring effect. Exchange rate effects and effects from changes in the composition of the Group had only minimal impact on the development of adjusted EBITDA.

EBITDA increased substantially by EUR 4.2 billion year-on-year to EUR 22.5 billion; this included positive net special factors of EUR 1.1 billion, relating primarily to income of around EUR 2.5 billion from the sale of our stake in the EE joint venture on January 29, 2016. Income of EUR 0.5 billion in total was generated from transactions for the exchange of spectrum licenses between T-Mobile US and two competitors in March and September 2016. The sale of further parts of the share package in Scout24 AG in April and December 2016 generated income of around EUR 0.1 billion. The sale of shares in connection with the IPO of Scout24 AG had already resulted in income of EUR 0.3 billion in the prior year. Expenses incurred in connection with staff-related measures and non-staff-related restructuring expenses totaled EUR 1.7 billion, up slightly year-on-year. Furthermore, expenses of around EUR 0.1 billion from the decommissioning of the MetroPCS CDMA network had an impact. In the prior-year period, these expenses had amounted to EUR 0.4 billion. The special factors affecting the 2015 figures included income from the divestiture of our online platform t-online.de and our digital marketing company InteractiveMedia for a total amount of EUR 0.3 billion.



For more information on net revenue, please refer to Note 31 “Segment reporting” in the notes to the consolidated financial statements, **page 192 et seq.**



For detailed information on the development of EBITDA/adjusted EBITDA in our segments, please refer to the section “Development of business in the operating segments,” **page 52 et seq.** For an overview of the development of special factors, please refer to the table on **page 45.**

Contribution of the segments to adjusted Group EBITDA

	2016 millions of €	Proportion of adjusted Group EBITDA %	2015 millions of €	Proportion of adjusted Group EBITDA %	Change millions of €	Change %	2014 millions of €
EBITDA (ADJUSTED FOR SPECIAL FACTORS) IN THE GROUP	21,420	100.0	19,908	100.0	1,512	7.6 %	17,569
Germany	8,800	41.1	8,790	44.2	10	0.1 %	8,810
United States	8,561	40.0	6,654	33.4	1,907	28.7 %	4,296
Europe	4,094	19.1	4,329	21.7	(235)	(5.4) %	4,471
Systems Solutions	582	2.7	740	3.7	(158)	(21.4) %	797
Group Headquarters & Group Services	(576)	(2.7)	(552)	(2.8)	(24)	(4.3) %	(667)
Reconciliation	(41)	(0.2)	(53)	(0.2)	12	22.6 %	(138)

EBIT

Group EBIT stood at EUR 9.2 billion, up EUR 2.1 billion against the prior-year period. This increase is mainly due to the effects described under EBITDA. A year-on-year increase in depreciation, amortization and impairment losses of EUR 2.0 billion reduced EBIT. Amortization of intangible assets and depreciation of property, plant and equipment were EUR 1.5 billion higher than in the prior year. These were mainly recognized in connection with the build-out of the 4G/LTE network and the JUMP! On Demand program launched in our United States operating segment in June 2015.

The Europe operating segment recognized impairments of goodwill in the amount of EUR 0.5 billion in the reporting year. The majority of this amount related to the Netherlands cash-generating unit. In addition, impairment losses on property, plant, and equipment totaling EUR 0.2 billion were recognized, which also mainly related to the Europe operating segment.

PROFIT (LOSS) BEFORE INCOME TAXES

Despite a substantial increase in EBIT, profit before income taxes decreased by EUR 0.2 billion year-on-year to EUR 4.5 billion, due to the increase of EUR 2.4 billion in our loss from financial activities. The EUR 2.2 billion impairment of our financial stake in BT, which was recognized in profit and loss, was one of the main factors in this increase. This impairment comprises both the share price effect and the exchange rate effect. In the reporting year, we received a final dividend of around

EUR 0.2 billion in connection with the sale of our stake in the former EE joint venture, and further dividend payments also amounting to around EUR 0.2 billion from our financial stake in BT. In 2015 we received dividend payments of EUR 0.4 billion from the EE joint venture. In the financial year, an impairment loss of EUR 50 million was recognized on our associate Ströer SE & Co. KGaA, which is accounted for using the equity method. Contrary effects arose from the subsequent measurement of embedded derivatives at T-Mobile US, which resulted in minus EUR 0.1 billion; however, this was slightly better than the prior-year figure. Finance costs amounted to EUR 2.5 billion, putting the figure at just EUR 0.1 billion under the prior-year level.

NET PROFIT (LOSS)

Net profit decreased by EUR 0.6 billion to EUR 2.7 billion. The tax expense in 2016 amounted to EUR 1.4 billion, up EUR 0.2 billion year-on-year. Profit attributable to non-controlling interests increased compared with 2015 by EUR 0.2 billion. In our United States operating segment, the increase in profit attributable to non-controlling interests was driven in particular by the positive business performance.

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



For further details, please refer to Note 22 "Depreciation, amortization and impairment losses" in the notes to the consolidated financial statements, page 184.



For further information, please refer to Note 26 "Income taxes" in the notes to the consolidated financial statements, page 185 et seq.



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, page 183 et seq.

20	Deutsche Telekom at a glance	70	Corporate responsibility
26	Group organization	77	Innovation and product development
28	Group strategy	82	Employees
31	Management of the Group	87	Significant events after the reporting period
35	The economic environment	87	Forecast
40	Development of business in the Group	97	Risk and opportunity management
52	Development of business in the operating segments	112	Accounting-related internal control system
66	Development of business at Deutsche Telekom AG	113	Other disclosures

Consolidated income statement and effects of special factors

millions of €

	EBITDA 2016	EBIT 2016	EBITDA 2015	EBIT 2015	EBITDA 2014	EBIT 2014
EBITDA/EBIT	22,544	9,164	18,388	7,028	17,821	7,247
GERMANY	(910)	(910)	(545)	(545)	(254)	(254)
Staff-related measures	(854)	(854)	(402)	(402)	(223)	(223)
Non-staff-related restructuring	(38)	(38)	(112)	(112)	(9)	(9)
Effects on earnings from business combinations and other transactions	0	0	0	0	0	0
Other	(18)	(18)	(31)	(31)	(22)	(22)
UNITED STATES	406	406	(425)	(425)	(52)	(52)
Staff-related measures	(11)	(11)	(50)	(50)	(133)	(133)
Non-staff-related restructuring	0	0	0	0	0	0
Effects on earnings from business combinations and other transactions	417	417	(382)	(382)	78	78
Impairment losses	-	0	-	0	-	0
Other	0	0	7	7	3	3
EUROPE	(131)	(730)	(221)	(264)	(131)	(153)
Staff-related measures	(135)	(135)	(177)	(177)	(91)	(91)
Non-staff-related restructuring	(7)	(7)	(14)	(14)	(9)	(9)
Effects on earnings from business combinations and other transactions	24	24	31	31	(5)	(5)
Impairment losses	-	(599)	-	(43)	-	(22)
Other	(13)	(13)	(61)	(61)	(26)	(26)
SYSTEMS SOLUTIONS	(337)	(362)	(647)	(713)	(540)	(549)
Staff-related measures	(204)	(204)	(367)	(367)	(286)	(286)
Non-staff-related restructuring	(9)	(9)	(259)	(263)	(205)	(212)
Effects on earnings from business combinations and other transactions	0	0	(4)	(4)	(23)	(23)
Other	(124)	(149)	(17)	(79)	(26)	(28)
GROUP HEADQUARTERS & GROUP SERVICES	2,098	2,098	319	303	1,229	1,200
Staff-related measures	(434)	(434)	(213)	(213)	(174)	(174)
Non-staff-related restructuring	(27)	(27)	(48)	(48)	(54)	(54)
Effects on earnings from business combinations and other transactions	2,575	2,575	574	574	1,631	1,631
Impairment losses	-	0	-	0	-	(29)
Other	(16)	(16)	6	(10)	(174)	(174)
GROUP RECONCILIATION	(2)	(1)	(1)	(1)	0	0
Staff-related measures	0	0	(1)	(1)	0	0
Non-staff-related restructuring	0	0	0	1	0	0
Effects on earnings from business combinations and other transactions	(1)	0	1	1	0	0
Other	(1)	(1)	(1)	(2)	0	0
TOTAL SPECIAL FACTORS	1,124	501	(1,520)	(1,645)	252	192
EBITDA/EBIT (ADJUSTED FOR SPECIAL FACTORS)	21,420	8,663	19,908	8,673	17,569	7,055
Profit (loss) from financial activities (adjusted for special factors)		(2,323)		(2,233)		(2,784)
PROFIT (LOSS) BEFORE INCOME TAXES (ADJUSTED FOR SPECIAL FACTORS)		6,340		6,440		4,271
Income taxes (adjusted for special factors)		(1,858)		(1,927)		(1,474)
PROFIT (LOSS) (ADJUSTED FOR SPECIAL FACTORS)		4,482		4,513		2,797
PROFIT (LOSS) (ADJUSTED FOR SPECIAL FACTORS) ATTRIBUTABLE TO						
Owners of the parent (net profit (loss)) (adjusted for special factors)		4,114		4,113		2,422
Non-controlling interests (adjusted for special factors)		368		400		375

FINANCIAL POSITION OF THE GROUP

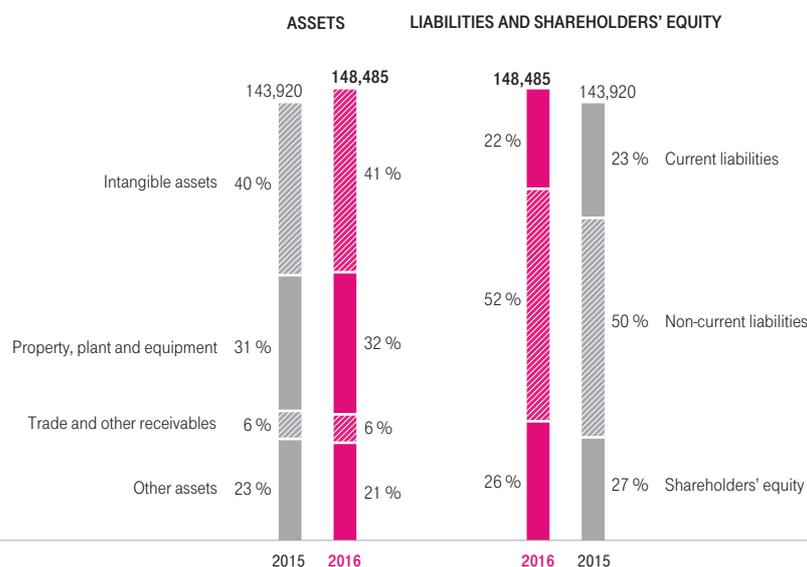
Condensed consolidated statement of financial position

millions of €

	Dec. 31, 2016	Change	Dec. 31, 2015	Dec. 31, 2014	Dec. 31, 2013	Dec. 31, 2012
ASSETS						
CURRENT ASSETS	26,638	(5,546)	32,184	29,798	21,963	15,019
Cash and cash equivalents	7,747	850	6,897	7,523	7,970	4,026
Trade and other receivables	9,362	124	9,238	10,454	7,712	6,417
Non-current assets and disposal groups held for sale	372	(6,550)	6,922	5,878	1,033	90
Other current assets	9,157	30	9,127	5,943	5,248	4,486
NON-CURRENT ASSETS	121,847	10,111	111,736	99,562	96,185	92,923
Intangible assets	60,599	3,574	57,025	51,565	45,967	41,847
Property, plant and equipment	46,758	2,121	44,637	39,616	37,427	37,407
Investments accounted for using the equity method	725	(97)	822	617	6,167	6,726
Other non-current assets	13,765	4,513	9,252	7,764	6,624	6,943
TOTAL ASSETS	148,485	4,565	143,920	129,360	118,148	107,942
LIABILITIES AND SHAREHOLDERS' EQUITY						
CURRENT LIABILITIES	33,126	(422)	33,548	28,198	22,496	22,995
Financial liabilities	14,422	(17)	14,439	10,558	7,891	9,260
Trade and other payables	10,441	(649)	11,090	9,681	7,259	6,445
Current provisions	3,068	(299)	3,367	3,517	3,120	2,885
Liabilities directly associated with non-current assets and disposal groups held for sale	194	190	4	6	113	9
Other current liabilities	5,001	353	4,648	4,436	4,113	4,396
NON-CURRENT LIABILITIES	76,514	4,292	72,222	67,096	63,589	54,416
Financial liabilities	50,228	2,287	47,941	44,669	43,708	35,354
Non-current provisions	11,771	765	11,006	10,838	9,077	9,169
Other non-current liabilities	14,515	1,240	13,275	11,589	10,804	9,893
SHAREHOLDERS' EQUITY	38,845	695	38,150	34,066	32,063	30,531
TOTAL LIABILITIES AND SHAREHOLDERS' EQUITY	148,485	4,565	143,920	129,360	118,148	107,942

Structure of the consolidated statement of financial position

millions of €

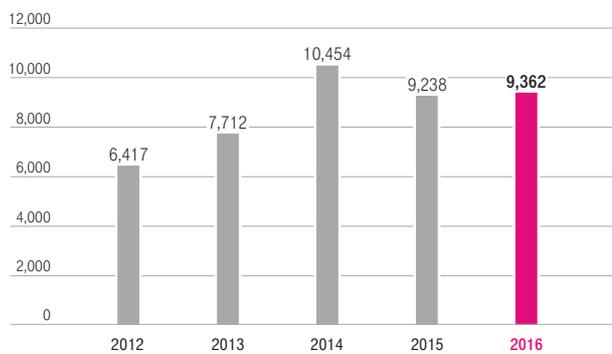


20	Deutsche Telekom at a glance	70	Corporate responsibility
26	Group organization	77	Innovation and product development
28	Group strategy	82	Employees
31	Management of the Group	87	Significant events after the reporting period
35	The economic environment	87	Forecast
40	Development of business in the Group	97	Risk and opportunity management
52	Development of business in the operating segments	112	Accounting-related internal control system
66	Development of business at Deutsche Telekom AG	113	Other disclosures

Total assets increased by EUR 4.6 billion compared with December 31, 2015, largely due to higher levels of intangible assets and property, plant and equipment. Additions from spectrum licenses alone contributed EUR 4.1 billion. The asset side was reduced as a result of the EUR 2.2 billion impairment of our financial stake in BT, which was recognized in profit and loss. Total liabilities and shareholders' equity increased in particular on account of non-current financial liabilities.

Cash and cash equivalents increased by EUR 0.9 billion year-on-year. ☒

Trade and other receivables
millions of €



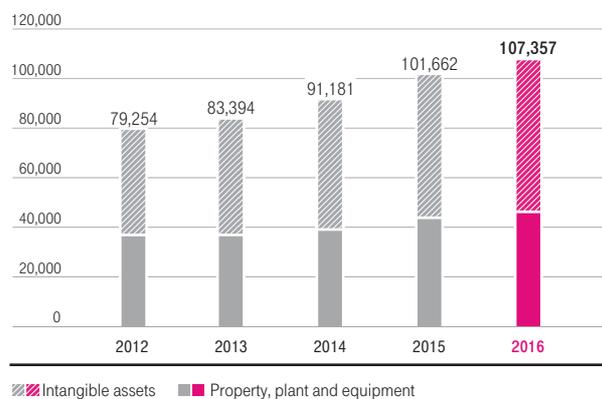
Trade and other receivables increased by EUR 0.1 billion to EUR 9.4 billion. The growth in the customer base resulting from T-Mobile US' successful Un-carrier initiatives resulted in an increase in receivables. Exchange rate effects, mainly from the translation of U.S. dollars into euros, also had a positive effect. By contrast, factoring agreements concluded in the reporting period concerning monthly revolving sales of trade receivables due resulted in a reduction in receivables.

The decrease of EUR 6.6 billion in the carrying amount of assets and disposal groups held for sale to EUR 0.4 billion mainly resulted from the sale of our stake in the EE joint venture, which was completed on January 29, 2016 and reduced the carrying amount by EUR 5.8 billion. In this context, exchange rate effects totaling EUR 0.2 billion from the translation of pounds sterling to euros also lowered the net carrying amount compared with December 31, 2015. Secondly, the transaction agreed in the third quarter of 2015 for the exchange of spectrum licenses between T-Mobile US and a competitor with the aim of improving the mobile network coverage of T-Mobile US was completed in March 2016. This transaction reduced the net carrying amount by a further EUR 0.6 billion. A transaction agreed between T-Mobile US and a competitor in the third quarter of 2016 for the exchange of spectrum licenses, also aimed at improving the mobile network coverage of T-Mobile US, had an increasing effect of EUR 0.1 billion on the carrying amount. In December 2016, we agreed to sell our hosting service provider Strato to United Internet AG. This transaction increased the carrying amount by EUR 0.1 billion. We expect the transaction to close in the first half of 2017.

As of December 31, 2016, other current assets included the following significant effects: The carrying amount of other current financial assets decreased slightly by EUR 0.1 billion to EUR 5.7 billion. U.S. government bonds with a volume of EUR 2.8 billion that fell due and were

repaid in the first half of 2016 reduced the carrying amount. By contrast, a refundable cash deposit of around EUR 2.1 billion recorded in the second quarter of 2016 in connection with a potential asset purchase in the United States increased this item. Inventories decreased by EUR 0.2 billion to EUR 1.6 billion, primarily due to lower stock levels of terminal equipment (in particular higher-priced smartphones) as of the reporting date.

Intangible assets and property, plant and equipment
millions of €



Intangible assets and property, plant and equipment increased by EUR 5.7 billion compared with the end of 2015 to EUR 107.4 billion in total.

Intangible assets increased by EUR 3.6 billion to EUR 60.6 billion, mainly due to additions totaling EUR 7.5 billion. This includes additions at T-Mobile US, largely in connection with transactions completed with competitors for the exchange of spectrum licenses totaling EUR 1.4 billion. Furthermore, there were additions from the acquisition of spectrum licenses by T-Mobile US in 2016 for around EUR 1.7 billion in total and by T-Mobile Polska for around EUR 1.0 billion. Positive exchange rate effects, primarily from the translation of U.S. dollars into euros, increased the carrying amount by EUR 1.1 billion. Amortization of EUR 4.1 billion, impairments of goodwill in the amount of EUR 0.5 billion, primarily in the Netherlands, as well as the reclassification of assets worth EUR 0.5 billion to non-current assets and disposal groups held for sale also lowered the carrying amount.

Property, plant and equipment increased by EUR 2.1 billion compared to December 31, 2015 to EUR 46.8 billion. Additions of EUR 11.4 billion primarily in the United States and Germany operating segments increased the carrying amount. This also included EUR 1.5 billion for capitalized higher-priced mobile devices. These relate to the business model JUMP! On Demand introduced at T-Mobile US in June 2015 under which customers no longer purchase the device but lease it. Exchange rate effects, primarily from the translation of U.S. dollars into euros, also increased the carrying amount by EUR 0.5 billion. Depreciation and amortization of EUR 8.6 billion and impairment losses of EUR 0.2 billion reduced the carrying amount, as did disposals of EUR 0.9 billion.

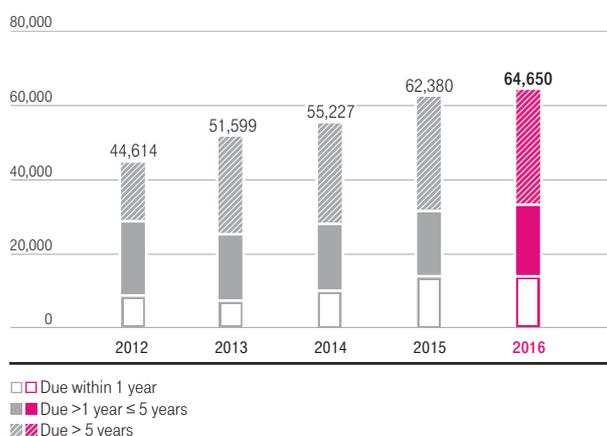
Other non-current financial assets increased by EUR 4.4 billion to EUR 7.9 billion. In return for our stake in the EE joint venture, we received

For detailed information on this change, please refer to the consolidated statement of cash flows, page 132, and Note 30 "Notes to the consolidated statement of cash flows" in the notes to the consolidated financial statements, pages 190 and 191.

a cash payment as well as a financial stake of 12.0 percent in BT. This addition increased the carrying amount by EUR 7.4 billion. As of December 31, 2016, an impairment of EUR 2.2 billion on this exchange-traded financial stake was recognized in profit and loss. The premature cancellation of interest rate derivatives with a fair value of EUR 0.6 billion also reduced the carrying amount. The settlement payment was recognized in net cash from operating activities in the amount of EUR 0.3 billion and in net cash used in financing activities in the amount of EUR 0.3 billion.

Financial liabilities

millions of €



Our current and non-current **financial liabilities** increased by EUR 2.3 billion compared with the end of 2015 to EUR 64.7 billion in total.

In March 2016, we placed euro bonds with institutional investors for a total volume of EUR 4.5 billion. These comprised: a 4-year variable-interest bond with a volume of EUR 1.25 billion and a mark-up of 35 basis points above the 3-month EURIBOR; a 7-year fixed-interest bond with a volume of EUR 1.75 billion and a coupon of 0.625 percent; and a 12-year bond with a volume of EUR 1.5 billion and a fixed coupon of 1.5 percent. In April 2016, we placed a 5-year fixed-interest euro bond with a volume of EUR 0.5 billion and a coupon of 0.25 percent. In October 2016, we then issued a 7-year fixed-interest GBP bond with a volume of GBP 300 million and a coupon of 1.25 percent. All bonds were issued under our debt issuance program.

In September 2016, we placed U.S. dollar bonds with a total volume of USD 2.75 billion (around EUR 2.5 billion) with institutional investors. These comprised: a 3-year variable-interest bond with a volume of USD 250 million and a mark-up of 45 basis points above the 3-month USD Libor; a 3-year fixed-interest bond with a volume of USD 750 million and a coupon of 1.5 percent; a 5-year bond with a volume of USD 1.0 billion and a coupon of 1.95 percent; and a 7-year bond with a volume of USD 750 million and a coupon of 2.485 percent.

All bonds were issued by Deutsche Telekom International Finance B.V. with the guarantee of Deutsche Telekom AG. The issuances form part of our general corporate financing.

On April 1, 2016, T-Mobile US issued senior notes with a total volume of USD 1.0 billion (around EUR 0.9 billion). T-Mobile US expects to use the net proceeds from this offering for the purchase of 700 MHz A-block spectrum and other spectrum purchases.

In 2016, two U.S. dollar bonds were repaid in a total amount of USD 2.25 billion (around EUR 2.0 billion), as were euro bonds totaling EUR 0.9 billion, a bond in Swiss francs for CHF 0.4 billion (around EUR 0.4 billion), commercial paper in the amount of EUR 3.7 billion (net), and promissory notes in the amount of EUR 0.4 billion (net). The net decrease in liabilities to banks of EUR 0.1 billion also reduced the carrying amount of the financial liabilities.

In order to optimize the financing terms and conditions for our subsidiary T-Mobile US and thus also those for the Group, we provided T-Mobile US with a 3-year partially secured credit line of USD 2.5 billion and a secured loan of USD 660 million in December 2016. Together with the temporary loan commitments for up to USD 4.0 billion, which were made in March and April 2016 and run until the end of May 2017, Deutsche Telekom AG provided its subsidiary T-Mobile US with a total funding framework of more than USD 7 billion as of the reporting date. This does not increase the Group's net debt. □

Trade and other payables decreased by EUR 0.6 billion compared with the end of 2015 to EUR 10.4 billion, primarily attributable to the decrease in liabilities in our United States operating segment. Exchange rate effects from the translation from U.S. dollars into euros had an offsetting effect.

Provisions (current and non-current) stood at EUR 14.8 billion, EUR 0.5 billion higher than the prior-year level, of which EUR 8.5 billion (December 31, 2015: EUR 8.0 billion) related to provisions for pensions and other employee benefits. The increase in provisions for pensions and other employee benefits was attributable in part to actuarial losses of EUR 0.7 billion (before taxes) recognized directly in equity and current service costs of EUR 0.2 billion. By contrast, benefits of EUR 0.3 billion paid in the reporting year and the increase of our plan assets by EUR 0.3 billion (allocation under contractual trust agreement) reduced provisions. At EUR 6.4 billion, other provisions were slightly higher than in the prior year.



For further information, please refer to the explanations in Note 10 "Financial liabilities" in the notes to the consolidated financial statements, page 167 et seq.

20	Deutsche Telekom at a glance	70	Corporate responsibility
26	Group organization	77	Innovation and product development
28	Group strategy	82	Employees
31	Management of the Group	87	Significant events after the reporting period
35	The economic environment	87	Forecast
40	Development of business in the Group	97	Risk and opportunity management
52	Development of business in the operating segments	112	Accounting-related internal control system
66	Development of business at Deutsche Telekom AG	113	Other disclosures

Other non-current liabilities increased by EUR 1.2 billion compared with the prior year to EUR 14.5 billion and included deferred tax assets, which increased by EUR 0.8 billion compared with the end of 2015 to EUR 10.0 billion, due in part to exchange rate effects from the translation of U.S. dollars into euros.

Shareholders' equity increased by EUR 0.7 billion compared with December 31, 2015 to EUR 38.8 billion, due to profit after taxes of EUR 3.1 billion, currency translation effects recognized directly in equity of EUR 0.4 billion, and capital increases totaling EUR 0.3 billion carried out in connection with share-based payments. In addition, in connection with the option granted to our shareholders to have their dividend entitlements

converted into shares, a capital increase of EUR 1.0 billion was carried out involving the contribution of the dividend entitlements. Dividend payments for the 2015 financial year to Deutsche Telekom AG shareholders of EUR 2.5 billion and to non-controlling interests of EUR 0.1 billion had an offsetting effect. In addition, as a result of the consummation of the sale of our stake in the former EE joint venture on January 29, 2016, the gains of EUR 0.9 billion from the translation of pounds sterling into euros that had until this date been disclosed in shareholders' equity were reclassified through profit or loss to the consolidated income statement. Actuarial losses (after taxes) of EUR 0.5 billion also had a negative effect.

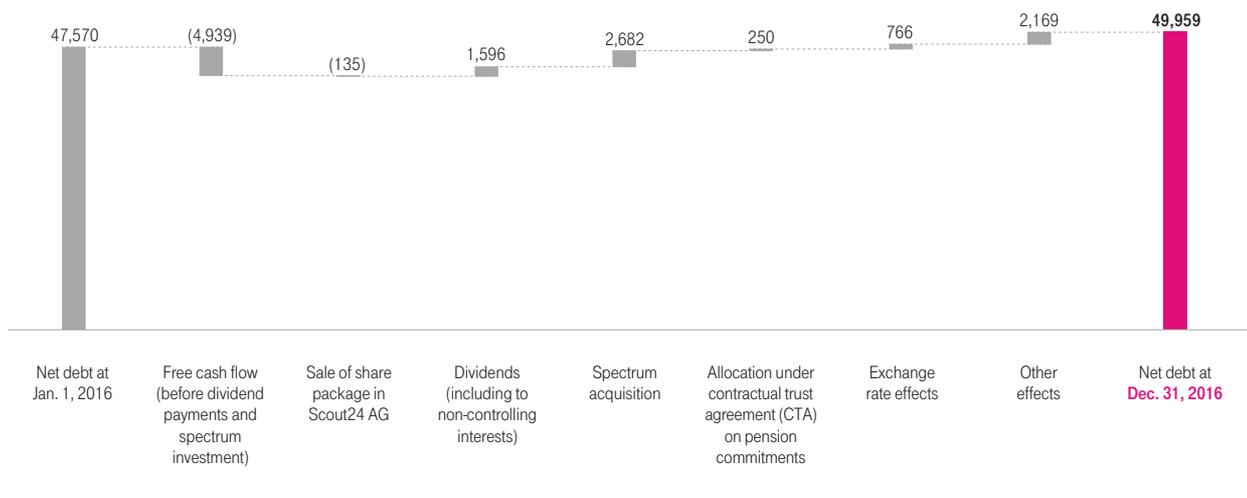
Net debt

millions of €

	Dec. 31, 2016	Change	Dec. 31, 2015	Dec. 31, 2014	Dec. 31, 2013	Dec. 31, 2012
Financial liabilities (current)	14,422	(17)	14,439	10,558	7,891	9,260
Financial liabilities (non-current)	50,228	2,287	47,941	44,669	43,708	35,354
FINANCIAL LIABILITIES	64,650	2,270	62,380	55,227	51,599	44,614
Accrued interest	(955)	59	(1,014)	(1,097)	(1,091)	(903)
Other	(1,029)	(172)	(857)	(1,038)	(881)	(754)
GROSS DEBT	62,666	2,157	60,509	53,092	49,627	42,957
Cash and cash equivalents	7,747	850	6,897	7,523	7,970	4,026
Available-for-sale financial assets/ financial assets held for trading	10	(2,867)	2,877	289	310	27
Derivative financial assets	2,379	(307)	2,686	1,343	771	1,287
Other financial assets	2,571	2,092	479	1,437	1,483	757
NET DEBT	49,959	2,389	47,570	42,500	39,093	36,860

Changes in net debt

millions of €



Our **net debt** increased by EUR 2.4 billion year-on-year to EUR 50.0 billion. The reasons for this are presented in the graphic on the previous page. Other effects of EUR 2.2 billion include, among other items, liabilities for the lease of network equipment classified as a finance lease primarily in our United States operating segment and liabilities for the acquisition of broadcasting rights. In addition, other effects include financing options under which the payments for trade payables become due at a later point in time by involving banks in the process.

Off-balance sheet assets and other financing formats. In addition to the assets recognized in the statement of financial position, we use off-balance-sheet assets. This primarily relates to leased property. 

Off-balance-sheet financial instruments mainly relate to the sale of receivables by means of factoring. Total receivables sold as of December 31, 2016 amounted to EUR 4.9 billion (December 31, 2015: EUR 3.5 billion). This mainly relates to top-ups to existing factoring agreements as well as the conclusion of new 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 0.2 billion (2015: EUR 0.7 billion) which extended the period of payment for trade payables from operating and investing activities by involving banks in the process and which upon payment are shown under cash flows used in financing activities. As a result, we show these payables under financial liabilities in the statement of financial position.

In 2016, we leased network equipment for a total of EUR 0.9 billion, primarily in the United States operating segment, which is recognized as a finance lease. In the statement of financial position, we therefore also recognize this item under financial liabilities and the future repayments of the liabilities in net cash used in financing activities.

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, 2012	BBB+	Baa1	BBB+
Dec. 31, 2013	BBB+	Baa1	BBB+
Dec. 31, 2014	BBB+	Baa1	BBB+
Dec. 31, 2015	BBB+	Baa1	BBB+
Dec. 31, 2016	BBB+	Baa1	BBB+
SHORT-TERM RATING			
	A-2	P-2	F2
OUTLOOK			
	Stable	Stable	Stable

Financial flexibility

	2016	2015	2014	2013	2012
RELATIVE DEBT					
$\frac{\text{Net debt}}{\text{EBITDA (adjusted for special factors)}}$	2.3 x	2.4 x	2.4 x	2.2 x	2.1 x
EQUITY RATIO %					
	26.2	26.5	26.3	27.1	28.3

To ensure financial flexibility, we primarily use the KPI **relative debt**. One component of this KPI is net debt, which our Group uses as an important indicator for investors, analysts, and rating agencies.

Condensed consolidated statement of cash flows

millions of €

	2016	2015	2014
NET CASH FROM OPERATING ACTIVITIES	15,533	14,997	13,393
Cash outflows for investments in intangible assets (excluding goodwill and before spectrum investment) and property, plant and equipment (CASH CAPEX)	(10,958)	(10,818)	(9,534)
Proceeds from disposal of intangible assets (excluding goodwill) and property, plant and equipment	364	367	281
FREE CASH FLOW (BEFORE DIVIDEND PAYMENTS AND SPECTRUM INVESTMENT)	4,939	4,546	4,140
NET CASH USED IN INVESTING ACTIVITIES	(13,608)	(15,015)	(10,761)
NET CASH USED IN FINANCING ACTIVITIES	(1,322)	(876)	(3,434)
Effect of exchange rate changes on cash and cash equivalents	250	267	323
Changes in cash and cash equivalents associated with non-current assets and disposal groups held for sale	(3)	1	32
Net increase (decrease) in cash and cash equivalents	850	(626)	(447)
CASH AND CASH EQUIVALENTS	7,747	6,897	7,523

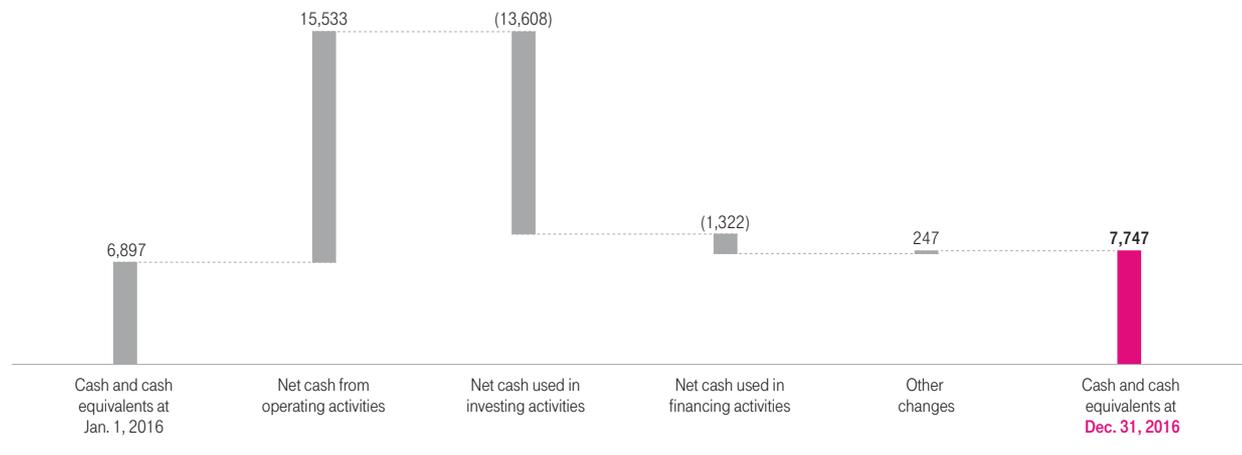


For more information, please refer to the explanations in Note 33 "Leases," page 196 et seq., and Note 34 "Other financial obligations," page 198, in the notes to the consolidated financial statements.

20	Deutsche Telekom at a glance	70	Corporate responsibility
26	Group organization	77	Innovation and product development
28	Group strategy	82	Employees
31	Management of the Group	87	Significant events after the reporting period
35	The economic environment	87	Forecast
40	Development of business in the Group	97	Risk and opportunity management
52	Development of business in the operating segments	112	Accounting-related internal control system
66	Development of business at Deutsche Telekom AG	113	Other disclosures

Changes in cash and cash equivalents

millions of €



Free cash flow. Free cash flow of the Group before dividend payments and spectrum investment grew from EUR 4.5 billion in the prior year to EUR 4.9 billion. Net cash from operating activities increased by EUR 0.5 billion. Cash outflows for investments in intangible assets (excluding goodwill and before spectrum investment) and property, plant and equipment also increased by EUR 0.1 billion.

The increase in **net cash from operating activities** was mainly attributable to the positive business development of our United States operating segment. In the reporting period, factoring agreements were concluded for monthly revolving sales of trade receivables, mainly in the United States and Germany operating segments. Their effect on net cash from operating activities amounted to EUR 0.8 billion and was thus comparable with the prior year. Cash inflows from the cancellation of or changes in the terms of interest rate derivatives had a positive effect

of EUR 0.2 billion compared with the prior-year period. A year-on-year decrease of EUR 0.2 billion in cash outflows for income taxes also had a positive impact. Net cash from operating activities was negatively affected by a EUR 0.2 billion decrease in the dividend payment from the former EE joint venture. The dividend payment received from BT of EUR 0.1 billion was matched in the prior-year period by dividend payments of a corresponding amount received from the Scout24 group. In addition, net interest payments that were EUR 0.1 billion higher year-on-year had a negative impact on net cash from operating activities.

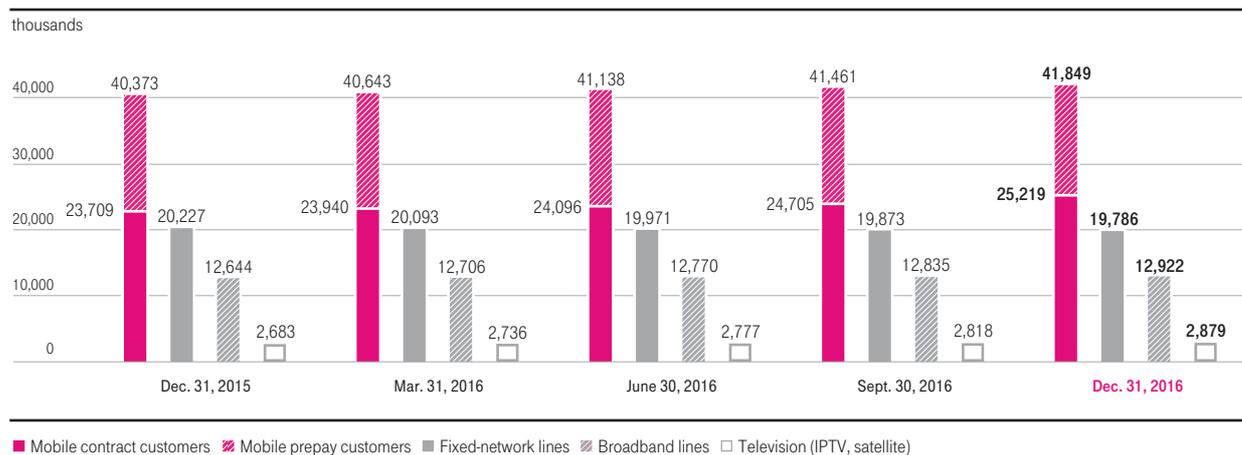
The slight increase in **cash capex** compared with 2015 primarily related to the Germany, Europe, and United States operating segments. In each case, the cash outflows were for investments in network build-out and network modernization. 



For further details, please refer to Note 30 "Notes to the consolidated statement of cash flows" in the notes to the consolidated financial statements, pages 190 and 191.

DEVELOPMENT OF BUSINESS IN THE OPERATING SEGMENTS

GERMANY CUSTOMER DEVELOPMENT



thousands

	Dec. 31, 2016	Dec. 31, 2015	Change	Change %	Dec. 31, 2014
TOTAL					
Mobile customers	41,849	40,373	1,476	3.7 %	38,989
Contract customers	25,219	23,709	1,510	6.4 %	22,287
Prepay customers	16,630	16,665	(35)	(0.2)%	16,701
Fixed-network lines	19,786	20,227	(441)	(2.2)%	20,686
Of which: retail IP-based	9,042	6,887	2,155	31.3 %	4,383
Broadband lines	12,922	12,644	278	2.2 %	12,361
Of which: optical fiber	4,250	2,923	1,327	45.4 %	1,799
Television (IPTV, satellite)	2,879	2,683	196	7.3 %	2,442
Unbundled local loop lines (ULLs)	7,195	8,050	(855)	(10.6)%	8,801
Wholesale unbundled lines	4,212	3,015	1,197	39.7 %	2,153
Of which: optical fiber	2,555	1,444	1,111	76.9 %	718
Wholesale bundled lines	165	227	(62)	(27.3)%	305
OF WHICH: CONSUMERS					
Mobile customers	29,225	29,016	209	0.7 %	29,068
Contract customers	18,476	17,297	1,179	6.8 %	16,040
Prepay customers	10,749	11,719	(970)	(8.3)%	13,027
Fixed-network lines	15,550	15,900	(350)	(2.2)%	16,260
Of which: retail IP-based	7,722	6,076	1,646	27.1 %	3,974
Broadband lines	10,438	10,209	229	2.2 %	9,938
Of which: optical fiber	3,657	2,530	1,127	44.5 %	1,547
Television (IPTV, satellite)	2,686	2,492	194	7.8 %	2,254
OF WHICH: BUSINESS CUSTOMERS					
Mobile customers	12,624	11,358	1,266	11.1 %	9,921
Contract customers	6,744	6,412	332	5.2 %	6,247
Prepay customers (M2M)	5,880	4,946	934	18.9 %	3,674
Fixed-network lines	3,255	3,339	(84)	(2.5)%	3,402
Of which: retail IP-based	1,234	773	461	59.6 %	387
Broadband lines	2,101	2,093	8	0.4 %	2,096
Of which: optical fiber	575	385	190	49.4 %	248
Television (IPTV, satellite)	192	190	2	1.1 %	186

20	Deutsche Telekom at a glance	70	Corporate responsibility
26	Group organization	77	Innovation and product development
28	Group strategy	82	Employees
31	Management of the Group	87	Significant events after the reporting period
35	The economic environment	87	Forecast
40	Development of business in the Group	97	Risk and opportunity management
52	Development of business in the operating segments	112	Accounting-related internal control system
66	Development of business at Deutsche Telekom AG	113	Other disclosures

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 our broad product portfolio and our multi-award winning network quality: Awards were received for our fixed network in connect magazine's network test, issue 8/2016, and our mobile network in the connect network test, issue 1/2017.

So far, we have won 3 million customers for our integrated product, MagentaEins, comprising fixed-network and mobile components.

In mobile communications, we won another 1.5 million customers in 2016. This growth was driven primarily by contract customers as a result of high demand for mobile rate plans with integrated data volumes.

Our "network of the future" offers state-of-the-art access technology. By the end of 2018, we want to have converted our entire network to IP technology. By the end of the reporting year, we had already migrated 12.9 million retail and wholesale lines to IP, which corresponds to a migration rate of 53 percent. [SDG](#)

We continue to see strong demand for our fiber-optic products. As of the end of 2016, the number of lines had increased to 6.8 million overall, which means we connected 2.4 million households to our fiber-optic network in Germany over the last 12 months. With the progress in fiber-optic roll-out and innovative vectoring technology, we successfully drove forward the marketing of substantially higher bandwidths – and will continue to do so more and more in the future. With our [contingent model](#), we create incentives for the migration from traditional wholesale products – such as bundled wholesale lines or unbundled local loop lines (ULLs) – to higher-quality fiber-optic wholesale lines.

Mobile communications

We are generating momentum with our excellent network quality and our broad product portfolio for high-value contract customers. We offer our customers the best possible mobility, with an improved service package and transparent, fair offers. Our new MagentaMobil portfolio offers our customers wide-ranging benefits: more high-speed data volumes, a HotSpot flat rate, and free roaming in other EU countries.

In the reporting year, we won another 1.5 million contract customers. Of these, 563 thousand were branded contract customers under the Telekom and congstar brands, while the customer base at Telekom Deutschland Multibrand GmbH grew by 52 thousand. The contract customer business of resellers (service providers) recorded 896 thousand net contract customer additions. The number of prepay customers decreased slightly by 35 thousand.

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 focusing on integrated offers and

on TV and fiber-optic lines. As a result, the number of our broadband lines increased by 278 thousand year-on-year. 22.3 percent of our broadband customers are TV customers, with 196 thousand TV customer additions recorded in the reporting year alone. In the traditional fixed network, the number of lines decreased by 441 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, 294 thousand customers have selected this rate plan, primarily those based in rural areas.

We have also connected a total of around 164 thousand apartments to our network through our partnerships in the housing sector.

Consumers

With 29.2 million customers at the end of 2016, our mobile customer base remained at the prior-year level overall. The number of prepay customers decreased by 970 thousand, primarily as a result of some customers switching to our mobile contracts, for example to our cost-effective congstar rate plans. By contrast, we added 1.2 million mobile contract customers over the course of the year, thanks mainly to our More For More initiative and the Allnet Flat rate plans at congstar. Contract customer business with resellers (service providers) also developed positively.

In the fixed-network market, competition remains intense. In 2016, we migrated 1.6 million customers to IP-based lines in the fixed network. We won 194 thousand new TV customers compared with the end of 2015. In the reporting year, of the 10.4 million broadband lines in total, 3.7 million were fiber-optic lines, representing a year-on-year increase of 1.1 million.

Business Customers

The positive trend in the Business Customers segment from the prior year continued: Since the beginning of 2016, we have recorded 1.3 million mobile customer additions, 332 thousand of whom were high-value contract customers. In mobile Internet, customers are increasingly opting for plans with more bandwidth, in conjunction with higher-quality terminal equipment. We added 934 thousand new M2M SIM cards in a very aggressively priced market. This growth was due to the increased use of SIM cards, especially in the automotive and logistics industries. The number of customers with fixed-network lines declined by 2.5 percent compared with the end of 2015. The number of broadband lines remained at the prior-year level at 2.1 million, with the number of fiber-optic lines increasing substantially by 49.4 percent.

There was also a positive trend in demand for cloud products, where we recorded revenue growth of 9.3 percent. We also recorded growth in new IP-based products from our DeutschlandLAN product range, such as IP Start and IP Voice/Data.



Wholesale

At the end of 2016, fiber-optic lines accounted for 22.1 percent of all lines – 9.3 percentage points higher than the prior-year figure. The strong growth in our wholesale unbundled lines by 1.2 million or 39.7 percent compared with 2015 was primarily attributable to the strong demand for our contingent model. By contrast, the number of bundled wholesale lines decreased by 62 thousand. This trend is likely to continue for the next few years due to the fact that our competitors are switching from

bundled to unbundled wholesale products with more bandwidth, or to their own infrastructure. The number of unbundled local loop lines decreased by 855 thousand or 10.6 percent compared with the end of the prior year. This is due first to the move to higher-quality fiber-optic wholesale lines, and second to retail customers switching to cable operators. In addition, wholesale customers have been migrating their retail customers to fiber-optic lines. The total number of lines in the wholesale sector increased slightly compared with 2015 to 11.6 million.

DEVELOPMENT OF OPERATIONS

millions of €

	2016	2015	Change	Change %	2014
TOTAL REVENUE	22,041	22,421	(380)	(1.7)%	22,257
Consumers	11,739	12,146	(407)	(3.4)%	12,025
Business Customers	5,923	5,942	(19)	(0.3)%	5,898
Wholesale	3,753	3,685	68	1.8 %	3,704
Other	626	648	(22)	(3.4)%	630
Profit from operations (EBIT)	4,081	4,490	(409)	(9.1)%	4,663
EBIT margin	% 18.5	20.0			21.0
Depreciation, amortization and impairment losses	(3,809)	(3,755)	(54)	(1.4)%	(3,893)
EBITDA	7,890	8,245	(355)	(4.3)%	8,556
Special factors affecting EBITDA	(910)	(545)	(365)	(67.0)%	(254)
EBITDA (ADJUSTED FOR SPECIAL FACTORS)	8,800	8,790	10	0.1 %	8,810
EBITDA margin (adjusted for special factors)	% 39.9	39.2			39.6
CASH CAPEX	(4,161)	(5,609)	1,448	25.8 %	(3,807)

The Value-Added Services segment was dissolved as of January 1, 2016, and the revenue allocated to Consumers, Business Customers, and Other. Prior-year figures have been adjusted accordingly.

Total revenue

Total revenue decreased by 1.7 percent compared with 2015. This development was driven mainly by non-contract terminal equipment revenue in mobile business, which decreased by 3.4 percent. Increased IT and broadband revenues had a positive impact on fixed-network revenue. However, this was not sufficient to completely offset declines in other areas, such that revenue in the fixed-network business decreased by 1.5 percent overall. Wholesale products developed positively, increasing by 2.3 percent year-on-year.

Revenue from **Consumers** declined by 3.4 percent compared with the prior year. Volume-related revenue decreases continued to dominate traditional fixed-network business, which declined by 2.0 percent, mainly due to lower variable charges and voice revenue. By contrast, revenue from broadband business increased by 1.7 percent. Mobile revenues declined by 5.1 percent, driven largely by terminal equipment business. Our mobile service revenues decreased by 0.7 percent compared with the prior-year level; however, the increase in service revenues under the congstar brand almost completely offset the decline in revenues from prepay business and from branded contract customers.

Revenue from **Business Customers** declined slightly by 0.3 percent. Mobile revenues grew slightly. Service revenues were at around the same level as in the prior year. In the fixed network, a decline was

recorded in traditional voice telephony, due largely to the increasing number of customers moving to flat rate plans. By contrast, IT revenues developed particularly positively, though this was not enough to fully compensate for the loss of revenues from traditional telephony business.

Wholesale revenue was up 1.8 percent on the prior-year level, thanks primarily to higher revenues with unbundled lines, in particular as part of our contingent model.

EBITDA, adjusted EBITDA

EBITDA adjusted for special factors remained stable compared with the prior-year level at EUR 8.8 billion. We were able to compensate for the loss of revenue with efficiency enhancement measures across all functions. Our adjusted EBITDA margin increased significantly to 39.9 percent (prior year: 39.2 percent).

EBITDA amounted to EUR 7.9 billion in the reporting year, a decline of 4.3 percent against the prior year, due mainly to higher special factors for expenses in connection with our staff restructuring. The take-up of the instrument of early retirement for civil servants in particular was substantially higher in the reporting year.

20	Deutsche Telekom at a glance	70	Corporate responsibility
26	Group organization	77	Innovation and product development
28	Group strategy	82	Employees
31	Management of the Group	87	Significant events after the reporting period
35	The economic environment	87	Forecast
40	Development of business in the Group	97	Risk and opportunity management
52	Development of business in the operating segments	112	Accounting-related internal control system
66	Development of business at Deutsche Telekom AG	113	Other disclosures

EBIT

Profit from operations decreased by 9.1 percent to EUR 4.1 billion year-on-year. This was primarily attributable to higher expenses incurred in connection with staff-related measures and slightly higher depreciation and amortization.

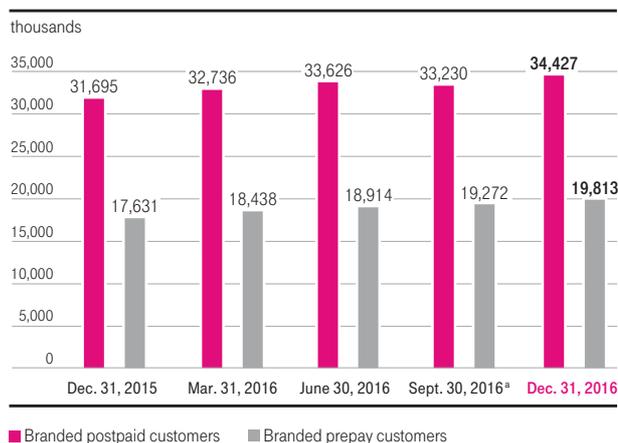
Cash capex

Cash capex was EUR 1.4 billion lower than in the prior year, due mainly to the spectrum auction in June 2015. Excluding spectrum investment, cash capex was up EUR 0.1 billion year-on-year.

We again made significant investments in the broadband and fiber-optic roll-out, our IP transformation, and our mobile infrastructure as part of our integrated network strategy.

UNITED STATES

CUSTOMER DEVELOPMENT



^a On September 1, 2016 T-Mobile US sold its marketing and distribution rights to certain of T-Mobile US' existing co-branded customers to a current wholesale partner for nominal consideration (the MVNO Transaction). Upon the sale, the MVNO Transaction resulted in a transfer of 1,365 thousand branded postpaid customers and 326 thousand branded prepay customers to wholesale customers. Prospectively from September 1, 2016, net customer additions for these customers are included within wholesale customers. Ending customers as of September 30, 2016 reflect the transfers in connection with the transaction.

thousands

	Dec. 31, 2016	Dec. 31, 2015	Change	Change %	Dec. 31, 2014
UNITED STATES					
Mobile customers	71,455	63,282	8,173	12.9 %	55,018
Branded customers ^a	54,240	49,326	4,914	10.0 %	43,501
Branded postpaid ^a	34,427	31,695	2,732	8.6 %	27,185
Branded prepay ^a	19,813	17,631	2,182	12.4 %	16,316
Wholesale customers ^a	17,215	13,956	3,259	23.4 %	11,517

^a On September 1, 2016 T-Mobile US sold its marketing and distribution rights to certain of T-Mobile US' existing co-branded customers to a current wholesale partner for nominal consideration (the MVNO Transaction). Upon the sale, the MVNO Transaction resulted in a transfer of 1,365 thousand branded postpaid customers and 326 thousand branded prepay customers to wholesale customers. Prospectively from September 1, 2016, net customer additions for these customers are included within wholesale customers. Ending customers as of September 30, 2016 reflect the transfers in connection with the transaction.

At December 31, 2016, the United States operating segment (T-Mobile US) had 71.5 million customers compared to 63.3 million customers at December 31, 2015. Net customer additions were 8.2 million for the year ended December 31, 2016, compared to 8.3 million net customer additions for the year ended December 31, 2015 due to the factors described below.

Branded customers. Excluding the sale of marketing and distribution rights to certain of T-Mobile US' existing co-branded customers to a current wholesale partner (the MVNO Transaction) branded postpaid net customer additions were 4,097 thousand for the year ended December 31, 2016, compared to 4,510 thousand branded postpaid net customer additions for the year ended December 31, 2015. Branded postpaid net customer additions for the year ended December 31, 2016 were lower compared to the year ended December 31, 2015, primarily due to higher deactivations resulting from a growing branded postpaid customer base, partially offset by a lower branded postpaid churn rate as well as an increase in the number of qualified branded prepay customers migrating to branded postpaid plans.

Branded prepay net customer additions were 2,508 thousand (excluding the MVNO Transaction) for the year ended December 31, 2016, compared to 1,315 thousand branded prepay net customer additions for the year ended December 31, 2015. The increase was due primarily to success of the MetroPCS brand, continued growth in new markets and distribution expansion, partially offset by an increase in the number of qualified branded prepay customers migrating to branded postpaid plans.

Wholesale customers. Wholesale net customer additions were 1,568 thousand (excluding the MVNO Transaction) for the year ended December 31, 2016, compared to wholesale net customer additions of 2,439 thousand for the year ended December 31, 2015. The decrease was due primarily to higher deactivations from certain MVNO partners.

DEVELOPMENT OF OPERATIONS

millions of €

	2016	2015	Change	Change %	2014
TOTAL REVENUE	33,738	28,925	4,813	16.6 %	22,408
Profit from operations (EBIT)	3,685	2,454	1,231	50.2 %	1,405
EBIT margin %	10.9	8.5			6.3
Depreciation, amortization and impairment losses	(5,282)	(3,775)	(1,507)	(39.9) %	(2,839)
EBITDA	8,967	6,229	2,738	44.0 %	4,244
Special factors affecting EBITDA	406	(425)	831	n. a.	(52)
EBITDA (ADJUSTED FOR SPECIAL FACTORS)	8,561	6,654	1,907	28.7 %	4,296
EBITDA margin (adjusted for special factors) %	25.4	23.0			19.2
CASH CAPEX	(5,855)	(6,381)	526	8.2 %	(5,072)

Total revenue

Total revenue for the United States operating segment of EUR 33.7 billion in 2016 increased by 16.6 percent compared to EUR 28.9 billion in 2015. In U.S. dollars, T-Mobile US' total revenues increased by 16.3 percent year-on-year due primarily to service revenue growth resulting from increases in T-Mobile US' average branded customer base from strong customer response to T-Mobile US' Un-carrier initiatives, success of the MetroPCS brand and continued growth in new markets. Additionally, equipment revenues increased due primarily to higher lease revenues resulting from the launch of the JUMP! On Demand program at the end of the second quarter of 2015. With JUMP! On Demand, revenues associated with leased devices are recognized over the term of the lease rather than when the device is delivered to the customer. An additional factor driving the increase in equipment revenues included an increase in the number of devices sold and a higher average revenue per device sold.

EBITDA, adjusted EBITDA, adjusted EBITDA margin

Adjusted EBITDA increased by 28.7 percent to EUR 8.6 billion in 2016, compared to EUR 6.7 billion in 2015. In U.S. dollars, adjusted EBITDA increased by 28.7 percent in 2016, compared to 2015. Adjusted EBITDA was positively impacted by increased branded postpaid and prepay service revenues resulting from strong customer response to T-Mobile US' Un-carrier initiatives and the ongoing success of promotional activities; lower losses on equipment due primarily to an increase in lease revenues, which are recognized over the lease term, resulting from the launch of T-Mobile US' JUMP! On Demand program at the end of the second quarter of 2015. Additionally, the costs of leased devices, which are capitalized and depreciated over the lease term, are excluded from adjusted EBITDA. Additionally, focused cost control and synergies realized from the decommissioning of the MetroPCS Code Division Multiple Access (CDMA) network contributed to the adjusted EBITDA increase during 2016. These effects were partially offset by an increase in strategic investments to support T-Mobile US' growing total customer base, including higher employee-related costs, higher commissions

20	Deutsche Telekom at a glance	70	Corporate responsibility
26	Group organization	77	Innovation and product development
28	Group strategy	82	Employees
31	Management of the Group	87	Significant events after the reporting period
35	The economic environment	87	Forecast
40	Development of business in the Group	97	Risk and opportunity management
52	Development of business in the operating segments	112	Accounting-related internal control system
66	Development of business at Deutsche Telekom AG	113	Other disclosures

driven by an increase in T-Mobile US' branded customer additions and higher promotional costs. Adjusted EBITDA margin increased to 25.4 percent in 2016, compared to 23.0 percent in 2015 due to the factors described above.

Adjusted EBITDA in 2016 excludes EUR 0.4 billion special factors primarily related to non-cash gains from spectrum license transactions, partially offset by costs relating to the decommissioning of the MetroPCS CDMA network and stock-based compensation costs. Overall, EBITDA increased to EUR 9.0 billion in 2016, compared to EUR 6.2 billion in 2015 due to the factors described above, including the impact of special factors.

EBIT

EBIT increased to EUR 3.7 billion in 2016, compared to EUR 2.5 billion in 2015. This was driven by higher adjusted EBITDA, partially offset by higher depreciation expense related to devices leased under T-Mobile US' JUMP! On Demand program launched at the end of the second quarter of 2015, as well as increases from the continued build-out of T-Mobile US' 4G/LTE network, resulting in increased depreciation expense in 2016.

Cash capex

Cash capex decreased to EUR 5.9 billion in 2016, compared to EUR 6.4 billion in 2015, due primarily to EUR 2.2 billion of spectrum licenses acquired primarily through the U.S. FCC auction in January 2015 compared with payments of EUR 1.7 billion for the acquisition of spectrum licenses in 2016 as T-Mobile US continues to invest in network capex for the build-out of the 4G/LTE network.

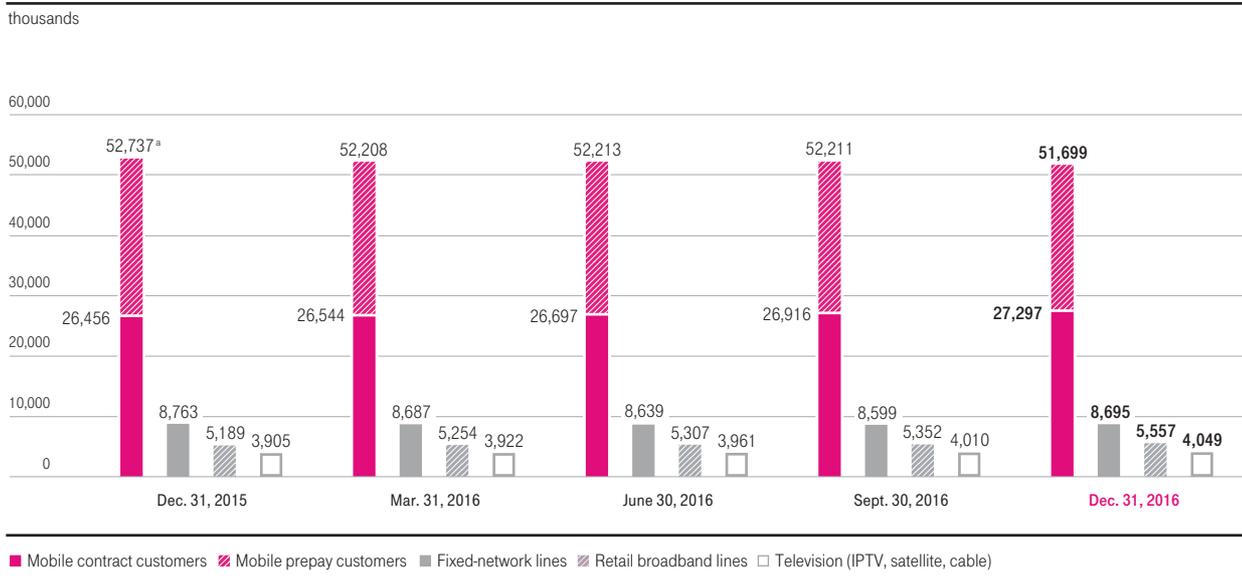
EUROPE

CUSTOMER DEVELOPMENT

Business customer operations at Magyar Telekom in Hungary, which had previously been organizationally assigned to the Systems Solutions operating segment, have been managed and reported under the Europe operating segment since January 1, 2016. Comparative figures have been adjusted retrospectively. 



For more information, please refer to Note 31 "Segment reporting" in the notes to the consolidated financial statements, page 192 et seq.



*In the fourth quarter of 2015, the number of mobile customers in Poland decreased by 3,838 thousand in connection with the deactivation of inactive prepaid SIM cards.

thousands

		Dec. 31, 2016	Dec. 31, 2015	Change	Change %	Dec. 31, 2014
EUROPE, TOTAL ^{a, b}	Mobile customers	51,699	52,737	(1,038)	(2.0) %	56,506
	Fixed-network lines	8,695	8,763	(68)	(0.8) %	9,098
	Of which: IP-based	5,180	4,132	1,048	25.4 %	3,503
	Retail broadband lines	5,557	5,189	368	7.1 %	5,007
	Television (IPTV, satellite, cable)	4,049	3,905	144	3.7 %	3,714
	Unbundled local loop lines (ULLs)/wholesale PSTN	2,259	2,239	20	0.9 %	2,325
	Wholesale bundled lines	123	121	2	1.7 %	140
	Wholesale unbundled lines	247	199	48	24.1 %	144
GREECE	Mobile customers	7,725	7,399	326	4.4 %	7,280
	Fixed-network lines	2,564	2,586	(22)	(0.9) %	2,624
	Broadband lines	1,682	1,531	151	9.9 %	1,388
ROMANIA	Mobile customers	5,722	5,992	(270)	(4.5) %	6,047
	Fixed-network lines	1,969	2,091	(122)	(5.8) %	2,239
	Broadband lines	1,194	1,186	8	0.7 %	1,199
HUNGARY	Mobile customers	5,332	5,504	(172)	(3.1) %	5,478
	Fixed-network lines	1,629	1,674	(45)	(2.7) %	1,710
	Broadband lines	1,040	1,023	17	1.7 %	982
POLAND ^a	Mobile customers	10,634	12,056	(1,422)	(11.8) %	15,702
	Fixed-network lines	20	18	2	11.1 %	n.a.
	Broadband lines	16	15	1	6.7 %	n.a.
CZECH REPUBLIC	Mobile customers	6,049	6,019	30	0.5 %	6,000
	Fixed-network lines	140	154	(14)	(9.1) %	131
	Broadband lines	134	134	-	-	131
CROATIA	Mobile customers	2,234	2,233	1	0.0 %	2,252
	Fixed-network lines	1,001	1,004	(3)	(0.3) %	1,076
	Broadband lines	783	741	42	5.7 %	725
NETHERLANDS ^b	Mobile customers	3,746	3,677	69	1.9 %	3,900
	Fixed-network lines	164	n.a.	164	n.a.	n.a.
	Broadband lines	164	n.a.	164	n.a.	n.a.
SLOVAKIA	Mobile customers	2,225	2,235	(10)	(0.4) %	2,220
	Fixed-network lines	850	855	(5)	(0.6) %	894
	Broadband lines	638	599	39	6.5 %	559
AUSTRIA	Mobile customers	4,594	4,323	271	6.3 %	4,020
OTHER ^c	Mobile customers	3,438	3,299	139	4.2 %	3,607
	Fixed-network lines	358	381	(23)	(6.0) %	423
	Broadband lines	279	285	(6)	(2.1) %	307

^a In the fourth quarter of 2015, the number of mobile customers in Poland decreased by 3,838 thousand in connection with the deactivation of inactive prepaid SIM cards.

^b In the fourth quarter of 2016, the number of fixed-network and broadband lines in the Netherlands grew as a result of the acquisition of Vodafone's fixed-network consumer business.

^c Other: national companies of Albania, the F.Y.R.O. Macedonia, and Montenegro, as well as the lines of the GTS Central Europe group in Romania.

20	Deutsche Telekom at a glance	70	Corporate responsibility
26	Group organization	77	Innovation and product development
28	Group strategy	82	Employees
31	Management of the Group	87	Significant events after the reporting period
35	The economic environment	87	Forecast
40	Development of business in the Group	97	Risk and opportunity management
52	Development of business in the operating segments	112	Accounting-related internal control system
66	Development of business at Deutsche Telekom AG	113	Other disclosures

Total

The national companies in our Europe operating segment once again had to face the challenge of a highly competitive market environment in the reporting year. We successfully launched our MagentaOne convergence product portfolio in our markets, and had already won around 1.4 million FMC customers by December 31, 2016 – an increase of 55.5 percent. Our TV business continued to be the revenue growth driver, firstly due to the wide variety of TV services we offer our customers and, secondly, because we are able to deliver high bandwidths using the right combination of technologies.

We are systematically driving forward the roll-out of fast, fiber-optic lines (FTTH, FTTB, and FTTC) in the fixed network. In mobile communications, we can already offer our customers in individual countries transmission rates of up to 450 Mbit/s via LTE Advanced/4G+. Our high speeds combined with a broad portfolio of rate plans including the newest and most powerful smartphones drove up the number of contract customers by 3.2 percent compared with the end of 2015. As part of our pan-European network strategy, we also increased the number of IP lines – primarily thanks to the migration from traditional PSTN lines to IP technology.

We also aim to be the best integrated provider on the market for our customers with regard to the Internet of Things (IoT). In machine-to-machine (M2M) communications, we offer customer-oriented solutions along the entire value chain. Here, we benefit from the solutions and integration expertise of T-Systems, our strong partner network, and the implementation of our Smart Cities initiatives. [SDG](#)

Mobile communications

As of the end of 2016, we had a total mobile customer base of 51.7 million – down by 2.0 percent compared with 2015. This decline is in line with our expectations and is attributable to customer losses in the prepay business, which was under pressure due to intense competition. Competition in this segment continues to intensify further following the introduction of a prepay registration requirement by the Polish government at the end of July 2016. We successfully implemented our strategy of focusing on high-value contract customers, recording an increase of 3.2 percent in this customer segment, which corresponds to growth of around 841 thousand customers. The growth in the number of contract customers seen over the past few quarters continued through the fourth quarter of 2016. Virtually all of our national companies, predominantly in Austria, the Netherlands, and Romania, contributed to the positive development in contract customer business. At the end of the reporting year, contract customers accounted for 52.8 percent of the total customer base.

This success is attributable to our high-performance networks. We are positioning ourselves in the relevant markets as a quality provider with the best service – and in many countries also as the provider with the best mobile network. This is borne out by regular independent mobile communications tests, including Best in Test from P3 Communications: In addition to the Netherlands, the F.Y.R.O. Macedonia, and Montenegro, we have now also received this certificate for our companies in Greece,

Slovakia, Albania, and Poland. Part of our network strategy is to systematically build out our mobile networks with 4G/LTE technology to increase transmission rates in all our national companies. Thanks to investments in our 4G/LTE network, our customers enjoy better network coverage with fast mobile broadband. By the end of 2016, we already covered 84 percent of the population in the countries of our operating segment with LTE, thus reaching more than 109 million people in total. This puts us right on schedule to reach our goal of between 75 and 95 percent network coverage by 2018. Not only the high level of data volumes used, but also the sales figures for mobile devices prove that our customers actually use these high bandwidths, with smartphones accounting for an even higher proportion in 2016 – 79 percent – of all devices sold compared with the prior year. [SDG](#)

Fixed network

Our TV and entertainment services have developed into a mainstay of our consumer business. That is why we continue to invest in making our entertainment services even better. This entails, on the one hand, a portfolio with an impressive selection of film, sports, and TV content. However, we are also working hard on providing services that our customers can use in high quality – anywhere and on all devices. In Greece, for example, our customers have been benefiting from a new hybrid TV service since April 2016 that combines the advantages of satellite TV and IPTV. And our customers value our innovations: The number of TV customers grew by 3.7 percent to 4.0 million compared with the end of 2015, with the majority of the net customer additions – 144 thousand – at our national companies in Greece, Slovakia, Romania, and Croatia.

As an integrated telecommunications provider, we intend to drive forward the convergence of fixed-network and mobile technology. Our convergence product portfolio, MagentaOne, is available to our customers in all of our integrated countries. As a result, we have already gained more than 1.4 million FMC customers in total, primarily in Greece, Romania, Croatia, and Slovakia. In addition to focusing on the consumer segment, we are now also extending our MagentaOne offering to business customers: In 2016, we began offering MagentaOne Business in Montenegro, Slovakia, Hungary, Romania, the F.Y.R.O. Macedonia, Croatia, and Greece. The technical basis for FMC products is a simplified and standardized network; this requires the national companies with a fixed-network architecture to migrate to IP technology. We continue to implement the IP migration successfully and, by the end of the reporting year, had virtually completed the migration in Hungary. Once finished, Hungary will be the fifth national company to convert its entire fixed-network architecture to IP technology. [SDG](#) As of December 31, 2016, we recorded 5.2 million IP-based lines – up 25.4 percent compared with 2015. At segment level, IP-based lines accounted for around 60 percent of all lines, significantly more than PSTN-based lines. In our Europe operating segment, 8.7 million customers used a fixed-network line as of the end of the reporting year, putting the number of fixed-network lines almost on a par with the prior-year level. In the fourth quarter of 2016, we acquired Vodafone's fixed-network consumer business in the Netherlands.

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



13 CLIMATE ACTION



The number of retail broadband lines continued to grow apace, increasing by 7.1 percent to 5.6 million as of December 31, 2016. The number of DSL lines has grown constantly over the past few quarters. Our decision to ramp up investment in fiber-optic-based lines in the integrated countries in our operating segment is paying off: The percentage of fiber-optic lines recorded double-digit growth compared with the end of 2015, and in 2016 the number of net customer additions

was higher than in DSL business for the first time ever. This growth was driven primarily by our national companies in Romania, Hungary, and Slovakia. We continued to increase our overall fiber-optic coverage, with our national companies reaching 25.6 percent of households as of December 31, 2016. Our goal for our integrated companies is to roll out FTTx with up to 100 Mbit/s to 50 percent of households.

DEVELOPMENT OF OPERATIONS

millions of €					
	2016	2015	Change	Change %	2014
TOTAL REVENUE	12,747	13,024	(277)	(2.1)%	13,221
Greece	2,883	2,878	5	0.2 %	2,869
Romania	985	984	1	0.1 %	1,002
Hungary	1,673	1,848	(175)	(9.5)%	1,742
Poland	1,488	1,544	(56)	(3.6)%	1,492
Czech Republic	959	958	1	0.1 %	862
Croatia	925	909	16	1.8 %	905
Netherlands	1,331	1,394	(63)	(4.5)%	1,551
Slovakia	766	783	(17)	(2.2)%	768
Austria	855	829	26	3.1 %	815
Other ^a	1,126	1,136	(10)	(0.9)%	1,442
Profit from operations (EBIT)	717	1,476	(759)	(51.4)%	1,729
EBIT margin %	5.6	11.3			13.1
Depreciation, amortization and impairment losses	(3,246)	(2,632)	(614)	(23.3)%	(2,611)
EBITDA	3,963	4,108	(145)	(3.5)%	4,340
Special factors affecting EBITDA	(131)	(221)	90	40.7 %	(131)
EBITDA (ADJUSTED FOR SPECIAL FACTORS)	4,094	4,329	(235)	(5.4)%	4,471
Greece	1,120	1,118	2	0.2 %	1,138
Romania	175	205	(30)	(14.6)%	266
Hungary	540	526	14	2.7 %	485
Poland	482	580	(98)	(16.9)%	579
Czech Republic	399	390	9	2.3 %	362
Croatia	374	367	7	1.9 %	365
Netherlands	358	500	(142)	(28.4)%	630
Slovakia	302	296	6	2.0 %	310
Austria	258	259	(1)	(0.4)%	211
Other ^a	85	88	(3)	(3.4)%	125
EBITDA margin (adjusted for special factors) %	32.1	33.2			33.8
CASH CAPEX	(2,764)	(1,667)	(1,097)	(65.8)%	(2,116)

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 Albania, the F.Y.R.O. Macedonia, and Montenegro, as well as ICSS (International Carrier Sales & Solutions), the ICSS/GNF business of the local business units, GNF (Global Network Factory), GTS Central Europe group in Romania, Europe Headquarters, Group Technology, and Pan-Net.

20	Deutsche Telekom at a glance	70	Corporate responsibility
26	Group organization	77	Innovation and product development
28	Group strategy	82	Employees
31	Management of the Group	87	Significant events after the reporting period
35	The economic environment	87	Forecast
40	Development of business in the Group	97	Risk and opportunity management
52	Development of business in the operating segments	112	Accounting-related internal control system
66	Development of business at Deutsche Telekom AG	113	Other disclosures

Total revenue

Our Europe operating segment generated total revenue of EUR 12.7 billion in 2016, a year-on-year decrease of 2.1 percent. In organic terms, i. e., excluding the spin-off of the energy resale business in Hungary as of January 1, 2016 and assuming constant exchange rates, revenue declined by 0.5 percent putting it more or less on a par with the prior-year level. Excluding the development of business in the Netherlands, organic revenue in the Europe operating segment would be at exactly the prior-year level.

Decisions of the regulatory authorities – such as the imposition of lower roaming charges in many of the countries in our segment and, especially in Hungary, reduced mobile termination rates – also had an impact on our organic revenues in the reporting period. Intense competition on the telecommunications markets of our national companies also had a negative impact.

Our national companies have aligned themselves with the strategic growth areas and recorded a 2.5 percent increase in revenues in this field, partially offsetting the slight decline in revenues at segment level. Thus the growth areas accounted for 31.0 percent of segment revenue. Revenue from mobile data business increased by 5.6 percent year-on-year to EUR 1.8 billion. Most countries of our operating segment made a contribution to this growth, especially Austria, the Czech Republic, Hungary, and Greece. Absolute revenue growth from mobile data business was largely attributable to consumers. Data service usage rates continue to see strong growth, mainly among contract customers, due to the availability of high bandwidths and attractive rate plans in conjunction with a large portfolio of terminal equipment. Thanks to our innovative TV and program management, the TV business continued its upward trend of the past few quarters: In 2016, TV revenue increased by 9.4 percent to EUR 466 million. TV revenue accounted for some 41 percent of the revenue increase in our growth areas and is our second strongest driver of growth, preceded only by mobile data business. Despite the ongoing realignment of our core business with key growth areas, our B2B/ICT business with business customers posted lower revenue.

In addition to the growth areas, we recorded higher visitor revenues (i. e., revenues from third parties for roaming in our home network) and higher terminal equipment revenues. Wholesale business also contributed to the increase in revenue, due primarily to the volume-driven rise in call terminations.

From a country perspective, the decline in business in the Netherlands had the strongest impact on the organic development of revenue in 2016. Reduced charges on account of the roaming regulation and competition-driven price reductions – both in voice telephony and in data business – had a negative impact on revenue development. A substantial rise in net customer additions in the third and fourth quarter of 2016 are starting to have a positive effect. Higher visitor revenues

also made a positive contribution. Our national company in Slovakia also recorded a decline in revenue, primarily in fixed-network business. Revenues from voice telephony and in B2B/ICT business decreased. This was only partially offset by the increase in revenue from TV and mobile business, in particular as a result of a rise in data revenues. The national companies in Austria, Croatia, Greece, and Poland made particularly positive contributions to organic segment revenue, thereby almost completely offsetting the declines.

EBITDA, adjusted EBITDA

Our Europe operating segment generated adjusted EBITDA of EUR 4.1 billion in 2016, a year-on-year decrease of 5.4 percent. In organic terms, i. e., excluding the spin-off of the energy resale business in Hungary as of January 1, 2016 and assuming constant exchange rates, adjusted EBITDA decreased by 4.9 percent. Excluding the development of business in the Netherlands, organic adjusted EBITDA in our Europe operating segment declined by 1.9 percent. As a result, we did not quite meet our expected adjusted EBITDA target of EUR 4.3 billion: Firstly, due to the fact that the lower level of organic revenues at segment level in general had a negative effect on adjusted EBITDA, and, secondly, due to the impact of higher direct costs resulting from higher interconnection costs, higher market investments, and other factors. Legislative changes such as those affecting taxes and duties, government austerity programs, in Greece for example, and decisions by regulatory authorities also played a part in this context.

From a country perspective, the decline in adjusted EBITDA is attributable mainly to the developments in our national companies in the Netherlands, Poland, and Romania, as well as to mobile business in Greece. By contrast, the adjusted EBITDA generated in particular in the national companies in Hungary, the Czech Republic, Slovakia, and Croatia, as well as in the fixed-network business in Greece, increased.

EBITDA decreased 3.5 percent year-on-year to EUR 4.0 billion due to two main effects: In the prior year, EBITDA had been affected by higher negative special factors, while the decline in adjusted EBITDA in 2016 had the opposite effect.

Development of operations in selected countries

In view of our aim of becoming the leading European telecommunications provider, the majority of our national companies are pursuing the strategy of developing into integrated all-IP players that provide the best customer experience – regardless of their respective market position. To this end, we are establishing a production model with a pan-European, fully IP-based network infrastructure, the best network access, and optimized processes and customer interfaces. Most of our national companies already operate in both fixed-network and mobile communications in their respective markets. We present the following three national companies by way of example:

Greece. In Greece, revenue totaled EUR 2.9 billion in the reporting year, putting it on a par with the prior-year level. The positive revenue trend in the fixed-network business offset the decline in mobile business. The TV business in particular proved to be a steady growth driver once again: Our innovative TV services offering a huge variety of channels resulted in double-digit customer growth. As a result, TV revenue also increased by 31 percent compared with the prior year – despite a tax levied by the government on pay TV. Our FMC product CosmoteOne also contributed to revenue growth. Broadband business also benefited from the increased number of DSL lines. Our B2B/ICT business customer operations remained stable at the prior-year level. Overall, we more than offset the negative effects from the decline in voice telephony.

The continuing strained economic situation, intense competition, and new tax legislation had a negative effect on mobile revenues in the reporting year. The price- and volume-driven decline in revenue from voice telephony in particular impacted negatively on service revenues. This was only partially compensated for by stronger growth in the customer base. Rising revenues from mobile data services, as a result of higher data volumes and higher visitor revenues, among other factors, had a positive effect on service revenues. By contrast, revenue from the sale of mobile terminal equipment declined.

In Greece, adjusted EBITDA remained stable in the reporting year at EUR 1.1 billion. The slight increase in direct costs was more than offset by savings in indirect costs, primarily as a result of lower personnel costs.

Hungary. In Hungary, revenue decreased by 9.5 percent year-on-year to EUR 1.7 billion. In organic terms, i. e., excluding the spin-off of the energy resale business in Hungary as of January 1, 2016 and assuming constant exchange rates, segment revenue remained virtually stable.

In mobile communications, significantly higher revenues from sales of mobile terminal equipment completely offset the slight decline in service revenues, which was due to offsetting effects: Lower mobile termination rates and roaming regulation charges contributed to a reduction in voice revenues. This was contrasted by higher revenues from mobile data services, which increased by 7.6 percent compared with 2015. Our high-speed, high-reach mobile data network also had a positive effect on this development. By contrast, the fixed-network business continued to decline due to decreased revenue from our B2B/ICT business with

business customers and from voice services. TV and broadband business developed well and contributed positively to total revenues. The number of broadband lines increased gradually, due in particular to the roll-out of fiber-optic lines. Our TV business also profited from this, attracting customers with its innovative services across all screens and by the variety of channels. The MagentaOne FMC offering in the consumer and business customer segments also contributed to this trend.

Adjusted EBITDA increased by 2.7 percent year-on-year in 2016 to EUR 540 million. Organically, adjusted EBITDA was up 3.6 percent as a result of stable revenues, lower direct costs, and savings in indirect costs.

Austria. In Austria, we generated revenue of EUR 855 million in 2016, a year-on-year increase of 3.1 percent. This increase is largely attributable to higher revenue from mobile data business: The rise in contract customer additions increased the usage of data services. Data services accounted for 28 percent of total revenue. Visitor revenues also had a positive effect on revenue development. Overall, these positive revenue effects more than offset the decrease in revenue from text messaging services and the sale of mobile terminal equipment. Voice telephony revenue was on a par with the prior-year level.

At EUR 258 million, adjusted EBITDA in 2016 remained at the prior-year level. Higher revenue offset an increase in direct costs attributable to market investments. Indirect costs were up compared with 2015.

EBIT

EBIT in our Europe operating segment decreased by 51.4 percent in 2016 to EUR 0.7 billion. This was attributable largely to the EUR 0.6 billion increase in depreciation, amortization and impairment losses – in particular from the impairment of goodwill and property, plant and equipment amounting to EUR 0.6 billion resulting from the year-end impairment tests, primarily in the Netherlands and Romania.

Cash capex

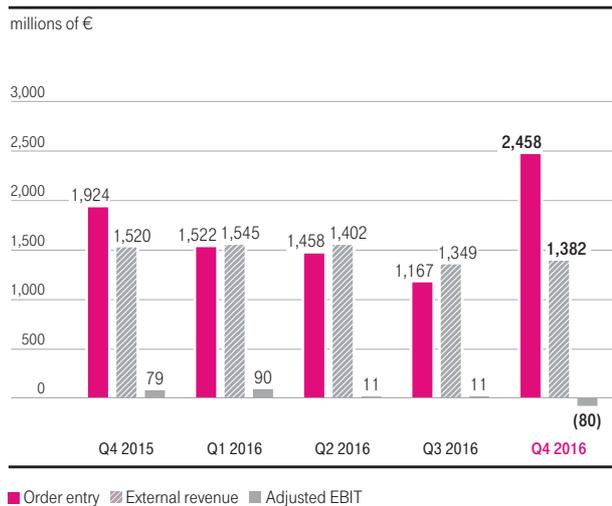
In 2016, our Europe operating segment reported cash capex of EUR 2.8 billion, an increase of EUR 1.1 billion, mainly due to the acquisition in the reporting year of mobile spectrum in Poland, the Czech Republic, and Montenegro as well as the frequency extension in the Netherlands.

20	Deutsche Telekom at a glance	70	Corporate responsibility
26	Group organization	77	Innovation and product development
28	Group strategy	82	Employees
31	Management of the Group	87	Significant events after the reporting period
35	The economic environment	87	Forecast
40	Development of business in the Group	97	Risk and opportunity management
52	Development of business in the operating segments	112	Accounting-related internal control system
66	Development of business at Deutsche Telekom AG	113	Other disclosures

SYSTEMS SOLUTIONS

SELECTED KPIs

Business customer operations at Magyar Telekom in Hungary, which had previously been organizationally assigned to the Systems Solutions operating segment, have been managed and reported under the Europe operating segment since January 1, 2016. Comparative figures have been adjusted retrospectively. [\[E\]](#)



For more information, please refer to Note 31 "Segment reporting" in the notes to the consolidated financial statements, page 192 et seq.

		Dec. 31, 2016	Dec. 31, 2015	Change	Change %	Dec. 31, 2014
ORDER ENTRY	millions of €	6,605	5,608	997	17.8 %	7,107
COMPUTING & DESKTOP SERVICES						
Number of servers managed and serviced	units	74,336	62,590	11,746	18.8 %	61,654
Number of workstations managed and serviced	millions	1.77	1.71	0.06	3.5 %	1.58
SYSTEMS INTEGRATION						
Hours billed	millions	7.1	5.3	1.8	34.0 %	6.1
Utilization rate	%	83.3	82.9		0.4 %p	83.8

Development of business

In the reporting year, our Systems Solutions operating segment experienced a slight downward trend compared with the prior year, although our Market Unit profited from the completion of the set-up phase of our corporate customer project to build and operate an electronic toll collection system in Belgium. Strengthened by our realignment, we performed particularly well with our standard solutions from the growth area of cloud computing, where we are growing faster than the market in most market segments. Another key component in the expansion of our cloud business is strategic partnerships. This means we offer our partners' services from our data centers in Germany. The aspects of security and high availability play a key role for T-Systems and our customers. [\[SDG\]](#)

We successfully secured further new deals in Germany and abroad in 2016. The order volume was higher than expected in the reporting period: While we had indeed forecast an increase, growth was actually stronger than anticipated. This was attributable, on the one hand, to delays with order entries that we had expected in 2015 and, on the other, to two additional major contracts that we signed at the end of 2016 and that were not included in our initial planning. To meet the requirements from the new deals, we are continuously modernizing and consolidating our ICT resources. Thus the number of servers managed and serviced increased by 18.8 percent compared with 2015. At the data centers, technical advances made it possible to set up ever larger and higher-performance units, which had a positive impact on our cost efficiency. The number of workstations managed and serviced increased by 3.5 percent year-on-year.

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



DEVELOPMENT OF OPERATIONS

millions of €

	2016	2015	Change	Change %	2014
TOTAL REVENUE	7,907	8,194	(287)	(3.5)%	8,252
Loss from operations (EBIT)	(330)	(541)	211	39.0 %	(447)
Special factors affecting EBIT	(362)	(713)	351	49.2 %	(549)
EBIT (adjusted for special factors)	32	172	(140)	(81.4)%	102
EBIT margin (adjusted for special factors) %	0.4	2.1			1.2
Depreciation, amortization and impairment losses	(575)	(634)	59	9.3 %	(704)
EBITDA	245	93	152	n. a.	257
Special factors affecting EBITDA	(337)	(647)	310	47.9 %	(540)
EBITDA (ADJUSTED FOR SPECIAL FACTORS)	582	740	(158)	(21.4)%	797
EBITDA margin (adjusted for special factors) %	7.4	9.0			9.7
CASH CAPEX	(1,058)	(1,151)	93	8.1 %	(1,156)

Total revenue

Total revenue in our Systems Solutions operating segment in the reporting year amounted to EUR 7.9 billion, a year-on-year decrease of 3.5 percent.

Revenue of our Market Unit, i. e., essentially our business with external customers, was down 2.9 percent compared with 2015 to EUR 6.5 billion. Both national and international revenue in this unit declined, despite the completion of the set-up phase of the toll collection system in Belgium in the first quarter of 2016. The general downward price trend in ICT business and exchange rate effects had a negative impact on the Market Unit's revenue.

In our Telekom IT business unit, which mainly pools our Group's domestic internal IT activities, revenue stood at EUR 1.4 billion, down 6.1 percent. This planned decrease against prior years was attributable to further IT cost savings made by our Group.

EBITDA, adjusted EBITDA

In 2016, adjusted EBITDA in our Systems Solutions operating segment was 21.4 percent lower than in 2015. The Market Unit's EBITDA contribution declined by EUR 51 million year-on-year, mainly due to the accounting treatment of risks from individual corporate customer contracts. Measures we introduced to cut costs and enhance efficiency, and the positive billing effect after the completion of the set-up phase of the toll system in Belgium only partially offset this effect. Telekom IT posted adjusted EBITDA of EUR 68 million. This year-on-year decrease of EUR 91 million was mainly due to further IT cost savings made by the Group. The adjusted EBITDA margin of our Systems Solutions operating segment decreased from 9.0 percent in the prior year to 7.4 percent.

EBITDA increased by EUR 152 million compared with the prior year to EUR 245 million, mainly as a result of a EUR 310 million decrease in special factors, primarily due to restructuring programs in the prior year.

EBIT, adjusted EBIT

Adjusted EBIT decreased by EUR 140 million compared with 2015 to EUR 32 million, due in particular to the negative one-time effects in the Market Unit described under EBITDA and to lower contributions from Telekom IT. Decreases in depreciation, amortization and impairment losses due to the migration of IT platforms had a slightly offsetting effect on adjusted EBIT. Hence the adjusted EBIT margin decreased from 2.1 percent to 0.4 percent in the reporting year.

Cash capex

Cash capex decreased by 8.1 percent year-on-year, due to enhanced efficiency, for example as a result of the standardization of the ICT platforms and the consolidation of data centers. Our level of investment remains high at EUR 1.1 billion and is attributable to the increasing advancement of the digitization of enterprises. For this reason, we are investing in growth areas and in digital innovation areas, such as digital transformation and the Internet of Things, cloud computing, and cyber security.

20	Deutsche Telekom at a glance	70	Corporate responsibility
26	Group organization	77	Innovation and product development
28	Group strategy	82	Employees
31	Management of the Group	87	Significant events after the reporting period
35	The economic environment	87	Forecast
40	Development of business in the Group	97	Risk and opportunity management
52	Development of business in the operating segments	112	Accounting-related internal control system
66	Development of business at Deutsche Telekom AG	113	Other disclosures

GROUP HEADQUARTERS & GROUP SERVICES

Group Headquarters & Group Services comprises all Group units that cannot be allocated directly to one of our operating segments.

DEVELOPMENT OF OPERATIONS

millions of €

	2016	2015	Change	Change %	2014
TOTAL REVENUE	2,212	2,275	(63)	(2.8)%	2,516
Profit (loss) from operations (EBIT)	1,001	(860)	1,861	n. a.	(109)
Depreciation, amortization and impairment losses	(521)	(627)	106	16.9 %	(671)
EBITDA	1,522	(233)	1,755	n. a.	562
Special factors affecting EBITDA	2,098	319	1,779	n. a.	1,229
EBITDA (ADJUSTED FOR SPECIAL FACTORS)	(576)	(552)	(24)	(4.3)%	(667)
CASH CAPEX	(268)	(342)	74	21.6 %	(381)

Total revenue

Total revenue in our Group Headquarters & Group Services segment in 2016 decreased by 2.8 percent year-on-year. This was mainly due to revenues lost as a result of the sale of our online platform t-online.de and our digital marketing company InteractiveMedia in November 2015, as well as the realignment of our Group Innovation⁺ unit. In addition, we continued to optimize the use of land and buildings, which resulted in a decline in intragroup revenue. By contrast, we recorded a revenue increase in connection with the structural further development of our Multi-Shared Service Center.

EBITDA, adjusted EBITDA

Adjusted EBITDA in our Group Headquarters & Group Services segment decreased by EUR 24 million year-on-year in the reporting year, mainly due to income of EUR 175 million recorded in the first quarter of 2015 resulting from an agreement to settle a complaints procedure under anti-trust law. Excluding this one-time effect, adjusted EBITDA was up EUR 151 million compared with the prior year, primarily due to lower personnel costs as a result of the continued staff restructuring at Vivento, as well as lower operating expenses at our Group Services. The reversal of provisions, the realignment of our Group Innovation⁺ unit, and higher income from the real estate sales also had a positive effect. The following factors had a negative impact: lower revenues from land and buildings, reduced income from reimbursements in connection with the sale of our EE joint venture to the UK company BT in January 2016, and the loss of contributions as a result of the sale of t-online.de and InteractiveMedia.

Overall, positive special factors of EUR 2.1 billion affected EBITDA in 2016. These factors resulted primarily from the sale of our EE joint venture to the UK company BT, which was completed in January 2016. We generated income of some EUR 2.5 billion from this sale. The sales of shares in Scout24 AG in April and December 2016 also generated income of some EUR 0.1 billion. By contrast, EBITDA was negatively affected by expenses, especially for staff-related measures, of some EUR 0.5 billion in the reporting year. In 2015, the special factors, which totaled some EUR 0.3 billion, consisted primarily of income of around EUR 0.3 billion from the sale of shares in connection with the IPO of Scout24 AG and income of EUR 0.3 billion from the sale of our online platform t-online.de and our digital marketing company InteractiveMedia, offset by a negative effect on EBITDA in 2015 from expenses of some EUR 0.3 billion, especially for staff-related measures.

EBIT

The increase in EBIT by EUR 1.9 billion compared with 2015 is primarily attributable to income from the disposal of our EE joint venture recorded in 2016. Depreciation, amortization and impairment losses were down EUR 0.1 billion on the prior-year level, due in particular to lower depreciation and impairment losses on land and buildings as a result of our continued efforts to optimize our real estate portfolio.

Cash capex

Cash capex decreased year-on-year by EUR 74 million, due to the purchase of fewer vehicles and licenses.



For more information on our Group Headquarters & Group Services segment, please refer to the section "Group organization," page 26 et seq., and to Note 31 "Segment reporting" in the notes to the consolidated financial statements, page 192 et seq.

DEVELOPMENT OF BUSINESS AT DEUTSCHE TELEKOM AG

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

As the Headquarters of the Deutsche Telekom Group, we perform strategic and cross-segment management functions and provide services for other Group companies. The profits and losses of our subsidiaries and Group financing measures have a material effect on our financial position and results of operations. For example, we were able to offset the decline in non-contract terminal equipment business in our Germany operating segment with efficiency enhancement measures. In our Systems Solutions

operating segment, the accounting treatment of risks from individual corporate customer contracts and the general downward trend in ICT business as well as exchange rate effects had a negative impact on results. The Europe operating segment continued to be affected by competitive and price pressure in 2016.

Deutsche Telekom AG reported income after taxes for the 2016 financial year of EUR 2.0 billion. In addition to the operating business, the development of business in the reporting year was influenced by a number of very different effects (e.g., increased take up of the early retirement program for civil servants, a reversal of a write-down at T-Mobile Global Zwischenholding GmbH, Bonn, and a write-down at T-Mobile Global Holding GmbH, Bonn, on the indirect stake held there in the British BT Group plc), arising from both the company's own business and from 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 €

	2016	2015	Change	Change %	2014
NET REVENUE	3,927	3,313	614	18.5 %	3,677
Other own capitalized costs	4	7	(3)	(42.9) %	18
TOTAL OPERATING PERFORMANCE	3,931	3,320	611	18.4 %	3,695
Other operating income	2,120	4,065	(1,945)	(47.8) %	3,639
Goods and services purchased	(1,151)	(1,165)	14	1.2 %	(1,372)
Personnel costs ^a	(3,516)	(2,949)	(567)	(19.2) %	(2,866)
Depreciation, amortization and write-downs	(338)	(387)	49	12.7 %	(434)
Other operating expenses ^a	(3,570)	(4,186)	616	14.7 %	(3,675)
OPERATING RESULTS	(2,524)	(1,302)	(1,222)	(93.9) %	(1,013)
Financial income (expense), net	4,717	3,492	1,225	35.1 %	5,281
Income taxes	(154)	(282)	128	45.4 %	(243)
INCOME AFTER INCOME TAXES	2,039	1,908	131	6.9 %	4,025
Other taxes	(19)	(19)	-	-	(20)
INCOME AFTER TAXES	2,020	1,889	131	6.9 %	4,005

^a Pursuant to the provisions of IDW RS HFA 30, as amended, which was adopted in December 2016, the expenses arising from the collateral promise for pensions must be recognized under personnel costs; in previous years, they had been included under other operating expenses. Prior-year figures have been adjusted accordingly.

The negative operating results deteriorated further by approximately EUR 1.2 billion year-on-year, due to a year-on-year decrease in other operating income of EUR 1.2 billion before reclassifications to net revenue, and an increase in personnel costs of EUR 0.6 billion compared with the prior year. A decrease in other operating expenses of EUR 0.6 billion had an offsetting effect.

The year-on-year increase in net revenue is primarily due to changes in presentation on account of the German Accounting Directive Implementation Act (Bilanzrichtlinie-Umsetzungsgesetz – BilRUG). Pursuant to this Act, income of EUR 0.7 billion allocable to units including HR Business Services, Group Legal Services, and Group Innovation⁺ had to be recognized as revenue in the reporting year. In the prior year, it had been disclosed under other operating income.

Other operating income declined by EUR 1.9 billion overall year-on-year, with the change in presentation due to the BilRUG accounting for EUR 0.7 billion thereof. The item was also impacted by a year-on-year

decline of EUR 0.3 billion in foreign currency transaction gains and income from derivatives, due largely to realized exchange rate effects from U.S. dollar cross-currency interest rate hedges and U.S. dollar derivatives which fell due as planned in the reporting year. Offsetting effects from hedging are included in other operating expenses. In the prior year, the sale of further shares in Scout24 AG, Munich, and the sale of Digital Media Products GmbH, Cologne (formerly T-Online Beteiligungs GmbH, Darmstadt), to Ströer SE, Cologne, had raised other operating income by EUR 0.3 billion in each case.

Other operating expenses were down by EUR 0.6 billion year-on-year, mainly due to a decrease of EUR 0.5 billion as a result of lower foreign currency transaction losses and decreased expenses arising from derivatives, caused in particular by U.S. dollar cross-currency interest rate hedges and U.S. dollar currency derivatives which fell due as planned in the reporting year. Offsetting effects from hedging are included in other operating income.

20	Deutsche Telekom at a glance	70	Corporate responsibility
26	Group organization	77	Innovation and product development
28	Group strategy	82	Employees
31	Management of the Group	87	Significant events after the reporting period
35	The economic environment	87	Forecast
40	Development of business in the Group	97	Risk and opportunity management
52	Development of business in the operating segments	112	Accounting-related internal control system
66	Development of business at Deutsche Telekom AG	113	Other disclosures

The EUR 0.6 billion increase in personnel costs is mainly attributable to the increase in the use of the early retirement program for civil servants compared with the previous year.

Net financial income increased by EUR 1.2 billion to EUR 4.7 billion. This was largely attributable to EUR 0.9 billion lower write-downs on financial assets.

The reduction of EUR 0.6 billion in the net interest expense compared with the prior year was primarily the result of a decrease of EUR 0.5 billion in the interest cost of pension accruals. The application of the Act on the Implementation of the Mortgage Credit Directive and Amending Commercial Regulations (Gesetz zur Umsetzung der Wohnimmobilienkreditrichtlinie und zur Änderung handelsrechtlicher Vorschriften), which entered into force on March 21, 2016, and the associated discounting of pension accruals at the average market interest rate from the last ten financial years for the first time in the reporting year (previously: seven financial years) resulted in a decrease of EUR 0.5 billion in interest added back to pension accruals.

Income related to subsidiaries, associated and related companies, which declined slightly by EUR 0.3 billion compared with the prior year, was

positively affected again in the reporting year by profits transferred by Telekom Deutschland GmbH, Bonn, and T-Mobile Global Zwischenholding GmbH, Bonn. The transfer of the loss from T-Systems International GmbH, Frankfurt/Main, had an offsetting effect.

The main positive effects on the profits transferred by T-Mobile Global Zwischenholding GmbH, Bonn, in the 2016 financial year were the write-up to T-Mobile Global Holding GmbH, Bonn, and the financial asset indirectly held there, T-Mobile US, Inc., Bellevue. The write-up of T-Mobile US, Inc., Bellevue, is primarily a result of the sustained positive development of business. The write-down at T-Mobile Global Holding GmbH, Bonn, on the investment held indirectly there in the British BT Group plc had a negative effect.

Income after income taxes was particularly impacted by the aforementioned effects and increased by a total of EUR 0.1 billion year-on-year in 2016.

Other tax expense of EUR 19 million combined with the aforementioned factors resulted in income after taxes of EUR 2,020 million in 2016. Taking into account EUR 1,775 million in unappropriated net income carried forward, unappropriated net income totaled EUR 3,795 million.

FINANCIAL POSITION OF DEUTSCHE TELEKOM AG

Balance sheet of Deutsche Telekom AG under German GAAP

millions of €

	Dec. 31, 2016	Dec. 31, 2016 %	Dec. 31, 2015	Change	Dec. 31, 2014
ASSETS					
Intangible assets	249	0.3	261	(12)	310
Property, plant and equipment	2,993	2.9	3,295	(302)	3,594
Financial assets	81,240	78.7	84,469	(3,229)	85,705
NONCURRENT ASSETS	84,482	81.9	88,025	(3,543)	89,609
Inventories	1	0.0	1	-	5
Receivables	16,308	15.8	15,795	513	12,655
Other assets	1,629	1.6	1,338	291	1,135
Cash and cash equivalents	208	0.2	221	(13)	387
CURRENT ASSETS	18,146	17.6	17,355	791	14,182
Prepaid expenses and deferred charges	516	0.5	418	98	581
Difference between plan assets and corresponding liabilities	36	0.0	16	20	6
TOTAL ASSETS	103,180	100.0	105,814	(2,634)	104,378
SHAREHOLDERS' EQUITY AND LIABILITIES					
Capital stock and reserves	51,651	50.0	50,615	1,036	49,497
Unappropriated net income	3,795	3.7	4,299	(504)	4,667
SHAREHOLDERS' EQUITY	55,446	53.7	54,914	532	54,164
Pensions and similar obligations ^a	3,247	3.2	3,512	(265)	3,279
Tax accruals	238	0.2	255	(17)	194
Other accruals ^a	1,642	1.6	1,493	149	1,513
ACCRUALS	5,127	5.0	5,260	(133)	4,986
Debt	5,021	4.9	9,428	(4,407)	5,977
Other liabilities	37,413	36.2	36,019	1,394	39,037
LIABILITIES	42,434	41.1	45,447	(3,013)	45,014
Deferred income	173	0.2	193	(20)	214
TOTAL SHAREHOLDERS' EQUITY AND LIABILITIES	103,180	100.0	105,814	(2,634)	104,378

^a Pursuant to the provisions of IDW RS HFA 30, as amended, which was adopted in December 2016, the accruals from the collateral promise for pensions must be recognized under pension accruals; in previous years, they had been included under other accruals. Prior-year figures have been adjusted accordingly.

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 Deutsche Telekom AG's financing function for its subsidiaries, whereby financing on the external capital market is generally handled by Deutsche Telekom AG International Finance B.V., Maastricht, and passed on to Deutsche Telekom AG.

The balance sheet total decreased by EUR 2.6 billion year-on-year to EUR 103.2 billion.

The development of total assets was attributable in particular to the decrease of EUR 3.5 billion in noncurrent assets, and the increase of EUR 0.5 billion in receivables, and of EUR 0.3 billion in other assets.

The year-on-year decrease in financial assets of EUR 3.2 billion was mainly due to a capital repayment by Deutsche Telekom IT GmbH (formerly T-Mobile Worldwide Holding GmbH), Bonn, of EUR 2.0 billion. A EUR 1.1 billion decline in loans to subsidiaries compared with the prior year, in particular in loans to Telekom Deutschland GmbH, Bonn, also contributed to the decrease.

The decrease of EUR 0.3 billion in property, plant and equipment was primarily due to the depreciation of real estate.

The increase of EUR 0.5 billion in receivables from subsidiaries resulted from a EUR 0.6 billion increase in receivables from cash management, mostly from Telekom Deutschland GmbH, Bonn, offset by a EUR 0.1 billion decrease in financial receivables from subsidiaries.

The development of total shareholders' equity and liabilities was mainly influenced by the decrease of EUR 4.4 billion in financial liabilities, and of EUR 0.3 billion in accruals for pensions and similar obligations, offset by the increase of EUR 1.4 billion in other liabilities, and of EUR 0.5 billion in shareholders' equity.

The decrease in financial liabilities was primarily due to a net effect of EUR 3.7 billion from the repayment of commercial paper which exceeded the new issues and to the repayment of loans of EUR 0.7 billion and promissory notes of EUR 0.2 billion. The main offsetting effect was from the new issue of a new long-term loan of EUR 0.5 billion.

The decrease of EUR 0.3 billion in accruals for pensions and similar obligations is primarily attributable to an increase of EUR 0.2 billion in plan assets offset. In addition, the present value of direct pension obligations decreased by EUR 0.1 billion.

The increase of EUR 1.4 billion in other liabilities was in particular the result of net loans of EUR 5.6 billion, mainly from Deutsche Telekom International Finance B.V., Maastricht. It was also attributable to EUR 0.4 billion higher liabilities from early retirement arrangements for civil servants. The decrease in liabilities from cash management of EUR 3.8 billion and in liabilities from collateral of EUR 0.9 billion had an offsetting effect.

The increase in shareholders' equity was mainly due to income after taxes for the financial year of EUR 2.0 billion and its effect on unappropriated net income as well as to the deposits of EUR 1.0 billion reported in capital stock and reserves by shareholders who chose to exchange their dividend entitlement for the 2015 financial year for shares as part of the fulfillment of dividend entitlements. The EUR 2.5 billion dividend payment for the previous year had an offsetting effect.

Statement of cash flows of Deutsche Telekom AG under German GAAP

millions of €

	2016	2015	Change	2014
INCOME AFTER TAXES	2,020	1,889	131	4,005
Net cash (used for) provided by operating activities	(1,531)	(134)	(1,397)	1,424
Net cash provided by investing activities	4,156	1,470	2,686	2,905
Net cash used for financing activities	(2,638)	(1,502)	(1,136)	(5,064)
NET CHANGE IN CASH AND CASH EQUIVALENTS	(13)	(166)	153	(735)
Cash and cash equivalents, at the beginning of the year	221	387	(166)	1,122
CASH AND CASH EQUIVALENTS, AT THE END OF THE YEAR	208	221	(13)	387

20	Deutsche Telekom at a glance	70	Corporate responsibility
26	Group organization	77	Innovation and product development
28	Group strategy	82	Employees
31	Management of the Group	87	Significant events after the reporting period
35	The economic environment	87	Forecast
40	Development of business in the Group	97	Risk and opportunity management
52	Development of business in the operating segments	112	Accounting-related internal control system
66	Development of business at Deutsche Telekom AG	113	Other disclosures

Net cash used for operating activities increased year-on-year by EUR 1.4 billion, resulting in net cash used for operating activities of EUR 1.5 billion. After elimination of the non-cash write-downs in the amount of EUR 0.4 billion and the net interest expense of EUR 0.7 billion in income after taxes, this trend results in particular from the net increase of EUR 4.5 billion in receivables from cash management, which was largely attributable to higher profit transfers from subsidiaries as well as the related issue of short-term loans in connection with cash management at the Group. After elimination of the non-cash write-downs in the amount of EUR 1.4 billion and the net interest expense of EUR 1.3 billion with income after taxes of EUR 1.9 billion, the prior-year net cash used for operating activities of EUR 0.1 billion had primarily been affected by the net increase of EUR 4.4 billion in receivables from cash management.

Net cash provided by investing activities in the reporting year included in particular an equity repayment by Deutsche Telekom IT GmbH (formerly T-Mobile Worldwide Holding GmbH), Bonn, in the amount of EUR 2.0 billion, and repayments of medium- and long-term investments of subsidiaries of EUR 2.1 billion. Net cash provided by investing activities also included interest received of EUR 0.6 billion and cash inflows from the disposal of property, plant and equipment of EUR 0.2 billion and from the sale of further shares in Scout24 AG, Munich, of EUR 0.1 billion. Medium- and long-term investments of EUR 0.9 billion at subsidiaries had an offsetting effect. In the prior year, net cash provided by investing activities of EUR 1.5 billion mainly comprised interest received of EUR 0.9 billion, the sale of around half of the investment in Scout24 AG, Munich, for EUR 0.4 billion, the repayment of company funds of Scout24 AG, Munich, of EUR 0.1 billion, cash inflows for cash collateral furnished to hedge derivatives of EUR 0.4 billion, offset by net medium- and long-term investments at subsidiaries of EUR 0.3 billion.

Net cash used for financing activities increased by EUR 1.1 billion year-on-year to EUR 2.6 billion and in the reporting year primarily comprised net repayments of current financial liabilities of EUR 8.7 billion, the payment of the cash dividend for the 2015 financial year of EUR 1.5 billion, and interest paid of EUR 1.3 billion. The issuance of medium- and long-term liabilities of EUR 8.3 billion and cash inflows from the close-out of interest rate and currency derivatives of EUR 0.6 billion had an offsetting effect. In the prior year, net cash used for financing activities of EUR 1.5 billion mainly comprised interest paid of EUR 1.6 billion and the payment of the cash dividend for the 2014 financial year of EUR 1.2 billion, offset by the net issuance of medium- and long-term liabilities of EUR 1.0 billion and the net issuance of current liabilities of EUR 0.3 billion.

Combined, this resulted in cash and cash equivalents of approximately EUR 0.2 billion in the reporting year, which was almost unchanged against the prior 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 continuously monitor the effectiveness of the hedges.

CORPORATE RESPONSIBILITY

- Deutsche Telekom ranks as climate protection leader
- Major sustainability potential in products and services

There is a growing social expectation for sustainable business practices. The UN specifically includes business enterprises in its appeal for sustainable development with the 17 sustainable development goals (SDG) of its Agenda 2030. We have accepted this responsibility, with the focus placed on our products and services. ICT technologies play a key role in sustainable development. Potential benefits include the ability to reduce greenhouse gas emissions, make sparing use of resources and improve healthcare coverage. We commenced the analysis of our portfolio on the basis of sustainability aspects in 2014. The result for 2016 showed that 39 percent of our revenue was generated with products and services that offer sustainability benefits. [SDG](#)

As a leading European telecommunications provider, our goal is to lead the field in sustainability; we are committed to responsible actions across our entire value chain. Our sustainability engagement is systematically geared to the expectations of our stakeholders – our customers, suppliers, employees and investors. With them, we discuss topical issues and provide regular opportunities for personal exchange. In our ongoing online survey, we identify the aspects of sustainability that are most important to our stakeholders. The survey enables participants not only to weight topics according to their relevance but also to assess our performance in the individual fields. This information is then fed back into our materiality analysis. The analysis helps us organize our sustainability activities and structure relevant reports. [SDG](#)

The following matrix shows some of the key sustainability topics from a corporate and stakeholder perspective.



SUSTAINABILITY PERFORMANCE: PROGRESS AND FORECAST

We have been using a range of metrics known as ESG KPIs (ESG stands for Environment, Social and Governance; KPI for Key Performance Indicator) to gauge our CR commitment since 2010. These performance metrics help our stakeholders evaluate our sustainability performance. They also provide a transparent basis on which we systematically and continually improve our ESG performance. The key ESG KPIs have been included as components of our annual report since 2011.

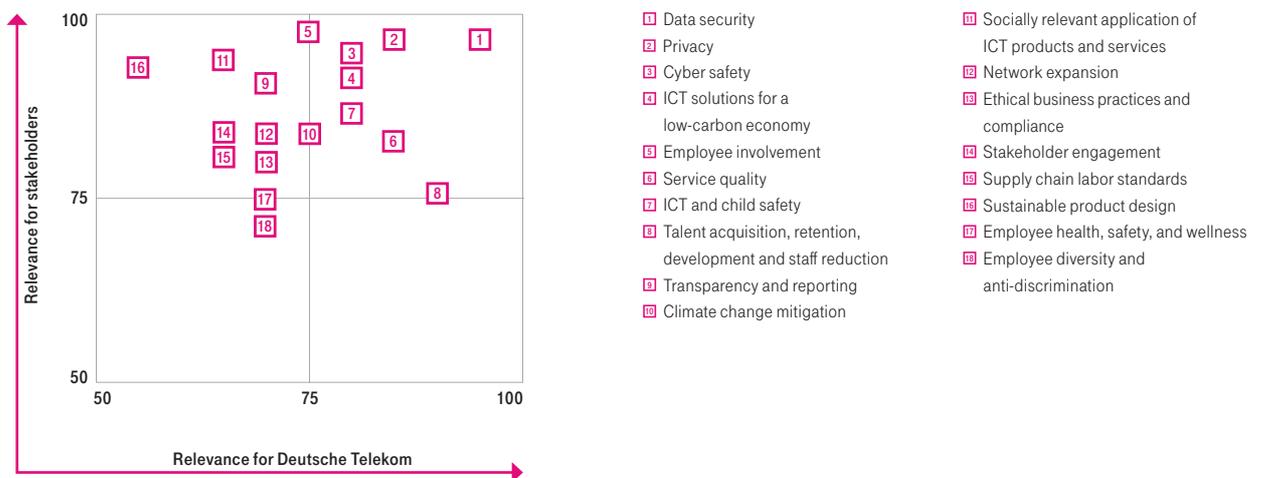
Our 2015 Annual Report forecast trends for the following ESG KPIs in 2016: Energy Consumption, CO₂ Emissions and Sustainable Procurement.

The Energy Consumption ESG KPI is calculated by setting electricity consumption in relation to revenue. The trend for this KPI was positive in 2016. It decreased slightly year-on-year as expected. Despite increasing revenue, energy consumption decreased throughout the Group in the reporting period. Given the unabated rapid growth in data traffic and ongoing network build-out, this result was achieved only through further gains in energy efficiency.

We had assumed there would be a slight decline in the CO₂ Emissions ESG KPI for 2016, i.e., a slight improvement. In fact, CO₂ emissions sank by 5 percent in the reporting period. This positive trend is mainly attributable to falling emissions from electricity consumption and from fuel consumption for our vehicle fleet.

In the case of the Sustainable Procurement ESG KPI, we exceeded the prior-year figure by an even greater margin than forecast. The share of the procurement volume that has been risk-assessed already amounts to 83 percent.

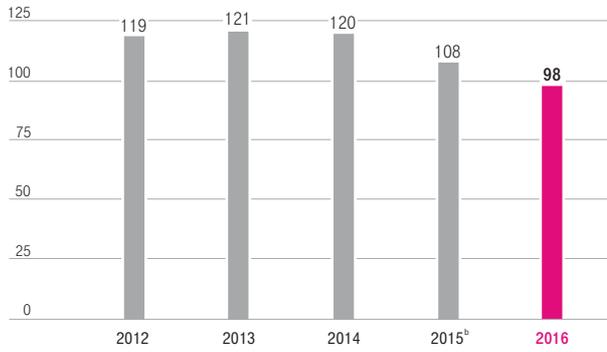
Main topics for 2016 in materiality matrix



20	Deutsche Telekom at a glance	70	Corporate responsibility
26	Group organization	77	Innovation and product development
28	Group strategy	82	Employees
31	Management of the Group	87	Significant events after the reporting period
35	The economic environment	87	Forecast
40	Development of business in the Group	97	Risk and opportunity management
52	Development of business in the operating segments	112	Accounting-related internal control system
66	Development of business at Deutsche Telekom AG	113	Other disclosures

Energy Consumption ESG KPI^a

Expressed as MPEI: electricity consumption (thousand MWh)/revenue (billions of €)



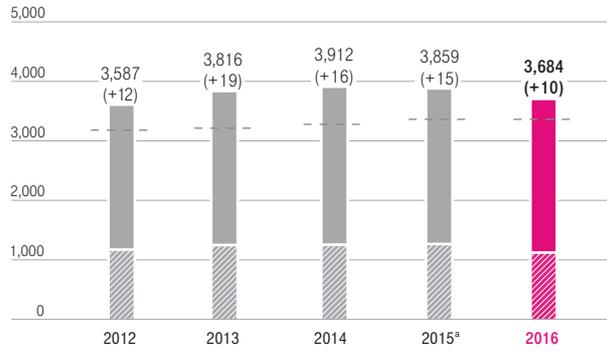
Revenue billions of €	55.7	57.8	61.9	68.6	72.4
Electricity consumption (thousand MWh)	6,624.7	6,992.9	7,424.0	7,401.6	7,107.1

■ Energy Consumption ESG KPI: Ratio of electricity consumption to relevant revenue, calculated as Monetary Power Efficiency Indicator.

^a Calculated on the basis of appropriate estimates and extrapolations.
^b Electricity consumption for 2015 adjusted slightly retrospectively (previous figure: 7,421.5) with no impact on the ESG KPI.

CO₂ Emissions ESG KPI

CO₂ emissions in thousands of metric tons
 (Changes in %, compared against 2008 base year for the climate target)



■ CO₂ emissions (Scopes 1 and 2). Emissions are measured in CO₂-equivalent values based on energy and fuel consumption employing the emission factors specified by the International Energy Agency and the Greenhouse Gas Protocol.

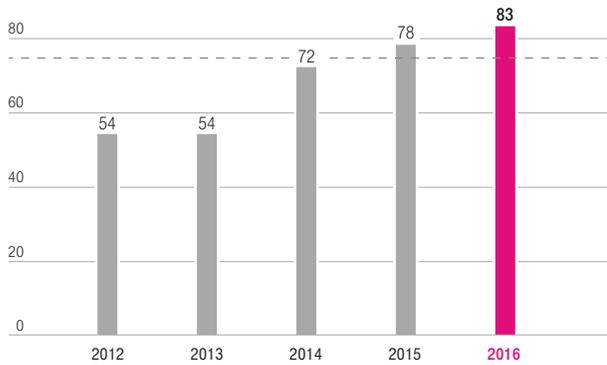
▨ T-Mobile US share

--- Relevant base year for climate target (2008)

^a CO₂ emissions adjusted slightly retrospectively (previous figure: 3,849) with no impact on the ESG KPI.

Sustainable Procurement ESG KPI

%



■ Procurement volume covered by supplier self-assessments and/or audits as a percentage of total sourcing volume.

--- Target value

We anticipate a positive development in our Energy Consumption ESG KPI for the years 2017 and 2018, with a declining trend in 2017 and a further slight decrease in 2018. This development is the result of slight savings in electricity consumption coupled with a slight increase in revenue. We expect to achieve further reductions in electricity consumption above all as we migrate our networks in Germany to IP technology and merge T-Systems data centers in various regions. Most of these savings are likely to be counterbalanced by the expansion of T-Mobile US and the accompanying rise in electricity consumption.

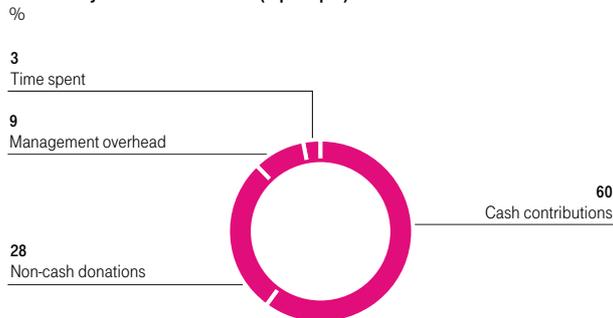
Our electricity consumption is the main driver of our CO₂ emissions. We therefore also expect a slight downward trend in our CO₂ Emissions ESG KPI in the years 2017 and 2018. One of the goals we have set ourselves as part of our integrated climate strategy for the year 2020 is to reduce CO₂ emissions throughout the Group (excluding T-Mobile US) to 20 percent below the figure for the base year 2008. The gradual network changeover to IP will make a substantial contribution here. [SDG](#)



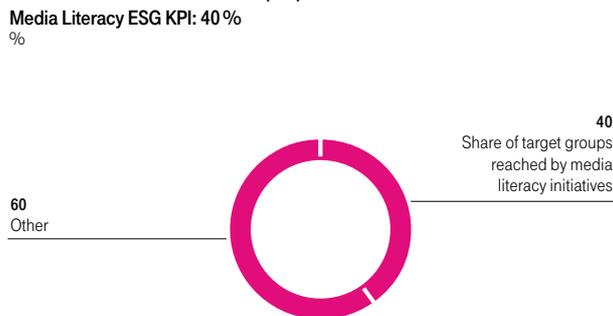
Over the next two years, we expect our Sustainable Procurement ESG KPI to remain stable at a high level.

We measure the impact of our 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. The Beneficiaries ESG KPI measures the huge number of active contributors as well as the broad target group they reach. The Media Literacy ESG KPI highlights the high percentage of projects and activities promoting the competent handling of media. It is highly relevant to us as it correlates closely with our core business.

Community Investment ESG KPI (Input Split): € 57 million

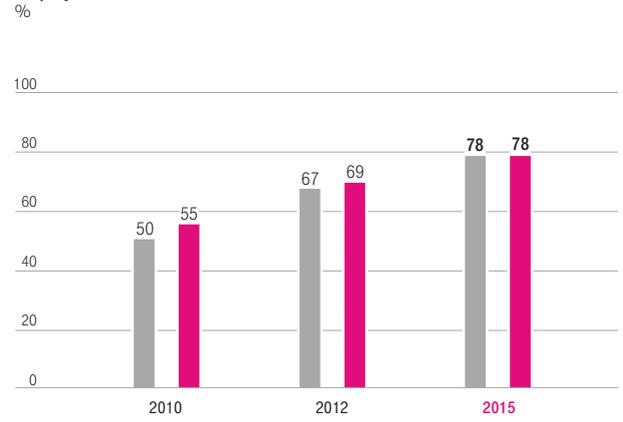


Beneficiaries ESG KPI: 15 million people



We use the Employee Identification with CR Commitment ESG KPI to determine the degree to which our staff identify with, or how satisfied they are with, our CR commitment. This is based on the Group employee survey (excluding T-Mobile US), which we conduct every two to three years; the next is scheduled for spring 2017. This ESG KPI will therefore not be reported until the next financial year. The figure for both aspects was 78 percent in 2015.

Employee identification with CR commitment



■ Deutsche Telekom makes good on its responsibility toward social and environmental commitment.
 ■ I can identify with Deutsche Telekom's commitment to social and ecological issues.

Source: Deutsche Telekom employee survey (excluding T-Mobile US)

EXCELLENT RATINGS AND RANKINGS

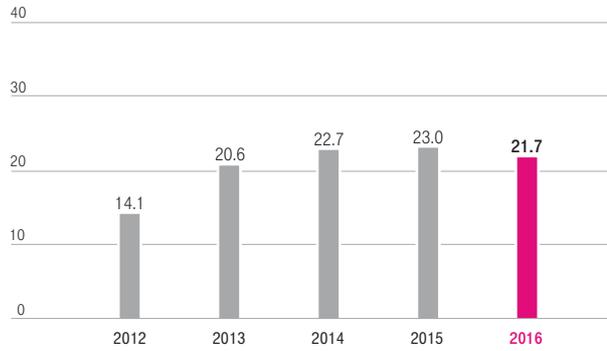
We use the Socially Responsible Investment ESG KPI to determine how the finance markets rate our sustainability activities. This indicator measures the proportion of T-Shares held by investors whose investment strategy is based not only on economic but also on the ecological and social aspects of corporate governance. In spring and fall 2016 we held a number of Socially Responsible Investment (SRI) roadshows, at which we offered to answer critical questions from our investors. In addition, we attended SRI conferences, organized conference calls and web conferences, and answered numerous direct queries from rating agencies, analysts and investors.

Our efforts to achieve greater sustainability are also paying off with investors. At the end of 2016, around 20 percent of T-Shares were owned by investors who take SRI criteria at least partly into account in their investment decisions. Almost 2 percent of T-Shares were held by investors who give priority to SRI aspects when managing their funds.

20	Deutsche Telekom at a glance	70	Corporate responsibility
26	Group organization	77	Innovation and product development
28	Group strategy	82	Employees
31	Management of the Group	87	Significant events after the reporting period
35	The economic environment	87	Forecast
40	Development of business in the Group	97	Risk and opportunity management
52	Development of business in the operating segments	112	Accounting-related internal control system
66	Development of business at Deutsche Telekom AG	113	Other disclosures

Socially Responsible Investment (SRI) ESG KPI

%



■ The Socially Responsible Investment (SRI) ESG KPI indicates the proportion of shares in Deutsche Telekom AG held by investors who take, among other criteria, environmental, social, and governance criteria into account for their investment strategy. As the basis of calculation is updated annually, year-on-year comparisons may be of limited value.

Source: Ipreo, based on Deutsche Telekom's shareholder structure as of Sept. 30, 2016

Sustainability ratings play a key role in SRI investment decisions. In line with our corporate responsibility strategy, we concentrate on specific rating agencies that we select on the basis of reputation, relevance and independence. They form the basis of the following sustainability indexes (see table below).

Listing of the T-Share in sustainability indexes/ratings

Rating agency	Indexes/ratings/ranking	Successfully listed in index				
		2016	2015	2014	2013	2012
RobecoSAM	DJSI World	✓	✓	✗	✗	✓
	DJSI Europe	✓	✓	✗	✗	✓
CDP	STOXX Global Climate Change Leaders ^a	✓	✓	✓	✓	✗
oekom research AG	"Prime" (Sector Leader ^b)	✓	✓	✓	✓	✓
Sustainalytics	STOXX Global ESG Leaders	✓	✓	✓	✓	✓
	iSTOXX 50 SD KPI	✓	✓	✓	✓	n. a.
	UN Global Compact 100	✓	✓	✓	✓	n. a.
FTSE Financial Times Stock Exchange	FTSE4Good	✓	✓	✓	✓	✓
MSCI	MSCI Global Climate	✗	✗	✗	✗	✗

✓ Successfully listed ✗ Not listed

^a Deutsche Telekom is sector leader in the DACH (Germany, Austria, Switzerland) region.

^b Based on "oekom Industry Report" (2016).

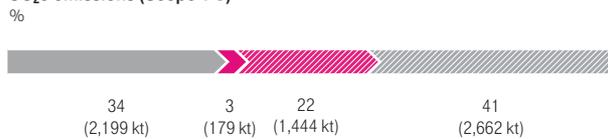
In 2016, the T-Share was again listed on leading sustainability indexes, including RobecoSAM's prominent DJSI World and DJSI Europe. Once more, our share was listed on the FTSE4Good and UN Global Compact 100 indexes. Rating agency "oekom" singled us out as the world's best telecommunications company in terms of ecological and social performance.

CLIMATE PROTECTION LEADER: CDP RANKING AWARD

We qualified for the A List of the most significant international climate protection ranking, CDP (previously Carbon Disclosure Project), which lists the companies globally leading in climate protection, for the first time in 2016. CDP commends companies that report their CO₂ emissions extremely transparently and in detail. Within CDP, we have reported not only Scope 1 and Scope 2 emissions but also Scope 3 emissions from our business operations in Germany and virtually all our relevant European subsidiaries since 2014. Scope 3 emissions are all emissions from the upstream and downstream value chains that are generated, for instance, in the supply chain or by customers. In 2016, these Scope 3 emissions in Germany remained stable compared with the prior year and totaled just under 5 million kilotons of CO₂-equivalent emissions (CO₂e emissions). The CO₂e emissions in 2015 were actually about 0.8 million kilotons CO₂ higher than reported last year. This necessary adjustment was primarily made as a result of the fact that we have refined our calculation method. The remeasurement resulted in higher emissions, especially from the purchase of investment goods such as mobile antenna masts and network routers. Detailed information on the Scope 3 emissions can be found in our 2016 CR Report, which is due for publication in April 2017.

The following chart visualizes emissions in the different Scopes from our business activities in Germany; shown as CO₂-equivalent emissions (CO₂e emissions).

CO₂e emissions (Scope 1-3)



- 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:
Emissions from the operation of Deutsche Telekom's systems, buildings, and vehicles.
- ▨ Scope 2 emissions from energy procured:
Emissions from the generation of electricity and district heating procured by Deutsche Telekom.
- ▨ Scope 3 emissions from downstream activities:
Emissions from the transport of products sold to the customer, use of products sold or leased, and disposal and recycling of products sold.

The World Wide Fund For Nature (WWF) and the CDP held us up as an example of good practice for the management of our emissions along the value chain. They commended our comprehensive approach to managing and reducing these emissions in the "Leased assets" category.

CLIMATE STRATEGY: CUT CO₂ EMISSIONS AND IMPROVE EFFICIENCY

Our integrated climate strategy is the cornerstone of our climate protection activities. We aim not only to reduce our own CO₂ footprint, but also to help our customers reduce their CO₂ emissions. To do so, we have set ourselves ambitious goals and established measurement systems to monitor them. Last year we again achieved substantial improvements in our climate protection activities. [SDG](#)

Our networks represent the basis for our products and services. Running them consumes vast amounts of energy and generates a large proportion of our CO₂ emissions. One vital element of our climate protection goal is therefore to save electricity by achieving greater energy efficiency in our network operations. For example, the Biere data center (near Magdeburg, Germany), which went into service in 2014, is one of the world's most efficient data centers. Due to the increased demand for cloud services, we are expanding the data center and, at the same time, minimizing its impact on the climate. The new facility will consume almost 30 percent less energy than comparable data centers based on an energy mix featuring a high proportion of renewable energy.

We fully support employee mobility patterns that cause as little harm as possible to the climate and the environment. In 2016 we launched a scheme whereby employees in Germany have the chance to convert part of their salary to purchase a bicycle or e-bike. This not only saves resources but also benefits their health. What is more, it reduces CO₂ emissions during rush hours. The offer has met with a broad response among our staff and over 1,400 employees have already taken advantage of the salary conversion option to obtain bikes.

When procuring company and service vehicles, we opt for efficient, low-consumption drive systems and, where economically viable, alternative drives. We achieved our goal of reducing the average CO₂ emissions generated by all newly procured company cars and service vehicles in Germany to 110 g CO₂/km by the end of 2015. In 2016 we set ourselves a new goal: 95 g CO₂/km by 2020.

EXPLOITING THE SUSTAINABILITY POTENTIAL OF OUR PRODUCTS

According to the SMARTer2030 study published by GeSI (Global e-Sustainability Initiative), information and communications technology will make it possible to avoid 20 percent of the world's greenhouse gas emissions in the year 2030. To exploit this vast potential is one of the goals of our integrated climate strategy. Take, for instance, Deutsche Telekom's AutoApp. It enables car owners to drive economically and avoid traffic jams – and, in doing so, reduces CO₂ emissions. [SDG](#)

A large number of products and technical services we offer make a major contribution toward an improved healthcare service. We provide applications that communicate patients' vital data to physicians via a secure channel on a regular basis. This makes it possible to check on patients with critical health problems – even when they are miles from a health center – and thus to improve the quality of their lives. In this way, hospitalization can be reduced, freeing up funds for improved

13 CLIMATE ACTION



12 RESPONSIBLE CONSUMPTION AND PRODUCTION



20	Deutsche Telekom at a glance	70	Corporate responsibility
26	Group organization	77	Innovation and product development
28	Group strategy	82	Employees
31	Management of the Group	87	Significant events after the reporting period
35	The economic environment	87	Forecast
40	Development of business in the Group	97	Risk and opportunity management
52	Development of business in the operating segments	112	Accounting-related internal control system
66	Development of business at Deutsche Telekom AG	113	Other disclosures

deployment in the healthcare system. Another example of telemedicine is our smart emergency call system. It allows the elderly to maintain their independence and stay put in their homes for as long as possible. [SDG](#)

Our solutions can also help conserve valuable natural resources. In 2016, T-Systems South Africa developed a smart water meter, which measures how much water is taken from a well or discharged from a water treatment facility. It also monitors and documents consumption within the supply network up to the end user. The consumption data, which is stored in the cloud, can be accessed from anywhere and provides an overview of current water usage. The system also allows potential leaks to be pinpointed and eliminated faster. [SDG](#)

COMMENDATION FOR COMMITMENT TO A SUSTAINABLE SUPPLY CHAIN

We collaborate with more than 30,000 suppliers in over 80 countries. Our sustainable procurement strategy ensures that we comply with the principles of socially and environmentally responsible procurement throughout the Group. For example, we take systematic account of sustainability criteria in our selection of suppliers. To do so, we weight sustainability with 10 percent in our tenders.

Our dedicated efforts toward sustainability in the supply chain were commended once again in 2016, when we took first prize for Best Supplier Engagement, awarded by the Ethical Business Corporation. The jury was highly impressed by our supplier development program, in which we collaborate with strategically important suppliers to develop solutions for aspects including environmental protection, working hours regulations and occupational health and safety.

Examples of key successes that we have achieved with our Chinese suppliers: [SDG](#)

- A drastic reduction in working hours was achieved for one of our suppliers – from 68 to 48 hours a week.
- For another supplier, staff fluctuation was reduced. Employees can now submit suggestions for improving their work processes. As a result, productivity increased by 34 percent.
- In one company, absences resulting from accidents at work were cut by 35 percent, while employee satisfaction improved by 4.3 percent.
- One supplier generates 16,902 metric tons less CO₂ per year, equivalent to the CO₂ emissions of 10 fully booked flights from Berlin to New York.

In 2016 we added four new suppliers to our supplier development program; it now comprises a total of eleven suppliers.

FOCUS ON DATA PROTECTION AND DIGITAL SECURITY

Our materiality analysis shows that data protection and data security are currently the top CR issues for our Company. We stand for top-quality data protection and invest in the security of our networks on an ongoing basis. Ultimately, growing digitization produces not only innovative applications but also new threats, for instance through hacker attacks. [SDG](#)

We organized the fourth Cyber Security Summit (CSS) together with the Munich Security Conference on September 19 and 20, 2016. The conference was held in Silicon Valley, USA. It was attended by around 100 high-level representatives from science, politics, business and the military. The international event focused on averting cyber attacks, the development of standards and rules in cyber space, the battle against cyber terrorism and the economic significance of cyber security. [SDG](#)

Some other examples of the contribution we made to data protection and IT security in the reporting year are detailed below:

- **“We care” app:** The “We care” app magazine is designed for end users. Three new issues were published in 2016. The issue entitled “Confidential,” for instance, shows the dangers for Internet users in day-to-day usage, and suggests ways to protect themselves. In October 2016, the app took the Econ Award as an innovative format for presenting sustainability issues.
- **Data protection one pager:** Information on data protection is often hard for non-specialists to understand. Our one pager on data protection offers customers condensed information on how their data is collected and processed. Although the document is not a substitute for the linked formal data protection declaration, to which specific legal requirements apply, it helps customers obtain basic, transparent information that is easy to understand and shows how, and how much, of their personal data is used. With this one pager, we have followed an initiative launched by the National IT Summit, supported by the Federal Ministry of Justice and Consumer Protection.
- **Teachtoday:** Our Teachtoday initiative is designed to promote media skills and safe use of the media among children and young people. During the Summit for Kids in November 2016, we discussed aspects of data protection with over 150 children. The “Media sure! But secure.” prize for safe media usage was also awarded at the event. One of the award winners is the partnership project “Das ist unser Netz! – To jest nasza siec!” (The web we want!), in which young Germans and Poles look critically at their own media use. The Teachtoday media magazine Scroller was another medium that covered the issues of data protection and social networks. Here, children learn how to move safely and skillfully through the world of digital media. The scientific association Gesellschaft für Pädagogik und Information (GPI) awarded our Teachtoday initiative the Comenius EduMedia Seal a total of three times in 2016: for the initiative as a whole, the Scroller children’s media magazine and the media obstacle course as a “computer game for the gym.” Teachtoday took gold

3 GOOD HEALTH AND WELL-BEING

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

6 CLEAN WATER AND SANITATION

16 PEACE, JUSTICE AND STRONG INSTITUTIONS

17 PARTNERSHIPS FOR THE GOALS

4 QUALITY EDUCATION



For further information on data protection at Deutsche Telekom, please refer to our annual Data Privacy Report.

twice during the FOX Awards 2016, in the categories FOX Awards and FOX Visuals. Since August 2016, Scroller has been entitled to bear the seal of recommendation awarded by Stiftung Lesen, the German Reading Foundation. [SDG](#)

CRAFTING DIGITAL RESPONSIBILITY TOGETHER

Digitization is changing our lives. Business, society and politics now all face new challenges relating to aspects that include IT security, self-determined data use and technology ethics and to which we have yet to find the answers. We are convinced that digital responsibility can only be shaped in an exchange with others. This is the reason why we continue to drive the social dialog on these issues and participate in various alliances and partnerships:

Charter of Digital Networking: The Charter of Digital Networking is an initiative that spans companies, industries and associations, and was founded at the instigation of the National IT Summit. Beside Deutsche Telekom, its initiators include other business enterprises, associations and academic institutions. The charter comprises ten principles regarding the social and economic potential of digital networking and dealings with data, infrastructures and standards. Companies that sign the charter commit themselves to these principles and, in doing so, show that they intend to contribute toward Germany's future-minded digital development. The charter stands for a shared set of values and sense of responsibility. The object is to hold a forward-looking dialog across all social levels and to create a common understanding as we move toward a digital society. Together, topical questions on digital transformation are addressed, answers developed and an exchange of experiences organized on the implementation of corporate digital responsibility. [SDG](#)

Deutschland sicher im Netz (DsiN): As the central contact for IT security and data protection, Deutschland sicher im Netz e. V. has been offering useful information and concrete support for consumers and small enterprises for the last ten years. We are members of this association and participate in numerous projects, for example supporting the Digital Neighborhood project. The object is to train volunteers, members and citizens in safe use of the Internet and IT security, and to empower them to pass on their know-how to others.

Golden Internet Prize: We consider it vital to support people of all ages in media skills and safe use of the Internet. We therefore partner the Golden Internet Prize, which commends people over 60 years of age who are skilled Internet users and support others who are only just commencing their journey in the online world.

ASSUMING SOCIAL RESPONSIBILITY

Our commitment to refugee aid began in 2015. Our focus at the time lay on providing initial support. Measures included supplying Wi-Fi to refugee reception centers, providing accommodation, recruiting civil servants for the Federal Office for Migration and Refugees, and setting up the refugees.telekom.de online portal. We continued to develop the portal with partners and re-launched it in January 2017 under the name "Handbook Germany" (www.handbookgermany.de).

We have, in the meantime, realigned our work for refugees. In 2017 it will focus on integration, above all in the labor market. To this end, we cooperated with other companies to found the "Internship PLUS direct entry" initiative in 2016. This basically addresses refugees who have job experience but whose qualifications are not accepted in Germany. We want to help these people improve their career prospects. To start with - and to help them find their way around - they participate in two phases of practical training. We subsequently assign them jobs in our Company for a limited period of two years. During this time, their integration and language courses continue. Many employees have worked in refugee aid on a voluntary basis right from the start, and our Group provides all the possible support. In future, we intend to channel their efforts into supporting new colleagues who are starting work at Deutsche Telekom. [SDG](#)

PLAY TO FIGHT FORGETFULNESS: STUDY ON DEMENTIA

The mobile game Sea Hero Quest in our Game for Good initiative paves the way for the world's biggest baseline study in dementia research. The object of the study is to help people recognize signs of dementia at an early stage and to obtain information on the effectiveness of therapies. One of the first effects of dementia is the loss of spatial orientation. Sea Hero Quest therefore collects anonymous data on the orientation patterns of healthy players. This data is expected to improve the understanding of spatial orientation and of how our brain functions. Scientists will then understand what exactly it is that suffers when dementia sets in. The anonymous game data is transmitted twice per second and stored at the high-security T-Systems data center in Germany, where it is made available to scientists. [SDG](#)

So far, over 2.7 million people around the world have played Sea Hero Quest and, in doing so, have made their special contribution to dementia research. 13 of our European subsidiaries flanked the game with communication measures, ads, media and public relations work, and thus helped "Play to fight forgetfulness" on the way to success. Comprehensive standard data on the spatial orientation of healthy people in all age groups is now available for the very first time. This standard data is seen as a key step in the development of new methods that will make timely dementia diagnosis possible.

4 QUALITY EDUCATION



17 PARTNERSHIPS FOR THE GOALS



3 GOOD HEALTH AND WELL-BEING



20	Deutsche Telekom at a glance	70	Corporate responsibility
26	Group organization	77	Innovation and product development
28	Group strategy	82	Employees
31	Management of the Group	87	Significant events after the reporting period
35	The economic environment	87	Forecast
40	Development of business in the Group	97	Risk and opportunity management
52	Development of business in the operating segments	112	Accounting-related internal control system
66	Development of business at Deutsche Telekom AG	113	Other disclosures

INNOVATION AND PRODUCT DEVELOPMENT

- Group Innovation+ – Innovation you can trust
- T-Labs: Ideas powerhouse

INNOVATION PROVIDES ANSWERS FOR THE DIGITAL FUTURE

Innovation is a cornerstone of our Group strategy. It is of crucial importance in our core business, where it is vital to assert ourselves in the face of growing competition and position ourselves as a premium provider in the long term. The basis that we use to do so has not changed, namely our high-speed broadband infrastructure for the fixed and mobile networks. We rely on digitization to offer our customers impressive experiences as they use our products and services. [SDG](#)

We want to craft the digital future and, with our innovations, give our consumer and business customers answers today to the issues of the future. As one of the leading providers of telecommunications and information technology, we are working actively to develop and establish the 5th generation mobile standard (5G). During the reporting year, we again improved our innovation capacity and further developed the organization and strategy underlying our innovation and product development activities.

GROUP INNOVATION+

Group Innovation+ was established as the central innovation unit in our Group in 2015. It orchestrates all innovation activities at Deutsche Telekom and is responsible for creating innovative cross-segment products and services. Group Innovation+ merges innovations wherever we identify synergies for the Group. Innovations occur not only within our innovation unit but also in the units working on our traditional core business and in marketing units in the national companies.

Group Innovation+ drives new areas of innovation with a longer development horizon of three to five years; the challenge it faces lies in backing the key solutions for the not-so-near future today. At the same time, our innovation unit is also directly involved in traditional product development for our operating segments. The development horizon in this case is one to two years. We strive to enrich our product portfolio with more new products and innovative solutions, which is vital if we are to position our operating segments as attractive and competitive elements in our core portfolio.

INNOVATION YOU CAN TRUST

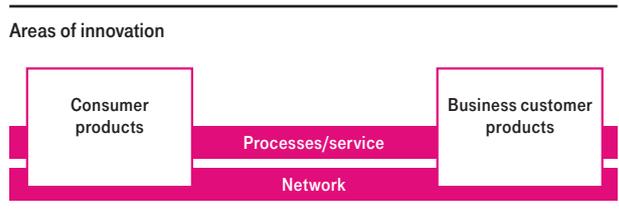
Group Innovation+ has the ambition to deliver “innovation you can trust.” The unit develops innovations that represent the essential brand attributes of our Group, namely trust and reliability. Our products and offers must naturally be safe, but “innovation you can trust” means more than this. Our innovations are designed to work easily, our products to interact seamlessly with the network, service and partner offers. It is only the combination of innovation and core business activities that will ultimately

grow successful innovations for our customers. Group Innovation+, our operating segments and other innovation-oriented areas, such as Deutsche Telekom Capital Partners (DTCP), are closely networked and regularly exchange views so that we can identify our customers’ needs and supply them with innovative products and services.

“Innovation you can trust” is also the guiding theme of our internal collaboration. We can rely on each other and know that we are working on the right ideas. Innovation cannot be prescribed. Innovation is a culture that must be practiced and nurtured. Large enterprises like our Group, especially, need a vibrant corporate culture that fosters innovation. Key elements of this culture include fast decisions and implementation on the basis of lean internal processes, freeing up creative potential, promoting and challenging new ideas, and entrepreneurial initiative.

INNOVATION FOCUS – FOUR AREAS OF INNOVATION

For innovation work to succeed, innovation activities must be geared to the Group as a whole and follow a holistic concept. We therefore rely – as the following graphic shows – on our four inter-related innovation areas: consumer products, business customer products, network/infrastructure, and processes/service.



Customers are at the focus of all our activities, regardless of whether they are consumers or business customers. We are committed to identifying customer issues, anticipating customer needs and finding innovative solutions in response.

Here, it is essential to network the individual innovation areas, especially since many innovation topics relate to more than one of the four fields, e.g., convergent offers as a key strategic principle for our consumer products. Group Innovation+ is working to integrate more services in this convergence strategy, thus increasing the attraction of offerings such as MagentaEins. In the case of business customers, our aim is to offer a simple, modular product portfolio and, at the same time, to combine our standard products intelligently with products from our partners. Our focus on the network side is on seamless, secure connectivity, above all for business customers - on a global scale and with quality differentiation. In the processes/service innovation area, we want to anticipate and respond to the requests and needs of our customers as specifically as possible and with consistent quality across all contact channels.

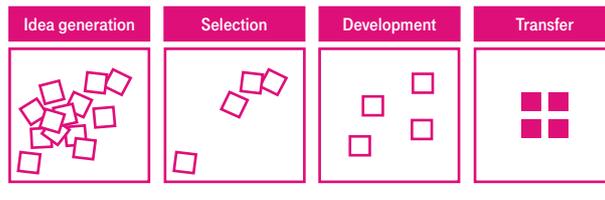
For more information on the subject of innovation, please refer to www.telekom.com/innovation-en



INNOVATION GOVERNANCE

Clear process structures give ideas the scope they need to grow and transform into innovative products and services. As the following graphic shows, innovation processes in our Company pass through four phases.

Deutsche Telekom's innovation process



- They all start with an idea – arising from market and trend research, customer feedback, from our staff in the product and innovation units, or from partnerships/collaboration with our partners.
- During the selection phase, we evaluate each idea: How easy is it to implement? How great is its potential? How high is customer interest rated?
- In the development phase, we integrate customer desires and requirements for design and handling into the product or service concept.
- Finally, the product or service is transferred to the market.

In each of the four phases, we naturally verify the extent to which the resources we use are in proportion to the anticipated result. This may well lead to development of a product being abandoned during one of the phases of the innovation process, which is a vital option, since not every good idea has the potential to become a good product or a good service. Every innovation must offer our customers added value.

Our established innovation governance concept manages innovation processes in the Group. It includes the **Portfolio & Innovation Board**, which makes sure we get our priorities right. The board identifies and selects innovation focuses for our Group and decides how they will be executed in order to define and implement an innovative product portfolio that offers maximum chances of success. In order to implement these strategic innovation focuses, we also continuously enhance our internal financing formats. This means that, with an additional innovation

budget, we can equip new innovation projects with resources at short notice and without red tape. Such financing is granted independently of annual planning periods, and therefore intensifies our focus on market and customer requirements. With these resources, we finance both centrally managed innovations, e.g., through Group Innovation⁺, and local innovation developments, e.g., directly from our operating segments. This is subject to the proviso that the product and service ideas in question are in line with our Group's central innovation focuses.

Sustainability is another of our product development drivers. The demand is growing for digital solutions that are secure, environment and climate-friendly, and offer added value for our society. We are therefore working hard not only to improve the security of our services but also focus our development work on more energy-efficient technologies that reduce CO₂ emissions, and durable, reusable products and digital solutions in the fields of e-health and e-mobility. [SDG](#)

METHODS AND CONCEPTS

Design thinking. The design thinking approach is the basis on which we tread new ground and acquire new insights. We have adopted it to ensure we differentiate ourselves from the market by offering outstanding customer experiences. Group Innovation⁺ has, for this reason, defined a standard design thinking concept. Alongside the various design thinking methods, it includes a design process which is valid for the entire Group and can be transferred to development processes already in place in our two operating segments, Germany and Europe. Scope for learning, trying out and applying the defined content is offered on our internal training platform, the Design Academy. Design thinking is establishing itself not only as a mindset within the Group but also enriches and improves actual collaboration across all Group units. Design thinking therefore produces design doing.

Creating scope for ideas. Our Digital Innovation Arena in Berlin creates the ideal scenario to produce ideas for digital life in the future. It offers first and foremost an optimal working environment, from a state-of-the-art IT infrastructure, modern premises and facilities for lively exchange which are available round the clock, through to creative rooms for relaxation. Here employees from T-Labs, from hub:raum, from the design and partnering areas work together on premises extending over around 8,000 square meters. The creative mix of people from all areas of our innovation business, ranging from entrepreneurs to developers and designers, makes the Digital Innovation Arena the hotspot for ideas in Germany.

20	Deutsche Telekom at a glance	70	Corporate responsibility
26	Group organization	77	Innovation and product development
28	Group strategy	82	Employees
31	Management of the Group	87	Significant events after the reporting period
35	The economic environment	87	Forecast
40	Development of business in the Group	97	Risk and opportunity management
52	Development of business in the operating segments	112	Accounting-related internal control system
66	Development of business at Deutsche Telekom AG	113	Other disclosures

THREE-PRONGED INNOVATION STRATEGY

To generate even greater innovation capacity, we rely not only on our own innovations but also successfully integrate new ideas from outside Deutsche Telekom. Group Innovation+ generates differentiation and growth from innovation in three different ways: from in-house developments, from partnerships and from start-up funding.

Three-pronged innovation policy



IN-HOUSE DEVELOPMENTS

In 2016, Group Innovation+ played a leading role in the further development and roll-out of various innovative products, some of which are presented below.

- **BMW ConnectedDrive.** As of 2016, users can book a Wi-Fi hotspot via our HotSpot Drive portal. The mobile hotspot makes it possible to connect up to 10 Wi-Fi-enabled devices to the high-speed Internet at the same time, without any need for SIM cards. They can be used to surf the Net worldwide. Depending on their needs, users can choose from among various different data passes and acquire them with ease. In the reporting year, we also began upgrading ConnectedDrive to LTE. An eSIM is being integrated in vehicles for the first time and can be updated over the air when the need arises.
- Our **TelekomCLOUD portal** embraces our total cloud offering for enterprises of all sizes. It offers customers software, platform and infrastructure solutions that can be configured and booked directly online. Our software-as-a-service (SaaS) business application offer ranges from traditional office applications and virus protection solutions to secure online storage and conferencing and collaboration tools from our secure data centers in Germany. The **AppDirect platform** acts as a “power strip” (Steckerleiste) for the entire Group and enables full onboarding for new solutions in fast track mode. The offer is rounded off by qualified consulting and support services provided by our certified cloud experts in the dedicated **Cloud Customer Interaction Center** established by Group Innovation+.

- Our **Voice Encryption Services** guarantee tap-proof communications on the go, while working at home or at distributed company sites. This helps companies protect themselves comprehensively from information loss as a result of eavesdropping.
- Our flexible, modular VPN service known as **Managed VPN Suite** enables rapid, easy integration of remote users, distributed sites and machines.
- Business customers benefit from our secure cloud storage: **Secure Data Drive** is encrypted and operated in compliance with Germany's privacy laws at our certified data center.

T-Labs. With our central research unit, Telekom Innovation Laboratories (T-Labs), we operate our own research and development facilities at international locations, including Berlin, Darmstadt and Bonn in Germany, Beer Sheva and Tel Aviv in Israel, and Mountain View in the United States. There, some 500 experts and scientists from a broad range of disciplines develop and test new technologies. They cooperate closely with industrial partners, international universities, and research institutions on the basis of open innovation for our operating segments. At its main Berlin site, T-Labs has been associated with Technische Universität Berlin since 2004 in one of the biggest and best-known public-private partnerships in Europe. In 2016, T-Labs focused on a range of topics including the following:



For more information on our new products, please refer to the section “Highlights in the 2016 financial year,” page 22 et seq.



- **immmr.** immmr is based on a digital carrier concept and is a new service that we launched to carry the traditional telephony and messaging product over into the digital world. Users can communicate from any device via their mobile number. This makes new products and services available, e.g., virtual phone numbers, multiple identities and group video communication. We launched immmr in the Slovak Republic in December 2016, with seven other countries scheduled to follow suit in 2017.
- **Access technologies.** T-Labs develops systems and prototypes that make it possible to effectively bundle different access technologies and assign them to the appropriate application, as we did for example in 2016 in the Well-Fi project. In it, we combine the latest Wi-Fi technologies with smart network management. As everything around us gets smarter – smartphones, smart home, smart city – it is also vital to have easy, intelligent access to the Internet at home. The growing number of network devices is making it more difficult to supply a constant high-quality Wi-Fi signal to all areas of our homes. Well-Fi guarantees outstanding Wi-Fi quality in every room; service interruptions and poor signal coverage are now things of the past. In the reporting year we launched a technical field trial with Makedonski Telekom to show how suitable Well-Fi is for day-to-day usage.
- **Intelligent cloud robotics.** There is growing demand for flexibility and efficiency in industrial manufacturing (Industry 4.0), with new application areas also emerging in the home and service environments. This presents new challenges for robotics – work performed by and with robots. Thanks to high-speed networking, secure cloud infrastructures and application functions based on artificial intelligence, robots are metamorphosing from high-quality repetitive tools to universal cognitive and collaborative tools. Embedded in the Internet of Things, they can perceive their environment, can cooperate with humans and offer benefits in a broad range of applications. As part of the Low Latency Compute initiative in our Intelligent Cloud Robotics T-Labs project, we cooperate with leading research institutions to address the economic and technical challenges presented by this development, carry out feasibility studies and develop prototypes

for industrial and service robotics. We started building a laboratory with different robot types in mid-2016 and will be making it available to potential business partners in future.

- **Smart farming.** Agricultural engineering has assumed a leading role in digitization. Connected, self-steering machines equipped with a vast number of sensors are now already in standard use. The object of the Smart Farming project, funded by the Federal Ministry for Economic Affairs and Energy as part of its Smart Service World program, is to develop open, standardizable and, at the same time, secure, robust and efficient system architectures for communication between various machines and back-end systems, and to test them in practical application scenarios. The aim is to develop a multi-vendor system concept which gives farmers maximum freedom to compile a machine estate. Farmers can then select the most suitable provider without being tied to any specific manufacturer. [SDG](#)
- **Data analytics.** In the area of data analytics, our T-Labs works on use cases, pilot projects and concepts that will enable the suitable use and analysis of big data. One example is our Data Cockpit research project, an innovative Web interface that makes the use of personal data transparent for customers. It reinforces their trust in our Company by granting them full control over their data at all times.

PARTNERSHIPS

As well as developing in-house solutions, Group Innovation⁺ repeatedly chooses to collaborate with partners on innovations, in accordance with our Group strategy. The object is to establish a broader range of innovative products and services that can be offered to customers. In doing so, Deutsche Telekom taps the vast innovative strength of Silicon Valley, Israel, Germany, and other innovation hotspots.

20	Deutsche Telekom at a glance	70	Corporate responsibility
26	Group organization	77	Innovation and product development
28	Group strategy	82	Employees
31	Management of the Group	87	Significant events after the reporting period
35	The economic environment	87	Forecast
40	Development of business in the Group	97	Risk and opportunity management
52	Development of business in the operating segments	112	Accounting-related internal control system
66	Development of business at Deutsche Telekom AG	113	Other disclosures

We would like to present some examples of these successful partnerships below. 

- We collaborate with **Zimperium** to offer companies of all sizes end-to-end protection for their mobile devices. Mobile Protect Pro offers security for mobile applications and protection from attacks over Wi-Fi and other wireless connections as well as from vulnerabilities in mobile operating systems.
- At the end of 2016, T-Mobile Czech Republic joined forces with our partner **Mojjo** to bring a connected car service to market which transforms customers' vehicles into smart cars, giving them an overview of car usage, handling and condition. Since Mojjo is an open platform, customers stand to benefit in future from other practical offers, e.g., help with finding a parking space.
- In collaboration with our partner **FON** and with over 2.5 million access points, we provide one of the largest Wi-Fi networks in Europe. FON enables customers to share their private Wi-Fi access with our other clients. This service was launched in Hungary in 2016.

START-UP FUNDING

In May 2012 Deutsche Telekom opened its incubator, a start-up support center, known as **hub:raum** in Berlin. **hub:raum** (www.hubraum.com) invests in start-ups during the early phase, supports them with co-working space and mentoring, and connects them pragmatically to our Group. **hub:raum** therefore functions as an interface between us and the world of start-ups. It is also part of our future initiative, in which we place increased focus on cooperations. During the reporting year, **hub:raum** supported four start-ups: 

- **Teraki** has developed data-reduction software for the Internet of Things (www.teraki.com). T-Systems used Teraki during a customer proof of concept to reduce big data to such an extent that it can be restored without loss even under difficult transmission conditions.
- **Contiamo** offers small and mid-sized enterprises web-based business intelligence solutions. The software consolidates diverse business information at a central location and makes it easier to analyze for specific purposes. In analyses for our Customer Touchpoint Suite we rely on the cloud-based business intelligence solution from Contiamo.
- **M2Mgo** offers a cloud-based content management system as SaaS which can be used to program and operate web apps (www.m2mgo.com). It is a cost- and time-saving toolkit for companies that makes it easy for them to develop individual web portals for the Internet of Things.

- **Flexperto** develops and markets an Internet-based SaaS software solution that goes much further than traditional videoconferencing systems and is set to become the standard software for online consulting. Flexperto combines schedule management, communication, encrypted video consulting, encrypted messaging system/instant messaging, telephone consultation, billing and customer management (www.flexperto.com).

Beside this, **hub:raum** organized the narrowband IoT prototyping program with over 35 start-ups during the Challenge Up! IoT start-up program (with Intel and Cisco) in 2016.

We have restructured our commitment in the areas of venture capital, private equity and technology innovation with our Deutsche Telekom Capital Partners group (DTCP), which was established at the beginning of 2015, and are extending it considerably. DTCP is Deutsche Telekom's investment management group and is positioned at the center of our redesigned investment concept. DTCP offers growth capital for start-ups with a proven business model, investments in mature companies, and strategic consulting in the technology, media, and telecommunications sectors. Its object is to create value for the Group, investors, portfolio companies and other stakeholders. We plan to invest a total of EUR 450 million over the next five years via DTCP. DTCP's investments have a strong financial drive. The group aims to acquire shares in companies, to see these companies grow, and to sell the shareholdings again at a profit. Choosing the most successful start-ups and collaborating closely with them leads to strategically relevant cooperation options and business relationships with the Group.

DTCP also provides advice to our strategic investment fund Telekom Innovation Pool (TIP) on investments that are primarily strategically motivated. TIP focuses its investment activities not only on external start-ups that are identified as being of major strategic relevance but also supports and implements in-house ventures as spin-offs. In this case, ideas from Deutsche Telekom are spun off as young companies, making greater entrepreneurial freedom and shorter decision paths possible. Additionally, DTCP advises DTVF (Deutsche Telekom Venture Funds GmbH) on its portfolio. The aim is to support the development of the around 55 existing investments (including through follow-up investments) and divest them at a profit.

DTCP was already conducting successful deals in its first full year in business. This involved the profitable sale of the start-ups Nexmo (to Vonage) and Replay (to Intel). DTCP also made six further venture capital investments in 2016, investing in cyber security companies SafeBreach and Fireglass, in the intelligent data traffic management systems NS1 and Aryaka, in big data analytics tool Paxata, and in the evaluate ventures fund.



For more information on our cooperations and partnerships, please refer to the section "Highlights in the 2016 financial year," page 22 et seq.



PATENTS

Patents are gaining more and more significance in the telecommunications industry. Market players and their areas of activity are changing, with a knock-on effect on our IPR (intellectual property rights) agenda. On the one hand, our Group's scope for action must be maintained. On the other hand and alongside our own research and development activities, we want to pave the way to open innovation through collaboration projects and partnerships. National and international IPRs are vital for these types of activity. We are strongly dedicated to generating our own property rights. In the reporting year, we filed 275 patent applications, taking the total number of IPRs held by the Group to around 7,900.

We pursue our intense efforts to develop and structure our IPR portfolio. This secures the value of the rights we hold and ensures they are in line with our Group's strategic objectives. We have put in place a professional patent law management process to keep our IPR assets safe. Additionally, we are represented on various standardization bodies in our industry. We manage our IPRs on the basis of cost/benefit aspects, filing only selected applications subject to a strict schedule.

processes, systems, and services. By contrast, we do not class as research and development 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 84.1 million in 2016. As the parent company, Deutsche Telekom AG bears part of the Group's research and development expenditure, the amount in this case being EUR 58 million (2015: EUR 86 million). However, this figure may not be viewed independently of the three-pronged innovation strategy referred to above – of in-house developments, innovations from outside the company and start-up funding and investments.

Our Group's investments in internally generated intangible assets to be capitalized were also up year-on-year at EUR 129.5 million compared with EUR 101.3 million for the previous year. These investments predominantly relate to internally developed software, mainly in our Systems Solutions operating segment. About 2,900 employees worked in the Group's R&D areas in 2016 (2015: approx. 2,800).

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,

Expenditure and investment in research and development

millions of €

	2016	2015	2014	2013	2012
Research and development expenditure	84.1	108.1	95.6	97.0	65.9
Investments in internally generated intangible assets to be capitalized	129.5	101.3	93.2	112.0	78.0



For more information, please refer to www.telekom.com/media/publications

EMPLOYEES

- Reorganization of work in the digitized ecosystem
- HR priorities for 2016

REORGANIZATION OF WORK IN THE DIGITIZED ECOSYSTEM

Work in the digitized ecosystem is being given a complete overhaul. The important thing will be focusing on people. Ultimately, people are pivotal for ensuring a company is moving in the right direction. Digitization creates the perfect platform for innovation. We will see new forms of collaboration and new business models, but also an increase in the automation of tasks that are currently performed by people. It is therefore crucial that our employees build their digital skills, as they are vital to our future success. In addition, we need work environments that are adapted to the respective conditions and standardized technologies that enable us to connect with each other. [SDG](#)

Leadership will also change: In the future, leadership will be more participative and more virtual because managers will not have personal access to every employee. If we want to keep pace with digitization, we must make our organizations more decision-oriented to be able to make decisions faster.

Having consistently set out our HR priorities on this basis in 2015, we continued to pursue them in the year under review:

HR PRIORITIES

1. Talent strategy and planning
2. Performance management and leadership
3. Work in the digital age
4. Skills management and qualification to meet future needs

Here are some examples of the measures we will use to implement and drive our HR priorities forward.

8 DECENT WORK AND ECONOMIC GROWTH



20	Deutsche Telekom at a glance	70	Corporate responsibility
26	Group organization	77	Innovation and product development
28	Group strategy	82	Employees
31	Management of the Group	87	Significant events after the reporting period
35	The economic environment	87	Forecast
40	Development of business in the Group	97	Risk and opportunity management
52	Development of business in the operating segments	112	Accounting-related internal control system
66	Development of business at Deutsche Telekom AG	113	Other disclosures

OUR HR WORK BASED ON THE HR PRIORITIES

1. TALENT STRATEGY AND PLANNING

Our talent management team is getting ready for the digital future. We want to make work even more global, digital and efficient in future and, to achieve this, attract and recruit the best talents to our Company. This is key if we are to drive digitization forward and safeguard our future success. Throughout the world, our Group is always on the lookout for creative minds and technology-minded people who can help us create the digital future.

The digital future needs networking. Our talent management approach encourages young talent to take responsibility for their own careers, using modern (IT) tools and processes. To foster networking, we offer face-to-face networking events and a shared online platform. We support and encourage job rotation, particularly across departments, functions, and countries.

As employers, it is our mission to become ever more attractive and raise our brand profile. In recent years, our attractiveness as an employer has grown thanks to a creative, target group-specific presence in social media and a raft of attention-grabbing initiatives in the talent market. The 2016 Online Talent Communication Study confirmed this by naming our career pages the best employer website in Germany. We want to build on this success internationally, consolidating our leading position as a top employer of choice in mature job markets, while also boosting our reputation in growing markets.

2. PERFORMANCE MANAGEMENT AND LEADERSHIP

Lead to win. Based on our new leadership principles “Collaborate,” “Innovate,” and “Empower to Perform,” coupled with our Guiding Principles, we rolled out our leadership model “Lead to win” in 2014. By 2016, all executives had been practicing “Lead to win” for two years. The key features of this model are a continuous dialog between executives and their superiors on performance and development issues, a direct link between performance assessment and incentives, and personal development paths. In particular, executives are urged to identify and leverage innovation potential. It is also important to establish a working culture in which everyone continually challenges the status quo and reflects on his or her own conduct, and where no-one is afraid to make mistakes. We foster and demand a culture of personal responsibility, thereby creating lasting value for the Group.

Embracing diversity. For over a decade now, we have sustainably and comprehensively supported diversity throughout the Group. We integrate all aspects of diversity, and reinforce them with a host of flagship projects, such as our initiatives for the advancement of women.

Additionally, in 2015 we launched a campaign on unconscious bias which gave new impetus to greater diversity within the Company. This campaign continued in the reporting year, with measures designed to raise employees’ awareness, as well as practical workshops on unconscious bias and stereotypes. On June 7, 2016, we hosted the Rhine-Ruhr Diversity Network’s 4th German Diversity Day under the motto “Diversity makes the difference – cultural skills for business success” at our company headquarters in Bonn, another example of our commitment to diversity issues. [SDG](#)

Gender equality remains a particular concern of ours, having campaigned relentlessly on this issue for many years. Back in 2010, we introduced a quota of 30 percent of leadership roles worldwide to be filled with women. Our highly successful pilot scheme in 2015 trained women to take on national and international supervisory board mandates, and met with widespread acceptance. The follow-up program, launched in fall 2015, was also open to men, and ended in June of the reporting year. In total, these two programs trained 60 women for a demanding supervisory board role. Tried-and-trusted measures, such as managing the advancement of women throughout the entire talent acquisition strategy, and specifically targeting women, for example with a website exploring opportunities for women, advertisements, and trade fairs designed for women as the target group, remain pivotal to our strategy for advancing women. The percentage of female members of our supervisory boards in Germany also rose from 17.7 percent in 2010 to 34.8 percent in December 2016. The proportion of women representing the shareholders in our international supervisory boards likewise increased from 7.4 percent in 2010 to 23.4 percent at the end of 2016. [SDG](#)

Work-life balance. We offer a range of attractive opportunities to help our employees strike a better balance between their work and home lives. Our place in the finals of the German Erfolgsfaktor Familie 2016 company competition, which underlines the importance of the family as a success factor, is indicative of our Company’s commitment to a sustainable, family-friendly HR policy. The one-year Family Manager pilot project in Germany ended as planned in mid-2016 and was very positively received by the press and in-house. We will be using the findings from this project to improve our range of offerings to help balance work and home life. The focus in 2016 was on “caring for relatives.” By further enhancing our flexible working conditions, we create additional freedom and scope for our employees. In 2016, the sector-specific collective agreement on mobile working laid the foundations for establishing mobile working as a new format within the company. In early 2016, we also began offering our employees lifetime work accounts from which they can fund a leave of absence or top up a part-time salary.



Employee satisfaction. Our image as an attractive employer continues to grow, and our employees are scoring us ever more highly (see table below). In the most recent Group-wide employee survey of 2015 (excluding T-Mobile US), our commitment index score, already at a high level, increased to 4.1 (on a scale of 1.0 to 5.0). We also conduct regular pulse surveys to obtain feedback from our employees. The November 2016 pulse survey saw an extraordinarily high level of participation: 73 percent of employees took this opportunity to give us their feedback. And this feedback was positive, with 73 percent of respondents saying they were satisfied with the company. Not content to rest on our laurels, we are continuing with a raft of initiatives to further improve our corporate culture and increase employee satisfaction. We expect the high approval rates to remain stable in the next employee survey in 2017.

Employee satisfaction (commitment index)^a

	2015	2012
GROUP (excluding T-Mobile US)	4.1	4.0
Of which: Germany	4.1	4.0
Of which: international	4.0	3.9

^a Commitment index according to the most recent employee surveys in 2015 and 2012.

4 QUALITY EDUCATION



3 GOOD HEALTH AND WELL-BEING



Health. Our health management strategy is designed to maintain our employees' health and performance. We view occupational health and safety legislation as minimum requirements and encourage our employees to take responsibility for their own health. Our managers play an important role in fostering an appropriate corporate culture. [SDG](#)

3. WORK IN THE DIGITAL AGE

The world of work is changing: Demographic change, individual life and career models, together with the digitization of society and industry pose fresh challenges for companies – as well as offering new opportunities. This inspires our HR work, culminating in a range of measures on “people,” “places,” and “technologies.”

People: The transformation of corporate organization and culture is accelerating, driven by the pace of digitization. Transformation is not an end in itself, but an expression of the relentless demand for adapted, more flexible work forms and operating structures. The robotization of transactional and repetitive activities creates new options for “human” value creation, which in turn brings with it fresh challenges for HR work. The result is a growing proportion of knowledge-based work that can be performed at any time and from any location. The way that solutions are devised and services are delivered is also changing. The escalating complexity of products and business processes demands new problem-solving techniques and approaches. Our Design Thinking – a systematic approach to complex problems – is setting new standards as a technique for innovation and transformation. Our new HR unit Digital & Innovation has held more than 60 workshops, attended by over 2,250 employees, familiarizing them with new techniques such as Design Thinking. Digital & Innovation and Telekom Design also brought together their Design Thinking activities within the Telekom Design Academy in the year under review, to accommodate the growing Group-wide demand for these types of new working techniques and collaborative formats.

In 2016, more Magenta MOOC (Massive Open Online Courses) were made available to all our employees worldwide. Under the motto “Go Digital,” participants were invited to tackle ten real-life digitization challenges, and deepen their understanding of digitization and design thinking. [SDG](#)

Places: We realize how important it is to adapt our employees' working environment to accommodate the changes posed by digitization. Our Future Work program is designed to establish flexible working methods, a leadership culture based on trust, and opportunities for mobile working. This is complemented by modern, open office environments and shared work zones. We are committed to the ongoing transformation of our corporate culture from one based on face time to one based on results. In 2016, we forged ahead with the expansion of our Future Work workspaces. By the end of the reporting year, some 9,000 employees in Germany were already working under Future Work principles, and this figure is expected to rise to around 18,000 by the end of 2018.

Technologies: Standardizing and simplifying our HR processes, and making them more customer-centric, is a pivotal concern for us and another milestone in our efforts to automate HR work. The roll-out of our HR Suite IT system across the Group is a key element of this plan, enabling us to provide standardized Group-wide HR processes such as recruitment, professional development, and performance management on a single platform.

20	Deutsche Telekom at a glance	70	Corporate responsibility
26	Group organization	77	Innovation and product development
28	Group strategy	82	Employees
31	Management of the Group	87	Significant events after the reporting period
35	The economic environment	87	Forecast
40	Development of business in the Group	97	Risk and opportunity management
52	Development of business in the operating segments	112	Accounting-related internal control system
66	Development of business at Deutsche Telekom AG	113	Other disclosures

We are aware that we must promote virtual collaboration if we are to maximize performance. Our in-house social network, which replaced our intranet and the Telekom Social Network, provides the basis for this. In 2016, our multiple award-winning social network, You and Me (YAM), boasted more than 120,000 users across the Group, heralding a new era in internal communications. As a central, dialog-based communications platform, YAM is the company's nervous system. We have also upgraded the direct communications channel with Board of Management level via YAM, with many of our Board members and executives using blogs, vlogs, chats and discussion forums to communicate. In addition, most employees worldwide now have access to various options for collaboration between departments and across national borders in the form of video and web conferencing services, live broadcasts and chat/messaging services, and knowledge-sharing via secure data rooms.

In May 2016 we set up the HR Digital & Innovation HR unit, a Group-wide competency and consulting team focusing on the targeted digital transformation of our organization, people and culture. HR Digital & Innovation has developed the digital@work model for our Group's digital transformation, combining the key cornerstones of leadership, learning, workspaces, methodologies, culture, workplace equipment and organization, together with a raft of dedicated measures. The unit introduced the Digital Guide, an innovative assistant designed to optimize virtual collaboration, into our YAM ecosystem. The digital format Leadership App (LEAP) focuses on topical management development issues such

as innovation and ambidexterity (the ability of an organization to be both efficient and flexible), offering quick, innovative guides to a range of topics in the form of inspirational videos and short digital teaching modules, all with an appealing design.

4. SKILLS MANAGEMENT AND QUALIFICATION TO MEET FUTURE NEEDS

Skills management is an increasingly important topic for our Company. In 2016, we agreed with our employee representatives to conduct a strategic Skills Management pilot project at four of our business units in Germany. Alongside retraining, inter-departmental exchange and new hires, it is also important to promptly identify any skills gaps in the workforce, and take action to ensure long-term upskilling, such as university courses, if we are to secure competitiveness and employment.

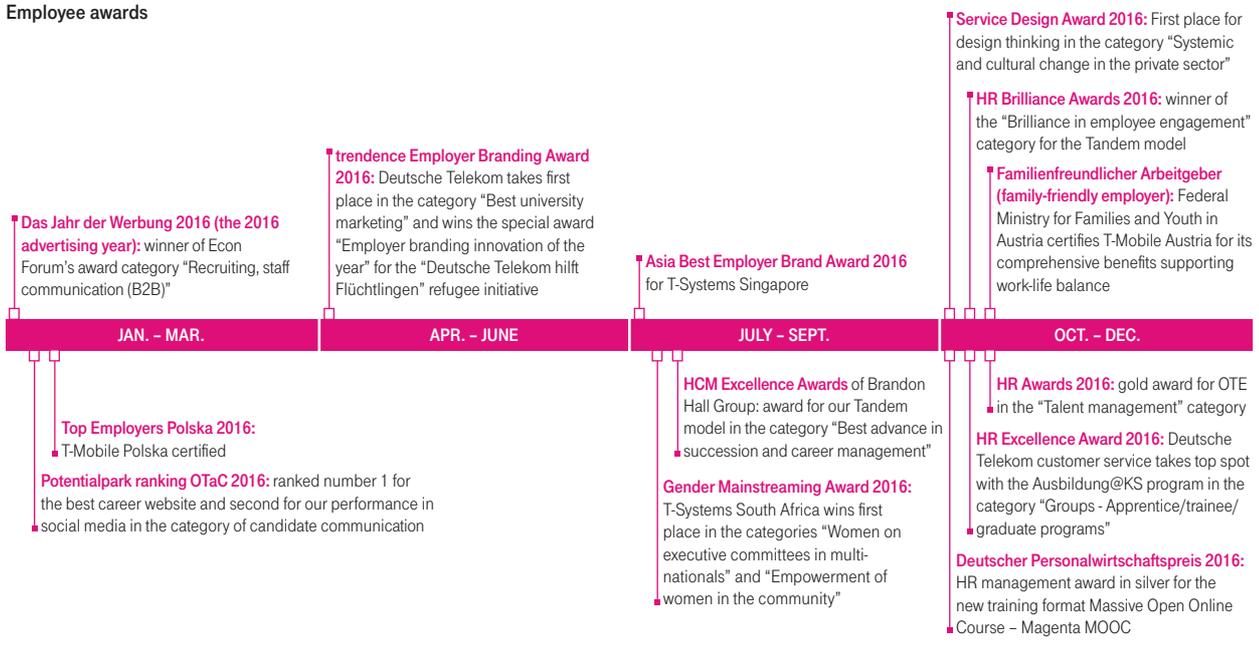
The right training measures are vital in closing the skills gaps. We are extending our use of digital learning formats, which can be accessed at any time and from any location. Modern formats such as simulation exercises, video-based training modules, and learning games have significantly increased the acceptance of digital learning formats. [SDGI](#)

Awards

In 2016, we again received multiple awards for our HR work. The following graphic shows a selection of awards and prizes.



Employee awards



HEADCOUNT DEVELOPMENT

The Group's headcount decreased by 3.1 percent compared with the end of 2015. Our segments showed countervailing trends to some extent: Measures to enhance efficiency, a slowdown in recruitment in the operating units, and higher take-up of early retirement for civil servants reduced the headcount in the Germany operating segment. As a result of the concentration of innovation-related activities across the Group, 480 employees of our Systems Solutions operating segment were transferred to our Germany operating segment as of January 1, 2016. Overall, the number of employees in our Germany operating segment decreased by 3.6 percent. The total number of employees in the United States operating segment increased by 1.3 percent at December 31, 2016 compared to December 31, 2015, due to an increase in network, backoffice and

administrative, and customer support employees to support the growing T-Mobile US customer base. In our Europe operating segment, staff levels decreased by 4.4 percent compared with December 31, 2015, mainly as a result of efficiency enhancement measures in the operating segment, especially in Hungary, Romania, Croatia, Macedonia and Poland. In our Systems Solutions operating segment, the headcount decreased by 1.8 percent. This was mainly due to staff restructuring measures in Germany and abroad, and the aforementioned transfer of 480 employees to the Germany operating segment. The number of employees in the Group Headquarters & Group Services segment was down by 11.8 percent compared with the end of 2015, mainly due to the continued staff restructuring.

WORKFORCE STATISTICS

Headcount development

FTEs in the Group	Dec. 31, 2016	Dec. 31, 2015 ^a	Dec. 31, 2014 ^a	Dec. 31, 2013	Dec. 31, 2012
TOTAL	218,341	225,243	227,811	228,596	229,686
Of which: Deutsche Telekom AG	22,571	26,205	28,569	29,577	30,637
Of which: civil servants (in Germany, with an active service relationship)	15,999	18,483	19,881	20,523	21,958
Germany operating segment	66,142	68,638	68,754	66,725	67,497
United States operating segment	44,820	44,229	39,683	37,071	30,288
Europe operating segment ^a	48,883	51,125	53,499	53,265	57,937
Systems Solutions operating segment ^a	43,724	44,504	46,244	49,540	52,106
Group Headquarters & Group Services	14,772	16,747	19,631	21,995	21,858
BREAKDOWN BY GEOGRAPHIC AREA					
Germany	104,662	110,354	114,749	116,643	118,840
International	113,679	114,888	113,061	111,953	110,846
Of which: other EU member states	59,456	60,710	63,032	63,939	63,244
Of which: rest of Europe	2,581	2,945	3,127	3,238	9,422
Of which: North America	45,364	44,803	40,346	37,856	31,037
Of which: rest of world	6,278	6,431	6,556	6,920	7,143
NATURAL ATTRITION %	4.0	4.4	4.2	4.2	-
Of which: Germany %	1.4	1.3	1.4	1.8	2.0
Of which: international %	8.1	9.3	8.6	7.6	-
PRODUCTIVITY TREND^b					
Net revenue per employee thousands of €	331	306	275	262	250

^a Business customer operations at Magyar Telekom in Hungary, which had previously been organizationally assigned to the Systems Solutions operating segment, have been managed and reported under the Europe operating segment since January 1, 2016. Comparative figures have been adjusted retrospectively. 

^b Based on average number of employees.



For more information, please refer to Note 31 "Segment reporting" in the notes to the consolidated financial statements, page 192 et seq.

20	Deutsche Telekom at a glance	70	Corporate responsibility
26	Group organization	77	Innovation and product development
28	Group strategy	82	Employees
31	Management of the Group	87	Significant events after the reporting period
35	The economic environment	87	Forecast
40	Development of business in the Group	97	Risk and opportunity management
52	Development of business in the operating segments	112	Accounting-related internal control system
66	Development of business at Deutsche Telekom AG	113	Other disclosures

Personnel costs

billions of €

	2016	2015	2014	2013	2012
Personnel costs in the Group	16.4	15.8	14.7	15.1	14.7
Of which: Germany	9.8	9.4	9.1	9.4	9.2
Of which: international	6.6	6.4	5.6	5.7	5.5
Special factors ^a	1.6	1.2	0.9	1.4	1.2
Personnel costs in the Group (adjusted for special factors)	14.8	14.6	13.8	13.7	13.5
Net revenue	73.1	69.2	62.7	60.1	58.2
ADJUSTED PERSONNEL COST RATIO %	20.3	21.2	22.0	22.7	23.2
PERSONNEL COSTS AT DEUTSCHE TELEKOM AG UNDER GERMAN GAAP	3.5	2.9	2.8	3.1	3.3

^a Expenses for staff-related measures.

SIGNIFICANT EVENTS AFTER THE REPORTING PERIOD

For information on events after the reporting period, please refer to Note 42 "Events after the reporting period" in the notes to the consolidated financial statements, pages 216 and 217, and to the notes to the annual financial statements of Deutsche Telekom AG as of December 2016.

For 2017, 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 2017.
- **Adjusted EBITDA** is expected to reach some EUR 22.2 billion in 2017, up from EUR 21.4 billion in the reporting period.
- **Free cash flow** should increase from EUR 4.9 billion in 2016 to around EUR 5.5 billion.

FORECAST¹

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

We will remain on a course of successful growth and already differentiate ourselves from the competition by having the most modern and best networks. Going forward, we want to continue meeting our customers' expectations with more integrated offerings. This strategic focus confirms our target of being the "leading telecommunications provider in Europe" and matches our financial targets up to 2018. As communicated at our Capital Markets Day in February 2015, for the period from 2014 through 2018, we are aiming for the following compound annual growth rates (CAGR):

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

In order to safeguard our success in the long term, we combined our Group-wide technology and innovation activities in a new Board department (Technology and Innovation) as of January 1, 2017. We also established Group Development, a new operating segment that will actively manage, and enhance the value of, selected equity investments of the Group. The planning for the coming years, and thus the statements made in the following forecast, already take this new Group structure into account.



For further details of changes in the structure of the Group as of January 1, 2017, please refer to the section "Group organization," page 26 et seq.

ECONOMIC OUTLOOK

According to its economic forecast dated January 2017, the International Monetary Fund (IMF) expects to see global economic growth of 3.4 percent in 2017 and 3.6 percent in 2018. This faster growth rate will be fueled by the economic upswing in emerging and developing economies as well as in the United States. We continue to expect a stable economic trend in our core markets. The economies in Germany, the United States, and most of the countries of our Europe operating segment are enjoying positive growth rates; even the United Kingdom will see moderate growth if the exit from the European Union proceeds in an orderly fashion. These growth rates will be driven by buoyant private consumer spending and rising investment spending. This positive economic trend will also lead to a moderate recovery in employment markets.

Forecast on the development of GDP and the unemployment rates in our core markets for 2017 and 2018

%

	GDP for 2017 compared with 2016	GDP for 2018 compared with 2017	Unemployment rate in 2017	Unemployment rate in 2018
Germany	1.4	1.5	6.1	6.2
United States	2.2	2.3	4.7	4.6
Greece	1.3	2.0	22.5	21.6
Romania	3.5	3.3	4.7	4.6
Hungary	2.6	2.7	5.0	4.8
Poland	3.0	3.2	8.2	7.7
Czech Republic	2.5	2.6	5.4	5.4
Croatia	2.5	2.5	13.9	13.5
Netherlands	1.6	1.6	6.9	6.9
Slovakia	3.3	3.1	9.4	9.1
Austria	1.3	1.5	6.0	5.7
United Kingdom	1.2	1.3	5.1	5.2

Source: Bloomberg Consensus, Consensus Economics, Oxford Economics; January 2017.

MARKET EXPECTATIONS

GERMANY

Although the market for telecommunications services in Germany recorded a slight decline of 0.4 percent in 2016 (source: Bitkom), EITO (European Information Technology Observatory) expects it to stabilize in 2017. This anticipated trend is attributable to increasing demand for mobile data volumes and higher speeds as well as to demand from business customers for high-bit-rate connectivity, both of which will potentially compensate for declining revenue from traditional fixed-network telephony. In terms of a broader-based ICT market that includes IT services as well as telecommunications, EITO expects to see growth of 1.5 percent in 2017. This will be mainly attributable to growth of 2.7 percent in the IT market, especially due to strong demand for services for business customers (e.g., outsourcing, project business, consulting) as well as in software (virtualization and Software as a Service).

Innovative integrated products and attractive supplementary services – such as TV and music options, and smart home – 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 are also setting ourselves apart from other providers with our download and upload bandwidths, and the mobile data volumes we include in our rate plans.

The mobile communications market in Germany is dominated by three providers, each with its own network infrastructure, who deploy 4G/LTE technology to ensure that the majority of the population has access to high-speed mobile Internet. The fixed-network broadband market is a different matter: It is characterized by a large number of competitors – from national to regional providers – with differing infrastructures. We are assuming not only that the number of cable network operators will continue to rise, but that the number of providers of DSL and fiber-optic networks will increase, too.

20	Deutsche Telekom at a glance	70	Corporate responsibility
26	Group organization	77	Innovation and product development
28	Group strategy	82	Employees
31	Management of the Group	87	Significant events after the reporting period
35	The economic environment	87	Forecast
40	Development of business in the Group	97	Risk and opportunity management
52	Development of business in the operating segments	112	Accounting-related internal control system
66	Development of business at Deutsche Telekom AG	113	Other disclosures

UNITED STATES

The U.S. mobile market continues to be characterized by intense competition among the major mobile carriers. Competitive factors within the U.S. mobile market include dynamic changes in pricing, voice market saturation, service and product offerings, customer experience, network quality, development and deployment of technologies, availability of spectrum licenses, and regulatory changes. The mobile postpaid market in the United States is embracing device financing options, such as T-Mobile US' equipment installment plans and device leasing through JUMP! On Demand, allowing customers to subscribe for wireless services separately without the purchase of or payment for a bundled device. Additionally, data services continue to be a growth driver despite the high level of competition, supporting further network investment by the major mobile carriers in the US mobile market.

EUROPE

The next two years are expected to see a slight contraction in traditional telecommunications business in our European markets. Analysys Mason, an industry analyst, forecasts declines of 1.1 percent in 2017 and 0.9 percent in 2018. Persistent competitive and price pressure – in particular from new providers, such as Digi in Hungary and SWAN in Slovakia, who pursue an aggressive pricing policy – will have a negative impact on the markets of our Europe operating segment. As far as fixed-network business is concerned, the expected ongoing upward trend in the broadband and pay-TV markets will only partially make up for the declines in voice telephony. Competition between the traditional telecommunications industry and alternative broadband providers, e.g., cable network operators, will likely intensify, especially due to further mergers with mobile network operators. We also expect to see further substitution of traditional telecommunication services such as text messaging and voice telephony by Internet-based service providers (OTT players), along with a corresponding increase in data volumes.

The trend toward integrated business models, i.e., the convergence of fixed-network and mobile offerings (FMC), will probably continue in Europe. As a result, the markets for fixed- or mobile-only network operators look set to shrink. At the same time, we expect to see growing pressure – especially on mobile-only providers – to expand their infrastructures to include the access technologies that are currently absent, whether through the establishment of their own networks or via partnerships and/or mergers.

The economic parameters in our European markets will possibly continue to improve during the forecast period. Oxford Economics, an industry analyst, expects all the countries in this operating segment to post GDP growth and lower unemployment rates over the next few years. Fiscal interventions like those in Greece will have negative effects on telecommunications markets. Decisions taken by national regulators and the European Union will be another negative factor impacting markets, and our revenue streams, in the coming year. Depending on what form it ultimately takes, the EU Roaming Regulation, in particular, could have considerable negative consequences when it comes into force in June 2017.

SYSTEMS SOLUTIONS

The ICT market is expected to see renewed growth in the next two years in line with the recovery of the global economy. Persistent cost pressure and intense competition will remain features of the ICT market. 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.

We estimate that the ICT markets will develop along divergent paths in the telecommunications and IT services market segments.

- **Telecommunications:** The highly competitive telecommunications market remains challenging. Innovative change, intense competition, ongoing price erosion, and the interventions of national regulators are all likely to diminish total market revenues, even though both mobile data services business and the Internet of Things will continue to grow in the coming years.
- **IT services:** After strong growth in the reporting period, we expect the market for IT services to continue growing steadily in 2017 and 2018. At the same time, the market is undergoing a radical transformation, e.g., due to ongoing standardization, demand for smart services, and the changes being wrought by cloud services in the outsourcing segment. Further challenges have arisen in the shape of ongoing digitization, the growing importance of ICT security, big data, and increasing mobility. Traditional ICT business is likely to decline due to price competition, while cloud services, mobility, and cyber-security should record double-digit growth. Against this backdrop, we intend to continue increasing our investment spending in growth markets such as digitization, cloud services, cyber-security, and intelligent network solutions for the healthcare sector or the automotive industry.

GROUP DEVELOPMENT

The Group Development operating segment we established on January 1, 2017 covers a number of different markets, mainly those in which our companies T-Mobile Netherlands and Deutsche Funkturm (DFMG) are active.

- The mobile communications market in the Netherlands has been marked by high price and competitive pressure for quite some time, and these conditions look set to continue. One of the main trends contributing toward this is the growing convergence of fixed-network and mobile products (FMC). The merger of Vodafone and Ziggo, for instance, has created another strong and ambitious nationwide FMC provider alongside incumbent KPN. In particular, the trend toward convergence products should also keep up the pressure on mobile-product prices that has been around for some time. What is more, both the strong discount segment, comprising mobile providers' secondary brands, and MVNOs should continue to make for lively competition.

- With some 27,000 locations, DFMG is the biggest provider of passive wireless infrastructure for mobile communications and broadcasting in Germany. Mobile communications are by far the company's largest business area. Over the next two years, we anticipate that demand for additional network capacities will rise, which in turn should increase demand from mobile network operators for extensions to existing mobile sites or for the construction of new ones. This positive trend is likely to be partially offset by the ongoing consolidation of our customer Telefónica's network, shrinking VHF demand from broadcasters, and gradual decommissioning of the public authorities' analog network.

EXPECTATIONS FOR THE GROUP

Expectations up to 2018. We expect to continue achieving profitable growth in the coming years. Revenue and adjusted EBITDA should increase at Group level in 2017. That will provide us with a good basis to achieve our financial ambitions by 2018 – as communicated at our Capital Markets Day in February 2015.

We expect our **financial performance indicators** to develop as follows in 2017 and 2018:

- **Revenue** should rise year-on-year in both 2017 and 2018. This growth will be attributable in particular to systematic implementation of the Un-carrier strategy in our United States operating segment and the associated ongoing increase in customer numbers over the next two years.
- **Adjusted EBITDA** is expected to come in at around EUR 22.2 billion in 2017 and to rise in 2018 due to the expected upward revenue trend over the same two-year period.
- **EBITDA** is expected to decline year-on-year in 2017, as is **EBIT**. This is due to a special factor: The proceeds from the sale of our stake in the UK mobile joint venture EE had enhanced the corresponding 2016 figure. We expect EBITDA to edge up in the course of 2018, primarily a result of the expected positive trend in adjusted EBITDA. A stable development in EBIT is expected in 2018 compared with the prior year.
- **Return on capital employed (ROCE)** is expected to decrease strongly in 2017 because ROCE in 2016 had benefited from the sale of our stake in the UK mobile joint venture EE and because new spectrum in the United States will increase the asset base in 2017. ROCE is unlikely to change in 2018 and is expected to be on a par with our predicted weighted average cost of capital (WACC).
- Our investments – in terms of **cash capex** (before spectrum investments) – are expected to amount to around EUR 12.0 billion in 2017. Over the next two years, too, 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. In 2018, capital expenditure is expected to decrease slightly.

- **Free cash flow** (before dividend payments and spectrum investment) is expected to reach around EUR 5.5 billion in 2017 and rise sharply again in 2018. It will thus make a crucial contribution toward keeping our relative debt – measured as the ratio of net debt to adjusted EBITDA – within the target corridor of 2 to 2.5 in 2017 and 2018.

- At the end of 2016, the **rating agencies** Standard & Poor's, Fitch, and Moody's gave us ratings of BBB+, BBB+, and Baa1 respectively, thus placing us in the group of solid investment grade companies. The outlook from all three rating agencies was "stable." Maintaining a solid investment grade rating within the A- to BBB range will enable us to retain unrestricted access to the international financial markets and is thus a key component of our finance strategy.

The purpose of our Debt Issuance Program is to put us in a position to place issues on the international capital markets at any time and at short notice. In addition, our Commercial Paper Program enables the issue of short-term papers on 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.

Repayments of bonds and loans in the amount of EUR 3.3 billion and EUR 2.6 billion will fall due in 2017 and 2018, respectively. In order to refinance our maturities and maintain the liquidity reserve, we plan to issue new bonds in various currencies. A large part of the refinancing necessary for 2017 has already been executed in January 2017. The exact manner of these potential transactions depends on developments in the international finance markets. We will also cover part of our liquidity requirements by issuing commercial paper.

We intend to continue leveraging economies of scale and synergies through suitable partnerships or appropriate acquisitions in our footprint markets. There are no plans, however, to make major acquisitions or 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** and ambitions for 2018 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. The pro-forma figures for 2016 and the expectations for the Group and/or the operating segments for 2017 and 2018 are based on the Group structure applicable as of January 1, 2017. The expectations expressed here may change if the economic situation deteriorates or there is any unforeseen government or regulatory intervention. All trends denote year-on-year changes. To indicate the intensity and trends of our forecasts, we refer to the following assessment matrix: strong decrease, decrease, slight decrease, stable trend, slight increase, increase, strong increase.

20	Deutsche Telekom at a glance	70	Corporate responsibility
26	Group organization	77	Innovation and product development
28	Group strategy	82	Employees
31	Management of the Group	87	Significant events after the reporting period
35	The economic environment	87	Forecast
40	Development of business in the Group	97	Risk and opportunity management
52	Development of business in the operating segments	112	Accounting-related internal control system
66	Development of business at Deutsche Telekom AG	113	Other disclosures

Financial performance indicators

		Results in 2016	Pro forma for 2016 ^a	Expectations for 2017 ^{b, c}	Expectations for 2018 ^{b, c, d, e}	Ambition up to 2018 ^{b, d}
NET REVENUE						
Group	billions of €	73.1	73.2	increase	increase	CAGR 1–2 % ⁱ
Germany	billions of €	22.0	21.8	stable trend	slight increase	
United States (in local currency)	billions of USD	37.3	37.3	strong increase	increase	
Europe	billions of €	12.7	11.5	slight decrease	stable trend	
Systems Solutions	billions of €	7.9	7.0	stable trend	increase	
Group Development	billions of €	–	2.4	stable trend	stable trend	
PROFIT (LOSS) FROM OPERATIONS (EBIT)						
	billions of €	9.2	9.2	decrease	stable trend	
EBITDA						
	billions of €	22.5	22.5	decrease	slight increase	
EBITDA (ADJUSTED FOR SPECIAL FACTORS)						
Group	billions of €	21.4	21.4	22.2	increase	CAGR 2–4 % ⁱ
Germany	billions of €	8.8	8.2	8.4	slight increase	
United States (in local currency)	billions of USD	9.5	9.5	10.2	increase	
Europe	billions of €	4.1	3.8	3.7	slight increase	
Systems Solutions	billions of €	0.6	0.5	0.5	increase	
Group Development	billions of €	–	0.9	0.9	stable trend	
ROCE						
	%	5.7		strong decrease	stable trend	ROCE > WACC ^j
CASH CAPEX^f						
Group	billions of €	11.0	11.0	12.0	slight decrease	CAGR 1–2 % ⁱ
Germany	billions of €	4.2	4.0	increase	slight decrease	
United States (in local currency)	billions of USD	4.7	4.7	increase	stable trend	
Europe	billions of €	1.7	1.6	stable trend	stable trend	
Systems Solutions	billions of €	1.1	0.4	increase	increase	
Group Development	billions of €	–	0.3	increase	decrease	
FREE CASH FLOW (BEFORE DIVIDEND PAYMENTS AND SPECTRUM INVESTMENT)						
	billions of €	4.9	4.9	5.5	strong increase	CAGR ≈ 10 % ⁱ
RATING						
Standard & Poor's, Fitch		BBB+		from A- to BBB	from A- to BBB	from A- to BBB
Moody's		Baa1		from A3 to Baa2	from A3 to Baa2	from A3 to Baa2
OTHER						
Dividend per share ^{g, h}	€	0.60		Dividend based on free cash flow growth Minimum € 0.50	Dividend based on free cash flow growth Minimum € 0.50	Dividend based on free cash flow growth Minimum € 0.50
EPS (adjusted for special factors)	€	0.89		decrease	strong increase	≈ 1
Equity ratio	%	26.2		25 to 35	25 to 35	25 to 35
Relative debt		2.3 x		2 to 2.5 x	2 to 2.5 x	2 to 2.5 x

^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 On a comparable basis.

^c Strato and tofino are included in the expected figures.

^d Forecasts for 2018 were made on the basis of the International Financial Reporting Standards (IFRSs) currently applicable, i. e., without taking account of the changes in IFRS 9, IFRS 15, and IFRS 16, in particular. 

^e Based on an unchanged business model.

^f Before spectrum investment.

^g The indicated expectation regarding the dividend per share refers to the respective financial year indicated.

^h Subject to approval by the relevant bodies and the fulfillment of other legal requirements.

ⁱ Average annual growth rates in the period between 2014 and 2018.

^j Weighted average cost of capital.



For information on standards, interpretations, and amendments issued, but not yet to be applied, please refer to the section "Summary of accounting policies" in the notes to the consolidated financial statements, page 133 et seq.

Non-financial performance indicators

		Results in 2016	Pro forma for 2016 ^a	Expectations for 2017	Expectations for 2018
GROUP					
Customer satisfaction (TRI*M index)		70.2		slight increase	slight increase
Employment satisfaction (commitment index) ^b		4.1		stable trend	stable trend
FIXED-NETWORK AND MOBILE CUSTOMERS					
GERMANY					
Mobile customers	millions	41.8	41.8	increase	strong increase
Fixed-network lines	millions	19.8	19.8	slight decrease	slight decrease
Of which: retail IP-based	millions	9.0	9.0	strong increase	strong increase
Broadband lines	millions	12.9	12.9	increase	increase
Television (IPTV, satellite)	millions	2.9	2.9	strong increase	strong increase
UNITED STATES					
Branded postpaid	millions	34.4	34.4	strong increase	increase
Branded prepay	millions	19.8	19.8	increase	increase
EUROPE					
Mobile customers	millions	51.7	48.0	slight decrease	increase
Fixed-network lines	millions	8.7	8.5	stable trend	decrease
Of which: IP-based	millions	5.2	5.0	strong increase	strong increase
Retail broadband lines	millions	5.6	5.4	increase	increase
Television (IPTV, satellite, cable)	millions	4.0	4.0	increase	increase
SYSTEMS SOLUTIONS					
Order entry	billions of €	6.6	7.1	increase	increase
ESG KPIS					
CO ₂ Emissions ESG KPI	thousands of metric tons	3,684		slight decrease	slight decrease
Energy Consumption ESG KPI ^{c, d}	MPEI	98		decrease	slight decrease
Sustainable Procurement ESG KPI	%	83		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 Commitment index as per the 2015 employee survey.

^c Calculated using fact-based estimates and/or extrapolations.

^d MPEI describes electricity consumption in thousands of MWh/revenue in billions of euros.

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

In both 2017 and 2018, we intend to achieve a moderate improvement in **customer loyalty/satisfaction** – which is measured using the TRI*M index performance indicator.

Having already achieved a high level of 4.1 – on a scale of 1.0 to 5.0 – on the **commitment index** in the 2015 employee survey, and in view of the results of the pulse surveys conducted in 2016, we expect the positive response of our employees regarding our Company to remain stable in the next employee survey, which is scheduled for 2017. 

Our planning is based on the exchange rates in the following table.

Exchange rates

Pound sterling	GBP	0.82/€
Croatian kuna	HRK	7.53/€
Polish zloty	PLN	4.36/€
Czech koruna	CZK	27.03/€
Hungarian forint	HUF	311.39/€
U.S. dollar	USD	1.11/€

 For detailed information on our ESG KPIS and our expectations, please refer to the section "Corporate responsibility," page 70 et seq.

20	Deutsche Telekom at a glance	70	Corporate responsibility
26	Group organization	77	Innovation and product development
28	Group strategy	82	Employees
31	Management of the Group	87	Significant events after the reporting period
35	The economic environment	87	Forecast
40	Development of business in the Group	97	Risk and opportunity management
52	Development of business in the operating segments	112	Accounting-related internal control system
66	Development of business at Deutsche Telekom AG	113	Other disclosures

The following table contains a summary of our model calculations and analyses of the key potential external factors.

Factors that may affect results

Premises	Current trend	Impact on results
ECONOMY:		
Macroeconomic trends in Europe (incl. Germany)	steady	○
Macroeconomic trends in the United States	improving	○
Inflation in Europe (incl. Germany)	improving	○
Inflation in the United States	improving	○
Development of USD exchange rate	improving	+
Development of exchange rates of European currencies	steady	○
REGULATORY/STATE INTERVENTION:		
Regulation of mobile communications in Europe (incl. Germany)	steady	○
Regulation of the fixed network in Europe (incl. Germany)	steady	○
Additional taxes (in Europe/the United States)	steady	○
MARKET DEVELOPMENT:		
Intensity of competition in telecommunications sector in Europe (incl. Germany) and the United States	steady	○
Intensity of competition in telecommunications sector in the United States	steady	○
ICT market	improving	○
Data traffic	improving	○

+ positive
 ○ unchanged
 - negative

Expectations for Deutsche Telekom AG. The development of business at Deutsche Telekom AG as the parent company of the Group is reflected particularly in its service relationships with our subsidiaries, the results from our subsidiaries' domestic reporting units, and other income from subsidiaries, 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.

Based on the aforementioned expectations for our operating segments and the resulting effects, and taking existing retained earnings into account, Deutsche Telekom AG also expects to distribute a dividend of at least EUR 0.50 per dividend-bearing share for the financial years 2017 to 2018, subject to approval by the relevant bodies and the fulfillment of other legal requirements. Relative growth of free cash flow is also to be taken into account when measuring the amount of the dividend for the specified financial years.

In relation to the dividend for the 2016 financial year, we are considering once again offering our shareholders the choice of converting their dividend into Deutsche Telekom AG shares instead of having it paid out in cash.

EXPECTATIONS FOR THE OPERATING SEGMENTS

GERMANY

We are currently implementing a comprehensive transformation program for our Germany operating segment and our aim is to largely conclude this program by the end of 2018. Our goal is to secure our position as the leading integrated telecommunications provider in the German market by providing innovative and competitive products and services.

The organizational structure of the Germany operating segment changed as of January 1, 2017, with control of DFMG (Deutsche Funkturm) passing from that operating segment to the newly established Group Development operating segment.

In the fixed network, we want to offer the best customer experience with fiber-optic products. We are paving the way for this with our integrated network strategy. We are building an IP-based network with high transmission bandwidths so that, in the future, we can offer our customers competitive high-speed lines, e.g., by migrating our VDSL network to vectoring technology. In addition, we are investing heavily to offer greater coverage and even higher speeds in rural areas as well. We are also using innovative products for this purpose – like our hybrid router, which combines the transmission bandwidths of fixed-network and mobile communications, thus enabling much higher transmission speeds. SDG

In 2014, we were the first provider in Germany to market an integrated fixed-network/mobile (FMC) product: MagentaEins. We have gradually added new products to this range, such as an FMC offering specifically for our business customers. When designing our products, we pay particular attention to high quality and a simple rate plan structure. In addition, our multiple-brand strategy in mobile communications allows us to address the entire customer spectrum – from smart shoppers through to premium customers.

We want to secure an ever larger share of the growing TV market. To this end, we are investing in our IPTV platform and winning new customers with attractive content and services. As part of our IPTV strategy, we offer appropriate TV services to our wholesale partners and the housing sector.

In both mobile communications and the fixed network, we want to remain the market leader in Germany in terms of revenue. As our customers' demand for bandwidth is constantly growing, we intend to continue investing extensively in broadband networks, innovative products, and customer service. Our success in this area has proven us right: Our broadband revenues are constantly growing and customer satisfaction levels, too, are on a positive trajectory. We now want to cement these two positive trends. "Progress through digitization" will be one of the drivers of this development.



Overall, revenue in our Germany operating segment should stabilize in 2017 – despite the strong impact of regulation on our core business. We also expect to see a substantial increase in both broadband and TV revenues, and IP offerings as well as growth in business customer operations. The positive trend in IT and cloud business is expected to continue, making up for the ongoing negative trend in fixed-network telephony and text messaging. 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, e.g., in the housing sector. Further, we want to provide new services for our customers in collaboration with partners.

We expect to see a slight year-on-year increase in revenue in 2018. We want to continue consolidating our position as market leader in the mobile and broadband area. Thanks to the outstanding quality of our network and the progress being made in fiber-optic roll-out, we anticipate greater demand for mobile and broadband products as well as substantial growth in the number of broadband, TV, IP, high-speed, and hybrid lines. We would like to continue offering best customer experience with integrated services (e.g., MagentaEins), and with digital products and service experiences. Our IT and technical service revenues should help feed this trend. In addition, we want to make advances with the smart home business and offer further M2M and security services. We expect growth in cloud services to continue. Wholesale business revenue should stabilize thanks to strong demand for our contingent model.

We expect adjusted EBITDA in our Germany operating segment to increase slightly in 2017 and again in 2018, accompanied by a steady improvement in margins. Growing revenues as well as savings in indirect costs – especially from a reduction in shared functions and from increased productivity – will be the main factors in this trend. On the basis of the new Group structure as of January 1, 2017, we are forecasting an adjusted EBITDA margin of around 39 percent in each of the next two years.

Our course is set for innovation and growth: While we will continue to promote investments in new technologies with even greater 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., FTTC, super vectoring, FTTH, 4 x 4 MIMO, 5G). At the same time, we want to roll out our fiber-optic network, also in areas near local exchanges, e.g., on the back of the “More broadband for Germany” initiative. We intend to participate in funding programs – such as the German government’s program for broadband expansion – and continue the efficient migration to IP and BNG. Hence we expect cash capex to increase in 2017 and then to decline slightly in 2018. The progress made in our investment program should lead to lower capital expenditure in subsequent years.

UNITED STATES

In 2017, 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 through a strong mid-band spectrum position supplemented by low-band spectrum in key metropolitan areas and a nationwide fourth-generation LTE 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.

T-Mobile US expects continued strong increases in branded postpaid customers in 2017 and a further increase in 2018. In branded prepay customers we expect a continued increase in 2017 and 2018. 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 a strong increase in total revenues in U.S. dollars in 2017 and a further increase in 2018. Revenue is expected to be positively impacted by continued customer growth momentum.

For 2017 and 2018, T-Mobile US expects an increase – in U.S. dollars – in adjusted EBITDA. As a result of the significant growth in customers over the past year, revenue growth is expected to outpace increases in expense. Additionally, T-Mobile US expects continued focus on cost saving initiatives.

However, continued investment in the network and increased spending for marketing of the T-Mobile US brand will likely impact adjusted EBITDA. Competitive pressures may also significantly affect expected revenues and adjusted EBITDA in U.S. dollars. Exchange rate fluctuations may significantly affect revenues and adjusted EBITDA in euros in 2017 and 2018.

Excluding expenditures relating to spectrum, T-Mobile US expects higher cash capex in U.S. dollars in 2017 and beyond as it continues to expand its 4G/LTE network.

20	Deutsche Telekom at a glance	70	Corporate responsibility
26	Group organization	77	Innovation and product development
28	Group strategy	82	Employees
31	Management of the Group	87	Significant events after the reporting period
35	The economic environment	87	Forecast
40	Development of business in the Group	97	Risk and opportunity management
52	Development of business in the operating segments	112	Accounting-related internal control system
66	Development of business at Deutsche Telekom AG	113	Other disclosures

EUROPE

The organizational structure of the Europe operating segment changed as of January 1, 2017. Operational management of the Netherlands subsidiary was transferred to the Group Development operating segment, while the new Board department Technology and Innovation, which will be reported on in the Group Headquarters & Group Services segment, assumed responsibility for the GNF (Global Network Factory) and Group Technology units, and the Pan-Net companies.

In some footprint countries of our Europe operating segment, the situation on the market remains difficult. We nevertheless want to defend our strong market position and expand it where possible. In the case of our integrated companies, our approach depends on the position of the respective company in its market: We are thus working to consolidate our market leadership in the fixed network and in mobile communications, or using our strong position in the fixed network to strengthen our mobile business with convergent products. We want to systematically transform our mobile-centric companies into integrated enterprises.

On our way to becoming Europe's leading telecommunications provider, we will continue to rely on our technology leadership over the next two years. With its pan-European all-IP network (Pan-Net), Deutsche Telekom has created a simplified, standardized network for the centralized and efficient production of innovative services for all the countries in the region. This network requires all our subsidiaries to migrate to IP and, at the end of 2016, Hungary became the fifth national company in our Europe operating segment to all but complete this process. [SDG](#)

We want our customers to benefit, too, from shorter times to market for new and innovative services. Pan-Net went live at the end of the reporting period. It will put us in a position to create a digital product portfolio, including applications for simple, seamless connectivity – whether users are at home or on the move. We are also enhancing our communications services with new and innovative elements, e.g., state-of-the-art messaging, voice, and video services.

Revenue from our TV and entertainment services continued to grow steadily in the 2016 financial year. A successful content and product campaign is in place to secure our strong market position in Greece despite the economically challenging situation there. Over the next two years as well, we expect our subsidiaries to post further revenue growth in the TV segment. An important measure implemented in 2016 to enhance future efficiency and growth was the establishment of a stronger, centralized content and product team. Our international team

will negotiate, for example, key international media rights in the future. In addition, we intend to combine our product development activities so as to be able to implement new and additional functions in our TV markets faster and more cost-effectively. There will also be a stronger focus on factoring existing customer wishes into product development. That includes, for instance, the enhanced presentation of our content via a new, more intuitive user interface as well as easy access to all relevant TV content regardless of location, time of day, or device.

One aim of our integrated network strategy is to make further advances in the fiber-optic roll-out in our fixed network. Our strategy in Greece has been to focus on rolling out optical fiber up to the street cabinets, complemented by vectoring technology as from 2017. In the other integrated companies, we have been investing in the FTTH roll-out for a number of years now, and plan to continue doing so in combination with FTTC and vectoring. Our target is for the integrated national companies to provide 50 percent of households with FTTx at speeds of up to 100 Mbit/s.

We also want to fulfill our customers' desire for more mobile bandwidth, which is why we plan to take part in further spectrum auctions in the years ahead. Our investments in mobile communications are focused on two areas: expanding LTE reach and implementing LTE Advanced technology in order to increase network capacity. This will make transmission rates of over 300 Mbit/s possible. In 2016, we succeeded in covering 84 percent of the population in the countries of our Europe operating segment with LTE and are thus well on track to achieve our goal. By 2018, we also want to achieve network coverage of between 75 and 95 percent in further countries. 5G, the next mobile standard, is within reach. Initial tests with 5G-precursor LTE Advanced pro (4.5G) have been successfully completed in Austria, Croatia, Greece, and Poland.

We have continued expanding our portfolio for business customers, adding high-performance ICT and cloud services. Our MagentaOne Business brand, in particular, was positioned in the European subsidiaries and marketed with considerable success. In the future, too, we will remain focused on this portfolio of convergent products, which unite the fixed network, mobile communications, and cloud applications. This offers additional customer benefit in the area of security and intelligent collaboration, especially when assisting small and medium-sized enterprises with the digital transformation. We also intend to intensify our efforts to position ICT and M2M/IoT networking, which got off to successful start in the reporting period. This will increasingly target and support Smart Cities initiatives in municipalities in Central and (South-) Eastern Europe. [SDG](#)



In the next two years, we expect to acquire more customers in our Europe operating segment, with the successful launch of the MagentaOne convergence brand contributing toward this growth. As a consequence, we expect the number of TV and broadband lines to rise in 2017 and 2018. The number of mobile customers is likely to decline slightly year-on-year in 2017. This is primarily attributable to the prepay registration regulations the regulatory authority in Romania plans to introduce in 2017 – without these new regulations, the number of mobile customers would likely remain stable year-on-year in 2017. The number of mobile customers should rise again in 2018. Voice telephony in the fixed network is likely to be replaced more and more by mobile communications, a trend that should again have a negative impact on fixed-network business in the next two years. We consequently expect the number of fixed lines to remain stable in 2017 and to decline in 2018.

Changes in legislation, for example regarding taxes and duties, and national austerity programs may have a negative impact on our revenue and earnings in the next two years. As was the case in the prior year, developments in the fiscal situation in Greece could have an adverse effect on our revenue, earnings, and our ability to invest in this national company. Changes in exchange rates could also affect our earnings on a euro basis.

On the basis of these assumptions and parameters, we expect revenue in our Europe operating segment to decline slightly in 2017 – on a like-for-like basis, i. e., based on the pro-forma figures for 2016. This presupposes constant exchange rates, certain assumptions as regards regulation, market players and spectrum auctions, and an unchanged organizational structure. We expect revenues to stabilize in 2018. As mentioned, we plan to maintain our high level of investment in our integrated networks through 2017 and 2018 – which will keep the development of cash capex stable.

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 enhance our productivity and cut our indirect costs. We expect to post adjusted EBITDA of around EUR 3.7 billion in 2017, i. e., slightly below the prior-year level, and to see a slight increase in 2018.

SYSTEMS SOLUTIONS

In line with our Group strategy, we want to “lead in business.” As part of our transformation program of recent years, we divided our operational organization into three divisions: the IT Division and the TC Division, which are responsible for traditional IT and telecommunications services, and the Digital Division, which is clearly focused on new growth areas like the digital transformation and the Internet of Things. We also finished setting up the Telekom Security unit in 2016. Our aspiration with this unit, which began operating on January 1, 2017, is to become the market leader for cyber-security. Even though we have largely completed the restructuring initiated by our transformation program, we are still in the transformation phase.

We are among the top providers in the European IT market. Our very high levels of customer satisfaction are a key element in maintaining this position in the long term and in taking us a step closer to our goal of becoming the No. 1 in cloud computing by 2018.

Although cost pressure remains high, our aim is to achieve profitable growth with traditional IT services, systems integration, and outsourcing. On top of that, we are successfully differentiating ourselves from our competitors in more and more business areas. We are building on our lead in the digital economy and also relying increasingly on platform business and scalability. Partnerships are the core element of our growth strategy. By building out our networks, we can offer international, integrated connectivity and shape the digital transformation of key industries with new business models – as new cloud services and our comprehensive cloud portfolio underscore. Together with our partners we have created a cloud ecosystem, which brings together state-of-the-art technical products from global market leaders and specialist providers on our platforms. We have also expanded our portfolio of dynamic services: Customers can book infrastructure, SAP applications and much more as needed and pay only for what they use. We already have 50 partner companies that market their products together with us. The corresponding services are made available from our high-security data centers, such as the one in Magdeburg/Biere. Magdeburg/Biere is one of the few data centers in the world from which competing cloud providers offer their services – and that gives us a clear competitive edge.

We want to expand our international telecommunications business with business customers. On our way to becoming Europe's leading telecommunications provider, we are concentrating on customers in Germany, Switzerland, Austria, Spain, Scandinavia, the United Kingdom, the Netherlands, and Belgium. Our TC Division is expanding its sales in these countries and extending our range to include innovative services such as Managed LAN, Unified Communications, and IP VPN. We also want to win over customers internationally with consistent offerings, new products, and competitive prices – and all-IP migration and cloud services offer the best opportunities to achieve this.

As of January 1, 2017, we changed the structure of our Group. The main reason for the change was the transfer of Telekom IT from our Systems Solutions operating segment to the Group Headquarters & Group Services segment. On a like-for-like basis, i. e., based on pro-forma figures for 2016, we expect revenue and adjusted EBITDA (around EUR 0.5 billion) for our Systems Solutions operating segment to remain stable in 2017 and order entry to grow, due to the ongoing transformation. In 2018, we expect order entry and revenue to increase at segment level, and we expect adjusted EBITDA to rise as a result of increased profitability, in both cases compared with the prior year.

GROUP DEVELOPMENT

The Group Development operating segment was established on January 1, 2017. We expect to see a stable revenue trend in this operating segment in 2017 and 2018. Adjusted EBITDA is anticipated to remain stable in 2017, coming in at around EUR 0.9 billion. We expect the stable development in adjusted EBITDA to continue in 2018. The competitive situation in the Netherlands remains challenging. Here we are pursuing a new strategy to stabilize the downward EBITDA trend, which continued in 2016. The key elements of this strategy are a repositioning of the core brand T-Mobile and more efficient management of costs. Further, we completed the acquisition of Vodafone's fixed-network business in the Netherlands in December 2016. While this will enable us to enter the market for fixed-network and convergence products, it will also entail a considerable amount of integration work.

20	Deutsche Telekom at a glance	70	Corporate responsibility
26	Group organization	77	Innovation and product development
28	Group strategy	82	Employees
31	Management of the Group	87	Significant events after the reporting period
35	The economic environment	87	Forecast
40	Development of business in the Group	97	Risk and opportunity management
52	Development of business in the operating segments	112	Accounting-related internal control system
66	Development of business at Deutsche Telekom AG	113	Other disclosures

An increase in capital expenditure for networks is likely to support implementation of the strategy for T-Mobile Netherlands in 2017. In the coming years, we also expect capital expenditure to increase at DFMG, primarily due to the ongoing build-out of Telekom Deutschland's mobile network. After the high levels of capital expenditure in the Netherlands in 2017, the corresponding figure in 2018 should be lower.

GROUP HEADQUARTERS & GROUP SERVICES

In 2017 and 2018, we plan to continue our cost-cutting measures and further optimize our processes and structures in the Group Headquarters & Group Services segment. The resulting savings will enable us not only to offer services to the other segments in a more cost-effective manner, but also to make a contribution toward improving earnings. Following establishment of the Board department Technology and Innovation on January 1, 2017, which unites our cross-segment network, innovation and IT activities of the units Global Network Factory, Group Technology, and Pan-Net (from our Europe operating segment) and Telekom IT (from our Systems Solutions operating segment) are being transferred to the Group Headquarters & Group Services segment. In 2017 and 2018, the Board department Technology and Innovation is likely to post ongoing IT development expenses in Germany as well as additional expenses and further capital expenditure for the development of innovative business ideas. In addition, there will be costs for the ongoing establishment of centralized production platforms as part of our Europe-wide Pan-Net project. Part of these expenses will be offset by synergies from the creation of the new Board departments and by positive effects of the restructuring on earnings.

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, adjusted EBITDA, ROCE, cash capex, and free cash flow. 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 imponderabilities that might influence Deutsche Telekom's ability to achieve its objectives are described in the section "Risk and opportunity management," page 97 et seq. of the combined management report, and the "Disclaimer," page 232 at the end of the Annual Report. Should these or other uncertainties and imponderabilities 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.

RISK AND OPPORTUNITY MANAGEMENT

- Risk early warning system
- Identification of opportunities

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 2016 compared with the previous year. Our major challenges particularly include the regulatory factors, intense competition, and strong price erosion in the telecommunications business. As it stands today, Deutsche Telekom'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 statement of financial position, 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 Company and our shareholders by analyzing new market opportunities.

RISK AND OPPORTUNITY MANAGEMENT SYSTEM

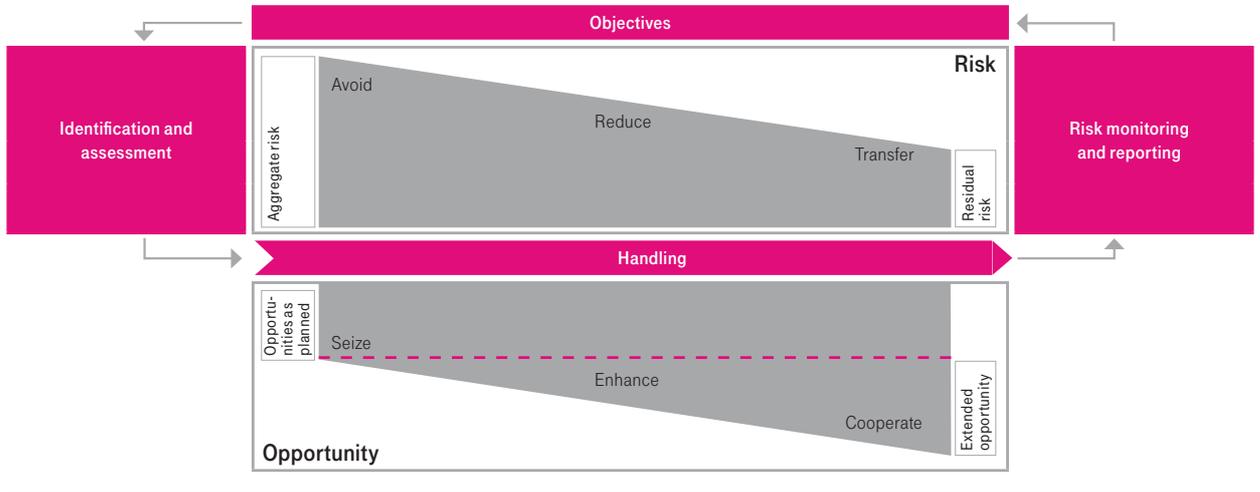
As one of the world's leading providers in the telecommunications and information technology industry, we are subject to all kinds of uncertainties and change. In order to operate successfully in this ongoing volatile environment, we need to anticipate any developments at an early stage and systematically identify, assess, and manage the resulting risks. It is equally important to recognize and exploit opportunities. We therefore consider a functioning risk and opportunity management system to be a central element of value-oriented corporate governance.

The need for a risk management system arises not only from business management requirements, but also from regulations and law, in particular § 91 (2) of the German Stock Corporation Act (Aktiengesetz – AktG). The 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 all 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.

We base our system on an established standard process (see the following graphic). 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 action to be taken, e.g., reducing risks or seizing opportunities. The respective risk owner implements, monitors, and evaluates the associated measures. All steps are repeatedly traversed 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 31 000 “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 risk early warning systems and conforms to the German Corporate Governance Code.

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 the necessary transparency during the investment process and the consistency of investment planning and decisions in our Group and operating segments. They also provide decision-making support for the Board of Management and the Board of Management Assets Committee. This process additionally includes the systematic identification of strategic risks and opportunities.

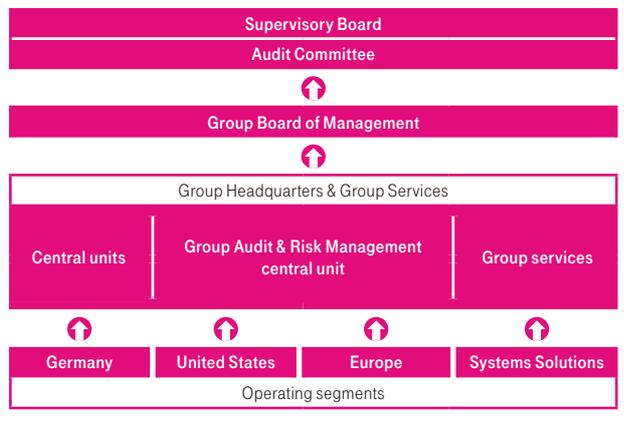
ORGANIZATION OF RISK MANAGEMENT

The Group Risk Management unit provides methods for the risk management system applied Group-wide and the associated reporting system. Our Germany, United States, Europe, and Systems Solutions operating segments are connected to the central risk management system via their own risk management systems. The relevant risk owners in the operating segments and central Group units are responsible for managing and reducing risks.

As of January 1, 2017, our organizational structure changed: We created a new Technology and Innovation Board of Management department. Going forward, we will report on this department in our Group Headquarters & Group Services segment. We will also report on our new Group Development operating segment as of the start of 2017.

For more information, please refer to the section “Group organization,” page 26 et seq.

Risk management



20	Deutsche Telekom at a glance	70	Corporate responsibility
26	Group organization	77	Innovation and product development
28	Group strategy	82	Employees
31	Management of the Group	87	Significant events after the reporting period
35	The economic environment	87	Forecast
40	Development of business in the Group	97	Risk and opportunity management
52	Development of business in the operating segments	112	Accounting-related internal control system
66	Development of business at Deutsche Telekom AG	113	Other disclosures

RISK IDENTIFICATION AND REPORTING

Each operating segment produces a quarterly risk report in accordance with the standards laid down by the central Risk Management unit 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 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.

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 of the Supervisory Board also examines this report at its meetings. If any unforeseen risks arise outside regular reporting of key risks, they are reported ad hoc.

In addition to the quarterly risk report, we use additional tools for monitoring and analyzing risks, in which we collect a large number of early-warning and economic indicators, e.g., on macroeconomic, political, and legal developments in our markets.

IDENTIFICATION OF OPPORTUNITIES THROUGH THE ANNUAL PLANNING PROCESS

In addition to the systematic management of risks, the Company's long-term success must be secured through integrated **opportunities management**. The identification of opportunities and their strategic and financial assessment play a major role in our annual planning process.

The short-term monitoring of results and the medium-term planning process help our operating segments and Group Headquarters to 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. We distinguish between two types of opportunities:

- Opportunities with external causes over which we have no influence, for example, the revocation of additional taxes in Europe.
- Opportunities created internally, for example by focusing our organizational structure on innovation and growth areas and products, or through business partnerships and collaborations from which we expect synergies.

We have continuously increased the efficiency of our planning process so as to give us greater scope. 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 our Group and our operating segments on a daily basis, 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 phase. This daily "brainstorming" may result

in opportunities being rejected, passed back to the respective working groups for revision, or adopted and transferred to the organization.

RISK ASSESSMENT AND RISK CONTAINMENT

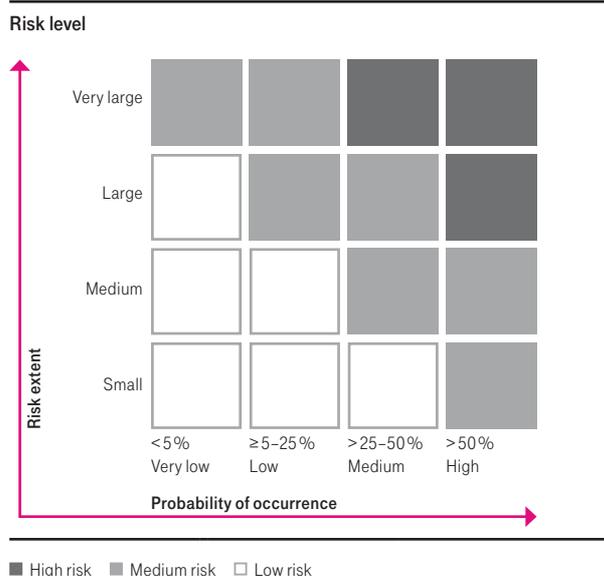
ASSESSMENT METHOD

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
Small	Limited negative effects on business activities, results of operations, financial position, and reputation; individual EBITDA risk < € 100 million
Medium	Certain negative effects on business activities, results of operations, financial position, and reputation; individual EBITDA risk ≥ € 100 million
Large	Significant effects on business activities, results of operations, financial position, and reputation; individual EBITDA 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 risk ≥ € 500 million, and/or affects more than one Group entity

By assessing risks according to the aspects of probability of occurrence and risk extent, we classify them as low, medium and high risks, as shown in the graphic below.



We report all risks classified as "high" and "medium." Exceptions are possible in specific cases: For the sake of reporting continuity, for example, we also report risks from prior years that are classified as low for the current reporting period.

It should be noted that risks with an extent currently assessed as being small may in the future acquire a larger extent than risks that are 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 that cannot be assessed at present 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

Risk management and insurance. To the extent possible and economically viable, we take out adequate Group-wide insurance cover for insurable risks. DeTeAssekuranz GmbH – a wholly owned subsidiary of Deutsche Telekom AG – acts as an insurance broker for our Group Risk Management unit and supports insurance risk management. The company 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 (i. e., the possible risk extent reaches a volume "relevant for the Group") or for risks 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 support process within operational risk management that protects business processes from the consequences of damaging incidents and disruptions, and 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 therefore to identify potential threats at an early stage and to reduce 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.

For this, BCM identifies critical business processes and business processes needing protection including any supporting processes, process steps, and assets (people, technology, infrastructure, supply and service relationships, and information). 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 risk owners initiate and execute further measures to contain 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 large number of measures for dealing with operational risks: For example, we improve our networks through continuous operational and infrastructural measures. We continuously enhance our quality management, the related controls, and quality assurance. We 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 endeavor to minimize risks in connection with legal proceedings by ensuring suitable support for proceedings and 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 overcoming or avoiding tax risks.

RISKS AND OPPORTUNITIES

In the following section, we present all risks and opportunities that have been identified as significant for the Group and, 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 subsequently presented.

In order to make it easier to understand and explain their effects better, we have allocated the individually assessed risks to the following categories:

20	Deutsche Telekom at a glance	70	Corporate responsibility
26	Group organization	77	Innovation and product development
28	Group strategy	82	Employees
31	Management of the Group	87	Significant events after the reporting period
35	The economic environment	87	Forecast
40	Development of business in the Group	97	Risk and opportunity management
52	Development of business in the operating segments	112	Accounting-related internal control system
66	Development of business at Deutsche Telekom AG	113	Other disclosures

Corporate risks

	Probability of occurrence	Risk extent	Risk level	Change against prior year
INDUSTRY, COMPETITION, AND STRATEGY				
Economic risks, Germany	low	small	low	↻
Economic risks, United States	low	medium	low	↻
Economic risks, Europe	low	medium	low	↻
Risks relating to the market and environment, Germany	medium	small	low	↻
Risks relating to the market and environment, United States	low	large	medium	↻
Risks relating to the market and environment, Europe	medium	medium	medium	↻
Risks relating to innovations (substitution)	medium	medium	medium	↻
Risks relating to strategic transformation and integration	medium	medium	medium	↻
REGULATION	see pages 103 and 104			
OPERATIONAL RISKS				
Personnel, Germany and Systems Solutions	medium	small	low	↻
Risks relating to IT/NT network operations, Germany	very low	large	medium	↻
Risks relating to IT/NT network operations, United States	very low	large	medium	↻
Risks relating to IT/NT network operations, Europe	very low	large	low	↻
Risks relating to existing IT architecture, United States	medium	medium	medium	↻
Future viability of the IT architecture, United States	medium	large	medium	↻
Procurement	low	small	low	↻
Data privacy and data security	high	medium	medium	↻
BRAND, COMMUNICATION, AND REPUTATION				
Brand and reputation (reporting in the media)	low	small	low	↻
Sustainability risks	very low	small	low	↻
Health and environment	low	medium	low	↻
LITIGATION AND ANTI-TRUST PROCEEDINGS	see page 108 et seq.			
FINANCIAL RISKS				
Liquidity, credit, currency, interest rate risks	low	small	low	↻
Tax risks	see page 111			
Other financial risks	see page 111			

↻ improved ↻ unchanged ↻ deteriorated

RISKS AND OPPORTUNITIES FROM INDUSTRY, COMPETITION, AND STRATEGY

Risks and opportunities relating to the macroeconomic environment. It is clear from the economic and political developments of the last few months that uncertainties have grown as regards global economic growth and the economies of our footprint countries. Current forecasts of future economic development vary widely in both bandwidth and volatility. In many countries, the benefits of international economic integration have failed to reach parts of the population or, at least, they are not aware these benefits exist. Upcoming elections in Europe could result in further countries wanting to leave the European Union. Nor can we rule out an increase in protectionism, with potential long-term negative effects on world trade. What is more, geopolitical crises, resulting for example from the increased terror threat or large numbers of refugees, may have an adverse effect on the economies of the countries in which we operate. While the political situation in Greece has essentially stabilized, risk factors remain, including the slim parliamentary majority of the governing coalition and

potentially growing resistance to austerity policies. Against this backdrop, a renewed escalation toward a political crisis cannot be entirely ruled out.

Risks to economic development could manifest themselves in different ways in some of our countries. Consumers and business customers could rein in their consumption if the economy slows sharply again and uncertainty continues to rise. Government austerity measures could also have negative effects on demand for telecommunications services, if public-sector demand declines or disposable incomes in the private sector diminish.

Risks relating to the market and environment. The main market risks we face include the steadily falling price levels 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 intensive competition in the telecommunications industry, cannibalization effects due to new products and services, and technological progress.

Competitive pressure is expected to continue, especially in the fixed network in Germany and Europe. In the broadband market, we are observing above-average growth in the market shares of regional network operators, particularly in Germany, and an increase in their market coverage through the build-out of proprietary infrastructure. In certain regions, our competitors are extending their own fiber-optic network to the home so that they are independent of our network in the local loop, too. There is also strong competition to gain new customers by cutting prices and offering introductory discounts.

We also expect prices for mobile voice telephony and mobile data services to decrease further, which could adversely affect our mobile services revenue. Among the main reasons for the decrease in prices are providers that are pursuing aggressive pricing policies (MVNOs) and expanding in Germany and other European markets. Pure eSIM smartphone offerings could put even more pressure on prices for mobile voice telephony and mobile data services. In addition, the risk remains that smaller competitors will take unforeseen, aggressive pricing measures.



See the section "Forecast," page 87 et seq.

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. We continue to be exposed to the risk of a further loss of market share and falling margins and of increasingly losing direct customer contact.

T-Mobile US operates in a very competitive wireless industry where customer attrition may increase as the wireless industry shifts away from service contracts and market saturation leads to increased competition for customers. The growing appetite for data services will increase demand on its network capacity. Furthermore, industries are converging as video, mobile, and broadband companies compete to deliver content. Joint ventures, mergers, acquisitions and strategic alliances are resulting in larger competitors who could enter into exclusive handset, device, or content arrangements or refuse to provide us with roaming services on reasonable terms. This may adversely affect T-Mobile US' competitive position and ability to grow. The scarcity and cost of additional wireless spectrum, and regulations relating to spectrum use, may also affect its business strategy, including plans to improve its network.



For more information on our innovation activities, please refer to the section "Innovation and product development," page 77 et seq.

Our Systems Solutions operating segment also faces challenges. After all, the information and communications technology market is impacted by continued strong competition, persistent price erosion, long sales cycles and restraint in the awarding of projects. This creates a potential risk of revenue losses and declining margins at T-Systems.

New consumer credit regulations in the Netherlands. The Supreme Court of the Netherlands (Hoge Raad der Nederlanden) found in the final instance that mobile contracts that are bundled with a free or discounted device such that the price of the device is not apparent for the customer, are to be treated as consumer credit or installment purchases. Accordingly, such contracts are subject to Dutch consumer credit law. As a consequence, contracts that do not comply with these specific consumer credit provisions can be rescinded. T-Mobile Netherlands is currently examining the consequences of this decision. At present the full financial impact of this cannot be assessed with sufficient certainty. To ensure it complies with the legal situation in future, T-Mobile Netherlands applied for a license for 2017 to issue consumer credit. The license it received is valid with effect from January 1, 2017.

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 "Market expectations."

In the following section, we present risks and opportunities that we believe will allow us to achieve market growth and that could be significant for our future financial position and results.

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.

Opportunities relating to innovations. In addition to the risks described, ever shorter innovation cycles enable us to help shape the digital future and provide consumers and business customers with our own innovations – thus answering the questions of tomorrow today. 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.

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 risks. In other words, the benefit of the measures could be less than originally estimated, or the measures could take effect later than expected, or not at all. Each of these factors, on their own or combined with others, could have a negative impact on our business situation, financial position, and results of operations.

20	Deutsche Telekom at a glance	70	Corporate responsibility
26	Group organization	77	Innovation and product development
28	Group strategy	82	Employees
31	Management of the Group	87	Significant events after the reporting period
35	The economic environment	87	Forecast
40	Development of business in the Group	97	Risk and opportunity management
52	Development of business in the operating segments	112	Accounting-related internal control system
66	Development of business at Deutsche Telekom AG	113	Other disclosures

RISKS AND OPPORTUNITIES RELATING TO REGULATION

In the following section, we describe our main regulatory risks and opportunities which, as things currently stand, could affect our results of operations and financial position, and our reputation. These risks and opportunities comprise changes in regulatory policy and legislation, in the awarding of the spectrum we require for current and future services, and in regulatory decisions regarding specific products or prices.

Our German and international companies remain subject to sector-specific market regulation. The national regulatory authorities have extensive powers to intervene in our product design and pricing, with significant effects on our operations. We can only to a limited extent anticipate such regulatory interventions, which may additionally increase existing price and competitive pressure. There are concerns that regulation in Germany and other European countries may continue to impact medium- to long-term growth in revenue and earnings.

Changes in regulatory policy and legislation

EU legal framework for telecommunications. On September 14, 2016, the European Commission published legislative proposals for revising the EU legal framework for telecommunications, which were passed on to the European Parliament and Council for further discussion. The legal framework comprises the central EU rules for the telecommunications sector, in particular price and access regulation, the spectrum policy, sector-specific consumer protection rules, the provisions on universal service, and the institutional framework. We expect the new rules to be passed in the first half of 2018. The corresponding provisions will then have to be transposed into national law, a process that will take at least a year. It is currently difficult to predict the outcome of this extensive legislative process; overall, we expect it to result in both opportunities and risks.

On October 27, 2015, the European Parliament and the European Council passed the **EU Regulation concerning the single market for electronic communications**. It contains provisions on international roaming, net neutrality, and obligations to provide information.

■ **International roaming.** Under the EU Regulation concerning the single market for electronic communications, surcharges for roaming services within the EU are to be eliminated entirely (Roam like at Home) as of June 15, 2017, following an initial reduction in rates that has been in force since April 30, 2016. While exceptions are possible under the Fair Use Policy, the rules of that policy – published by the European Commission on December 15, 2016 – limit surcharges to only very few cases. The introduction of Roam like at Home will give rise to corresponding revenue losses as well as substantial implementation costs. Furthermore, the European Council and the European Parliament are revising the Roaming Regulation and plan to lower very significantly the regulated price caps for wholesale roaming charges. These reductions will give rise to revenue risks for us and our subsidiaries, also because the international roaming mechanism may be misused in order to circumvent national terms and conditions. We expect the definitive regulation to be published in the first half of 2017.

■ **Net neutrality.** On August 30, 2016, the Body of European Regulators for Electronic Communications (BEREC) published guidelines for implementing the EU Regulation on net neutrality (Telecoms Single Market Regulation). As expected, BEREC's interpretation of the regulation was very narrow. It remains to be seen how the national regulatory authorities apply these guidelines in practice.

■ **Information requirements.** In addition to the provisions on net neutrality, the BEREC guidelines also include far-reaching provisions on obligations to provide information that significantly constrict the legal framework of the EU regulation. Under these provisions, all customers are to be able to access all information on bandwidths; the information would also have to be made available to all existing customers retrospectively. Both of these measures entail corresponding revenue risks. As the guidelines are without legal force, we have to wait and see how they are translated into national law.

At the national level, on December 1, 2016 the lower house of the German national parliament, Bundestag, enacted its **Transparency Regulation**, the main objective of which is to enhance transparency and cost control with telecommunications services. The regulation will come into force as of June 1, 2017. In this context, the Federal Network Agency launched a measuring system that enables consumers to measure the bandwidths available on their fixed-network and mobile lines. The access bandwidths achieved across Germany were published in June 2016 for the first time and further publications are to follow.

Awarding of spectrum

Risks could arise from the fact that inappropriate auction rules and frequency usage requirements, excessive reserve prices, and disproportionately high annual spectrum fees could jeopardize the acquisition of our respective target 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 spectrum in the 0.8 GHz and 0.9 GHz ranges, as well as to 1.8 GHz, 3.5 GHz, and 3.7 GHz. Allocations of spectrum are currently in preparation in Albania, Greece, the F.Y.R.O Macedonia, Austria, the Czech Republic and Slovakia, with most taking place before mid-2017. A decision on the extension of the rights of use for T-Mobile Czech Republic's existing 0.9/1.8 GHz spectrum is expected in the first half of 2017. In addition, preparations are in progress there for the award of 3.7 GHz spectrum, which is expected to take place in spring 2017. Within the same time frame, the regional allocations of 3.7 GHz spectrum in Slovakia should be concluded and a new allocation of 1.8 GHz spectrum take place. The Federal Communications Commission (FCC), the national regulatory authority in the United States, began auctioning spectrum in the 0.6 GHz range on May 31, 2016. This Incentive Auction will redistribute existing broadcast spectrum to mobile use in a multistage process of individual reverse and forward auctions. The latest stage, in which 70 MHz of a total of 84 MHz of former broadcast spectrum is up for auction, is still ongoing. The Incentive Auction is due to conclude in the first half of 2017. □



For information on spectrum auctions that were completed in 2016 or are still ongoing, please refer to the section "The economic environment," page 35 et seq.



For more information on the administrative court processes, please refer to the section "Litigation," pages 108 and 109.

Regulatory decisions on products and charges

Retrospective new ruling on rate approvals. In addition to the general regulatory risks already mentioned, the fact that administrative courts may overturn the Federal Network Agency's rate rulings is a source of further uncertainty in Germany. In such cases, the regulatory authority then has to decide again on the rates for past periods. It is generally not clear at all whether, to what extent, and in which direction rates will be revised. The settlement agreements concluded in 2015 with plaintiffs concerning the ULL one-time charges, in which the originally approved charges were agreed and the contractual parties undertook to withdraw pending claims, were implemented in full by April 2016. On this basis, we submitted corresponding rate applications to the Federal Network Agency on September 23, 2015 and November 30, 2015, which it approved on November 5, 2015 and February 1, 2016, respectively. As a result, the ULL one-time charges that were originally approved are now legally binding for almost the entire market.

OPERATIONAL RISKS AND OPPORTUNITIES

Personnel. In 2016, we once again used socially responsible measures to restructure the workforce in the Group, mainly by means of severance payments, partial and early retirement, and employment opportunities for civil servants and employees offered by Vivento/Telekom Placement Services, especially in the public sector. 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 around 1,854 civil servants are entitled to return to Deutsche Telekom in this way (as of December 31, 2016).



For information on major litigation in connection with personnel, please refer to the section "Litigation," pages 108 and 109.

Risks relating to IT/NT network operations. We have an increasingly complex information/network technology (IT/NT) 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.

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 Entertain. In order to avoid the risk of failures, e.g., arising from natural disasters or fire, we use technical early warning systems and

duplicate 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 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 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 Group-wide insurance cover for insurable risks.

Opportunities relating to IT/NT network operations. 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. On the one hand, this will enable efficiency gains, e.g., by reducing the complexity of maintenance and operation, switching off service-specific legacy platforms, and saving energy. On the other hand, all IP will generate growth potential in the short to medium term by improving existing services (e.g., better voice quality, more customer self-service, more 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 growth. The idea of developing services only once and then marketing them in different countries simultaneously promises more than just synergies – it is a chance to get those services to market faster and more cost-effectively.

5G is the next-generation telecommunication network. 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 develop this future standard, which will address a whole array of challenges facing telecommunication networks. These include purely technical requirements, such as achieving a substantial increase in capacity, bandwidth, availability, and lower latency, as well as fundamental issues, such as fixed-mobile convergence (FMC), machine-to-machine communication on a large scale in the Internet of Things (IoT), and the growing need for reliability, security, and guaranteed resource allocation (quality of service) in industrial applications. 5G thus offers not only the immediate opportunity of cost-effectively managing fast growing demands in existing business models going forward, but also opportunities for additional business models by marketing "network capabilities" (e.g., network access, security, identity, storage location, temporary storage, real-time processing, etc.) to relevant partners.

Our T-Systems operating segment covers innovative business areas in the digital transformation of business processes, such as the Internet of Things. These business areas could develop faster than expected. As a pioneer of the digital transformation, we have an opportunity to play a

20	Deutsche Telekom at a glance	70	Corporate responsibility
26	Group organization	77	Innovation and product development
28	Group strategy	82	Employees
31	Management of the Group	87	Significant events after the reporting period
35	The economic environment	87	Forecast
40	Development of business in the Group	97	Risk and opportunity management
52	Development of business in the operating segments	112	Accounting-related internal control system
66	Development of business at Deutsche Telekom AG	113	Other disclosures

crucial role in setting the market trend – and not simply participating in it – with flagship projects. 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 participating in different projects and contributing our core competencies in data communication, big data, cloud computing, and security. In a number of market areas of the Internet of Things, such as predictive maintenance, we can also boast initial excellent references with international applications.

The Federal Republic has made maximum use of its renewal options for operation of the toll collection system for trucks in Germany. As the existing technology and development partner, we are in a strong position in the new tender process to submit a competitive offer to continue operation of the system thanks to our detailed knowledge and expertise. What is more, we have earned valuable references that will help to give us an edge over our competitors thanks to our participation in other European toll collection projects in Belgium and Switzerland and our involvement in the planned launch of a Europe-wide toll system (EETS).

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 its services and, in some cases, to protect its customers' and its own information. Failure of T-Mobile US' or others' systems, networks and infrastructure may prevent T-Mobile US from providing reliable service, or may allow for the unauthorized use of or interference with its networks and other systems. T-Mobile US' reputation and financial condition could be materially adversely affected by such system failures, business disruptions, and unauthorized use of or interference with its network and other systems. Remediation costs could include liability for information loss as well as repairing infrastructure and systems.

Future viability of the IT architecture in the United States. In order to grow and remain competitive with new and evolving technologies in its industry, T-Mobile US will need to adapt to future changes in technology, continually invest in T-Mobile US' network, enhance its 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 T-Mobile US may experience a decline in demand for its services or face challenges in implementing or evolving its business strategy. T-Mobile US is in the process of implementing a new billing system, which will support a portion of our subscribers, while maintaining its legacy billing system. The implementation may cause major system or business disruptions or T-Mobile US may fail to implement the new billing system in a timely or effective manner.

Opportunities relating to the IT architecture in the United States.

T-Mobile US is making significant investments in its IT infrastructure. If this results in a significant improvement in processes, then the savings made could be higher than previously assumed.

Procurement. As a service provider and an operator and provider of telecommunications and IT products, we cooperate with a variety of suppliers of technical components, such as software, hardware, transmission systems, switching systems, outside plant, and terminal equipment.

Supply risks cannot be entirely ruled out. Delivery bottlenecks, price increases, changes in the prevailing economic conditions, or suppliers' product strategies may have a negative impact on our business processes and our results. Risks may result from the dependence on individual suppliers or from individual vendors defaulting. We employ organizational, contractual, and procurement strategy measures to counteract such risks.

Data privacy and data security. The passage of the General Data Protection Regulation (GDPR) in April 2016 established a directly applicable and uniform code of data protection legislation across the EU. The newly adopted rules assure Europe a high level of data protection and, at the same time, will pave the way for new digital business models. Thus our fundamental demands have been met. Additionally, the new data protection legislation closes a major regulatory gap when it comes to service providers outside of the EU. The impact of the GDPR on the competition situation with non-European market players (e.g., Google, Facebook or Apple) in particular remains to be seen. Now it has been adopted, the member states must transpose the Regulation into national law. However, there is a risk that the national governments will fully exploit the scope for special regulations offered by the GDPR. The draft bill presented to harmonize data protection law in Germany with the GDPR is a clear signal that we need to act. National idiosyncrasies must not be allowed to undermine the level of harmonization achieved across a broad range of diverse regulations. As far as sector-specific telecommunications regulation is concerned, the review process for the E-Privacy Directive began, as expected, in mid-2016. With this process we are seeking to create a level playing field that incorporates over-the-top providers in the regulatory framework; in addition, we also hope to reduce sector-specific regulation to the largest possible extent. The announcement that the directive would be translated into a legally binding regulation and its scope widened to include additional providers (such as WhatsApp) showed that at least the first of our demands has already been met. The important thing now is to ensure that the new regulations are harmonized as far as possible with the GDPR.

Our products and services are subject to risks in relation to data privacy and data security, especially in connection with unauthorized access to customer, partner, or employee data. The security and privacy of this data are always our top priority. This also applies to the growing cloud computing business, which is subject to the same rigorous requirements for security and data privacy as all our other products. In order to maintain these high standards and largely exclude risks, we welcome the European General Data Protection Regulation. It has laid the foundation to ensure that the same rules apply for all companies offering their services on the European market. Thus consumers have the same rights and there is a level playing field all over Europe. With regard to IT security, we are faced with numerous new challenges.

In recent years, the focus has shifted from prevention to analysis. This is where our early warning system comes in: It detects new sources and types of cyber-attack, 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 weaknesses 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 enable new attack patterns to be detected and new protection systems to be developed.

Cyber-crime and industrial espionage are becoming more and more widespread. Global cyber-attacks like the one launched on the routers of Deutsche Telekom's customers in late November are evidence of the sheer scale of the threat from the Internet. According to the 2016 Security Report: Decision-Makers, 93 percent of large and medium-sized enterprises in Germany have already fallen victim to IT attacks aimed at gaining confidential data or causing damage. We are addressing these risks with comprehensive security concepts. We will continue to engage in partnerships, e.g., with public and private organizations, in order to create greater transparency, and thus be in a stronger position to tackle the threats. With the Security by Design principle we have established security as a fixed component in our development processes for new products and information systems. In addition, we conduct intensive mandatory digital security tests and regularly submit to external appraisals – in the shape of security and data-protection audits – in accordance with internationally recognized norms and standards.

We plan to accelerate our growth using IT security solutions. That is why we established the Telekom Security business unit, which unites all of the Company's security services units under the aegis of T-Systems. Some 1,200 experts are working to develop integrated security concepts for customers and to offer the security solutions required for this from a single source: From secure cloud and secure e-mail, through to Cyber Defense as a Service, for which our experts and situation center are available 24/7.

We plan to win market shares in the growth area of security with our end-to-end security portfolio MagentaSecurity and to drive forward the megatrends of Internet of Things and Industry 4.0 with new security concepts. We are also continuing to expand our partner ecosystem in the area of IT security. 



See section
"Corporate
responsibility,"
page 70 et seq.



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 more quickly and extensively than they could just a few years ago. 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 challenges and opportunities. For us, comprehensive risk and opportunities 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 of identifying current and potential risks and opportunities. We also participate in a number of working groups and committees. 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 year-round open online materiality survey for all stakeholders ; our bi-monthly NGO report, which systematically analyzes press publications of the NGOs relevant for us; our involvement in working groups and committees, countless national and international business associations and social organizations, e.g., GeSI, Bitkom, Econsense, and BAGSO; stakeholder dialog formats organized by us, such as the CR Forum and Dialog Days on sustainability in procurement; and our various publications, such as the press review and newsletter.

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 protection, or work standards in the supply chain 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.

20	Deutsche Telekom at a glance	70	Corporate responsibility
26	Group organization	77	Innovation and product development
28	Group strategy	82	Employees
31	Management of the Group	87	Significant events after the reporting period
35	The economic environment	87	Forecast
40	Development of business in the Group	97	Risk and opportunity management
52	Development of business in the operating segments	112	Accounting-related internal control system
66	Development of business at Deutsche Telekom AG	113	Other disclosures

■ **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. ICT products and services offer the potential to save up to ten times as much in CO₂ emissions in other industries as the ICT sector itself generates (according to the GeSI SMARTer2030 study). This creates an opportunity to save 20 percent of global CO₂ emissions in 2030, and to maintain worldwide emissions at the level of 2015 with simultaneous economic growth. The additional revenue potential here amounts to USD 6.5 trillion, USD 2.0 trillion of which is for the ICT industry alone. Further, ICT solutions can save a total of USD 4.9 trillion in costs. To give a specific example: The broadband roll-out in Germany has the potential to save an aggregate amount of 19 million metric tons of CO₂ between 2012 and 2020. What is more, the economic momentum triggered by rolling out broadband can create an aggregate number of 162,000 new jobs and increase GDP by EUR 47 billion between 2015 and 2020. We are supporting this trend by evaluating our product portfolio to identify sustainability benefits. ■

Among the risks that climate change harbors, meteorological extremes are one we are already experiencing. This is having a direct effect on our stakeholders, e.g., our customers, suppliers, and employees. We can take preventive action in this area by reducing our own CO₂ emissions, which is one of the reasons we set ourselves the goal of achieving a 20-percent reduction in our Group-wide emissions – leaving aside our United States operating segment – by 2020 (baseline: 2008). 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. Beyond that, in 2015 four of our subsidiaries (Magyar Telekom in Hungary, OTE S. A. in Greece, T-Mobile Austria, and T-Mobile Netherlands) covered 100 percent of their electricity requirements with renewables, thus actively reducing climate risks.

■ **Suppliers.** We see more sustainability in our supply chain as an opportunity – for our reputation and our business success. Thus through a development program, we help strategic suppliers to introduce business practices that are socially and ecologically acceptable and economically efficient. The program showed measurable successes again in the reporting year. Better working conditions at our suppliers reduce the number of work-related accidents and the turnover rate. This increases productivity, while at the same time lowering costs for recruitment and training. Thus not only do we strengthen CR performance at our suppliers, we also significantly reduce identified risks. As part of 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. However, the reporting of NGOs or media can give rise

to risks to the Company's reputation, but also to supply risks. We reduce these risks by systematically reviewing our suppliers. ■ In the renowned RobecoSAM sustainability rating we scored 98 out of 100 points for our supply chain management in the reporting year, five points higher than in the prior year. Our partnerships with suppliers that comply with international sustainability standards ensure a high level of product quality and reliable procurement.

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 concern both mobile communications networks and the use of mobile handsets. In mobile communications, this affects projects like the build-out of the mobile communications infrastructure and the use of mobile handsets. In the fixed network, it affects sales of traditional DECT (digital cordless) phones and devices that use Wi-Fi technology. There is a risk of regulatory interventions, such as reduced thresholds for electromagnetic fields or the implementation of precautionary measures in mobile communications, e.g., amendments to building law or labeling requirements for handsets.

Over the past few years, recognized expert organizations such as the World Health Organization (WHO) and the International Commission on Non-Ionizing Radiation Protection (ICNIRP) have repeatedly reviewed the current thresholds for mobile communications and confirmed that – if these values are complied with – the use of mobile technology is safe based on current scientific knowledge. The 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 financial support of independent mobile communications research, far beyond that which is stipulated by legal requirements. We aim to overcome uncertainty 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 maintain our close and successful dialog with local authorities, over and above the statutory requirements. This also applies since our longstanding collaboration with municipalities to build out the mobile network was enshrined in law in 2013; previously, this collaboration was based on voluntary self-commitments by the network operators.



See section
"Corporate
responsibility,"
page 70 et seq.



For more information
on this topic, please
refer to our 2016 CR
Report, which will
be published in April
2017.

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.

Major ongoing legal proceedings

Toll Collect arbitration proceedings

Prospectus liability proceedings

Claims by partnering publishers of telephone directories

Claims relating to charges for the shared use of cable ducts

Monthly charges for the unbundled local loop

Claim for damages in Malaysia despite an earlier, contrary, legally binding arbitration ruling

Patents and licenses

Reduction of the Company's contribution to the civil-service pension of the former Deutsche Bundespost

■ **Toll Collect arbitration proceedings.** The principal members of the Toll Collect consortium are Daimler Financial Services AG and Deutsche Telekom AG. In the arbitration proceedings between these principal shareholders and the consortium company Toll Collect GbR on one side and the Federal Republic of Germany on the other concerning disputes in connection with the truck toll collection system, Deutsche Telekom received the Federal Republic of Germany's statement of claim on August 2, 2005. The Federal Republic is claiming some EUR 3.33 billion in lost toll revenues plus interest due to the delayed commencement of operations as well as contractual penalties in the amount of around EUR 1.65 billion plus interest. The Federal Republic's main claims – including contractual penalty claims – thus total about EUR 4.98 billion plus interest. After the hearings in spring 2014, we reassessed the proceedings, updated Deutsche Telekom's share of the amount at risk, and recognized adequate provisions for the risk in the statement of financial position. Further hearings took place in 2015 and 2016. There is no reason to adjust the provisions for risk recognized in 2014 in the statement of financial position.

■ **Prospectus liability proceedings.** There are around 2,600 ongoing actions filed by around 16,000 alleged buyers of T-Shares sold on the basis of the prospectuses published on May 28, 1999 (second public offering, or DT2) and May 26, 2000 (third public offering, or DT3). The plaintiffs assert that individual figures given in these prospectuses were inaccurate or incomplete. The amount in dispute totals approximately EUR 80 million. 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 has issued certified questions 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. In the model proceedings (Musterverfahren) on the second public offering (DT2) on July 3, 2013, the Frankfurt/

Main Higher Regional Court issued a decision and ruled that the disputed stock exchange prospectus did not contain any errors. In a decision dated November 22, 2016, the Federal Court of Justice confirmed the ruling of the Frankfurt/Main Higher Regional Court in all its key points. This brings the DT2 model proceedings to an end.

On May 16, 2012, the Frankfurt/Main Higher Regional Court had ruled in the model proceedings (Musterverfahren) on the third public offering (DT3) that there were also no errors in Deutsche Telekom AG's prospectus. In its decision on October 21, 2014, the Federal Court of Justice 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. Adequate provisions for this risk were recognized in the annual financial statements of Deutsche Telekom AG, which are prepared in accordance with German GAAP.

■ **Claims by partnering publishers of telephone directories.** Several publishers that had set up joint ventures with DeTeMedien GmbH, a wholly owned subsidiary of Deutsche Telekom AG, 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 refunds from DeTeMedien GmbH and, to a certain extent, from Deutsche Telekom AG as joint and several debtor alongside DeTeMedien 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, 15 actions are still pending for a remaining amount in dispute of around EUR 104 million plus interest. Five publishers whose civil actions are still pending have been pursuing their claims in parallel since June 2016 through administrative court actions against the Federal Network Agency.

■ **Claims relating to charges for the shared use of cable ducts.** In 2012, Kabel Deutschland Vertrieb und Service GmbH (KDG) – now Vodafone Kabel Deutschland GmbH – 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 its latest estimates, KDG's claims amounted to around EUR 407 million along with another around EUR 34 million for the alleged benefit from additional interest, plus interest in each case. 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

20	Deutsche Telekom at a glance	70	Corporate responsibility
26	Group organization	77	Innovation and product development
28	Group strategy	82	Employees
31	Management of the Group	87	Significant events after the reporting period
35	The economic environment	87	Forecast
40	Development of business in the Group	97	Risk and opportunity management
52	Development of business in the operating segments	112	Accounting-related internal control system
66	Development of business at Deutsche Telekom AG	113	Other disclosures

Frankfurt/Main Higher Regional Court for further consideration. In similar proceedings, Unitymedia Hessen GmbH & Co. KG, Unitymedia NRW GmbH and Kabel BW GmbH demanded in January 2013 that Telekom Deutschland GmbH cease charging the plaintiffs more than a specific and precisely stated amount for the shared use of cable ducts. For charges allegedly paid in excess between 2009 and 2012, the plaintiffs are claiming a refund for a total amount of around EUR 189 million plus interest. The claim was dismissed in the first instance by the Cologne Regional Court on October 11, 2016. The plaintiffs have appealed against this decision. At present the financial impact of both these proceedings cannot be assessed with sufficient certainty.

- **Monthly charges for the unbundled local loop (ULL).** In light of the new rulings issued and the withdrawal of claims following the implementation of settlement agreements with (former) plaintiffs,  we deem the remaining risk from the proceedings concerning the ULL monthly and one-time charges to be low. In the future, therefore, we will not report any further about the proceedings still pending.

Furthermore, several competitor companies have requested the revocation of decisions made by the Federal Network Agency in favor of Deutsche Telekom or Telekom Deutschland GmbH. If these applications were to be successful, they would normally require a new decision by the Federal Network Agency.

- **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 ruling in its favor. The main first-instance proceedings in this matter are scheduled to start spring/summer 2017. At present, we cannot assess their financial impact with sufficient certainty.
- **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.
- **Reduction of the Company's contribution to the civil-service pension of the former Deutsche Bundespost.** Deutsche Telekom

complies with its obligation to pay contributions to the Civil Service Pension Fund in accordance with the German Act on the Legal Provisions for the Former Deutsche Bundespost Staff (Postpersonalrechtsgesetz). The Act on the Legal Provisions for the Former Deutsche Bundespost Staff states that the obligation to contribute to the Civil Service Pension Fund may be reduced to a level that is in line with the market and a peer company if a former Deutsche Bundespost company bound by such payment obligations can provide evidence to the German government that the payment would constitute an unreasonable burden on its competitiveness. Deutsche Telekom previously filed an application with the responsible Federal Ministry of Finance to have its contribution obligations reduced. After this application was rejected, Deutsche Telekom filed an appeal with the responsible administrative court seeking reimbursement of a portion of the paid contributions and a reduction of the contributions to be paid in future. In the ruling dated October 2, 2015, the competent administrative court dismissed the claim of Deutsche Telekom for a reduction in the payment obligation. Deutsche Telekom filed an appeal against this ruling in November 2015.

Further, Deutsche Telekom intends to defend itself and/or pursue its claims resolutely in each of these court, conciliatory, and arbitration proceedings.

Proceedings concluded

- **Claims for damages concerning the charges for the provision of subscriber data.** In 2005, Deutsche Telekom AG received a claim for damages of approximately EUR 86 million plus interest from telegate AG. telegate AG alleged that Deutsche Telekom AG charged excessive prices for the provision of subscriber data between 1997 and 1999. Also in 2005, Deutsche Telekom AG received a claim for damages from Dr. Harisch, the founder of telegate AG. This claim amounted to around EUR 612 million plus interest. Both claims have since been dismissed conclusively. On April 12, 2016, the Federal Court of Justice dismissed the complaint against non-allowance of appeal filed by telegate AG, thus concluding these proceedings.
- **Claim for compensation against OTE.** In May 2009, Lannet Communications S. A. filed an action against OTE claiming damages of around EUR 176 million plus interest arising from the allegedly unlawful termination of services by OTE – mainly interconnection services, unbundling of local loops, and leasing of dedicated lines. On April 8, 2016, the relevant court in Athens ruled in favor of OTE and obligated the plaintiff to withdraw its claim. The decision has now become final and legally binding, the proceedings have thus been terminated.



See the section "Risks and opportunities relating to regulation," pages 103 and 104.

ANTI-TRUST PROCEEDINGS

Like all companies, our Group is subject to the regulations of anti-trust law. Given this, we have in recent years significantly expanded our compliance activities in this area too. In 2015, independent auditors certified our anti-trust compliance management system as being effective in accordance with IDW AuS 980. Nevertheless, Deutsche Telekom and its subsidiaries, joint ventures, and associates are from time to time subject to proceedings under competition law or civil follow-on actions. In the following, we describe major anti-trust proceedings and the resulting claims for damages.



For the evaluation, please refer to the table on page 101.

Claims for damages against Slovak Telekom following the European Commission's 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. The fines were paid in January 2015. Slovak Telekom and Deutsche Telekom challenged the European Commission's decision on December 29, 2014 before the Court of the European Union. Following the decision of the European Commission, Orange Slovensko, SWAN, and Slovanet filed damage actions against Slovak Telekom with the civil court in Bratislava in 2015, claiming compensation for damages of EUR 247 million, EUR 53 million and EUR 62 million respectively, plus interest. These claims seek compensation for alleged damages due to Slovak Telekom's abuse of a dominant market position, as determined by the European Commission. Whereas Slovanet's claim has not yet been served on Slovak Telekom, the latter has submitted a detailed defense as regards Orange Slovensko and SWAN, rejecting in full the claims for damages in both cases. In parallel, Slovak Telekom is conducting negotiations with Orange Slovensko with a view to reaching an out-of-court settlement. We have recognized adequate provisions for this risk in the statement of financial position. At present we cannot assess the financial impact of the other proceedings with sufficient certainty.

FINANCIAL RISKS

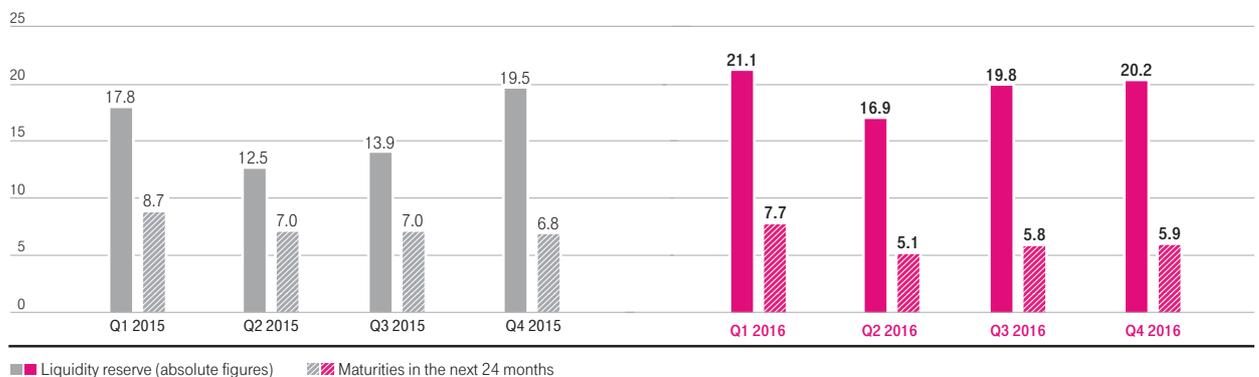
Liquidity, credit, currency, interest rate risks

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 and interest rates. Our financial risk management aims to contain these risks through ongoing operational and finance activities. To contain the risks, we use selected derivative and non-derivative hedging instruments (hedges), depending on the risk assessment. However, we hedge only those risks that affect our Group's cash flow. We use derivatives exclusively as hedging instruments, i. e., not for trading or other speculative purposes. The following risk areas – liquidity, credit, currency, and interest rate risks – are evaluated after implementation of risk containment measures.

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. This liquidity reserve is to cover the maturities of the next 24 months at any time. For medium- to long-term financing, we primarily use bonds issued in a variety of currencies and jurisdictions. These instruments are generally issued via Deutsche Telekom International Finance B. V. and are forwarded within the Group as internal loans.

The graphic below shows the development of the liquidity reserve in relation to maturity dates. As of the end of 2016 and also in the preceding quarters, we clearly met our targets for the liquidity reserve to cover maturities due in the respective coming 24 months.

Liquidity reserve and maturities in 2016 compared with 2015
billions of €



20	Deutsche Telekom at a glance	70	Corporate responsibility
26	Group organization	77	Innovation and product development
28	Group strategy	82	Employees
31	Management of the Group	87	Significant events after the reporting period
35	The economic environment	87	Forecast
40	Development of business in the Group	97	Risk and opportunity management
52	Development of business in the operating segments	112	Accounting-related internal control system
66	Development of business at Deutsche Telekom AG	113	Other disclosures

In addition to the reported liabilities to banks, Deutsche Telekom had standardized bilateral credit agreements with 22 banks for a total of EUR 12.9 billion at December 31, 2016. None of these lines of credit had been utilized as of December 31, 2016. According to the credit agreements, the terms and conditions depend on our rating. The bilateral credit agreements have an original maturity of 36 months and can, after each period of twelve months, be extended by a further twelve months to renew the maturity of 36 months. From today's perspective, our access to the international debt capital markets is not jeopardized.

Credit risk. In our operating business and certain financing activities, we are exposed to a credit risk, i. e., the risk that a counterparty will not fulfill its contractual obligations. As a rule, we only conclude transactions with regard to financing activities with counterparties that have at least a credit rating of BBB+/Baa1; this is connected with an operational credit management system. We continuously monitor accounts receivable in operations in a decentralized manner, i. e., at the individual units. Our business with corporate customers, especially international carriers, is subject to special solvency monitoring.

For derivative transactions, we agreed with counterparties as part of collateral agreements that, in the event of insolvency, all existing contracts will be netted and only a receivable or liability in the amount of the balance will remain. We reduce the credit risk arising from derivative transactions further by exchanging collateral. For receivables balances for existing collateral agreements, we receive security from the counterparty in the form of readily available cash; in the event of payables balances, we provide such security in return.

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 (i. e., if the cash flow is not denominated in the functional currency of the respective Group company). Foreign-currency risks that do not influence the Group's cash flows (i. e., the risks resulting from the translation of assets and liabilities of foreign operations into the Group's reporting currency) are generally not hedged, however. We may nevertheless also hedge this foreign-currency risk under certain circumstances.

Interest rate risks. Our interest rate risks mainly result from interest-bearing liabilities, primarily in the eurozone and the United States. The interest risks in euros are managed as part of our interest rate management activities, in the course of which the maximum permissible negative deviation from the planned finance costs is determined: the risk budget. To ensure compliance with the risk budget, we manage the composition of the liabilities portfolio (ratio of fixed- to variable-interest debt instruments and average fixed-interest period) by issuing primary (non-derivative) financial instruments and, where necessary, also deploying derivative financial instruments. This consistently resulted in a fixed-income net position in the United States. Regular reports are submitted to the Board of Management and Supervisory Board. 

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. As a result, these risks can impact 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, 2016, Deutsche Telekom's credit rating with Moody's was Baa 1, while Fitch and Standard & Poor's rated us BBB+. All three agencies gave us a "stable" outlook. A lower rating would result in interest rate rises for some of the bonds issued by us.

Sales of shares by the Federal Republic or KfW Bankengruppe. As of December 31, 2016, the Federal Republic and KfW Bankengruppe jointly held approximately 32.0 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 Deutsche Telekom AG shares by the Federal Republic or KfW, or any speculation to this effect, could have a negative impact on the price of the T-Share.

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 a detailed explanation, please refer to the section "Summary of accounting policies – Judgments and estimates" in the notes to the consolidated financial statements, pages 147 and 148.



For additional explanations, please refer to Note 36 "Financial instruments and risk management" in the notes to the consolidated financial statements, page 200 et seq.

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. In addition, the external auditors conduct a risk-oriented audit to verify the effectiveness of those parts of the ICS that are relevant to financial reporting.

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 § 315a (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, for measuring 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 data 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.

20	Deutsche Telekom at a glance	70	Corporate responsibility
26	Group organization	77	Innovation and product development
28	Group strategy	82	Employees
31	Management of the Group	87	Significant events after the reporting period
35	The economic environment	87	Forecast
40	Development of business in the Group	97	Risk and opportunity management
52	Development of business in the operating segments	112	Accounting-related internal control system
66	Development of business at Deutsche Telekom AG	113	Other disclosures

OTHER DISCLOSURES

CORPORATE GOVERNANCE STATEMENT IN ACCORDANCE WITH § 289a AND § 315 (5) HGB

The Corporate Governance Statement in accordance with § 289a and § 315 (5) HGB forms part of the combined management report. 

CLOSING STATEMENT BY THE BOARD OF MANAGEMENT ON THE DEPENDENT COMPANY REPORT

Since the Federal Republic of Germany, as minority shareholder of Deutsche Telekom AG, has represented a solid majority at most shareholders' meetings in the past due to its level of attendance, Deutsche Telekom is a dependent company of the Federal Republic of Germany in accordance with § 17 (1) AktG.

Deutsche Telekom is not subject to any control or profit and loss transfer agreement with the Federal Republic of Germany. Under § 312 AktG, the Board of Management of Deutsche Telekom AG has therefore prepared a dependent company report describing relations between the controlling entity and dependent companies. The Board of Management issued the following statement at the end of the report: "The Board of Management hereby declares that, under the circumstances known to the Board of Management at the time the corporate transactions were performed, the Company received appropriate remuneration for such transactions. The Company did not perform or omit any actions in the interests of, or on the instructions of, the controlling company or any affiliated companies of the Federal Republic."

LEGAL STRUCTURE OF THE DEUTSCHE TELEKOM 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. 

SHAREHOLDERS' EQUITY

Each share entitles the holder to one vote. These voting rights are restricted, however, in relation to treasury shares (at December 31, 2016: around 20 million in total).

Capital increase. The resolution on the dividend of EUR 0.55 per share for the 2015 financial year gave shareholders the choice between payment in cash or having their dividend entitlement converted into Deutsche Telekom AG shares. Dividend entitlements of Deutsche Telekom AG shareholders amounting to EUR 1.0 billion for shares from authorized capital (2013 authorized capital) were contributed in June 2016 and thus did not have an impact on cash flows. Deutsche Telekom AG carried out an increase in issued capital of EUR 0.2 billion against contribution of dividend entitlements for this purpose in June 2016. This increased capital reserves by EUR 852 million, and under IFRS, EUR 839 million. The number of shares increased by 70,250,163.

Treasury shares. 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 § 71 d and § 71 e 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 the 2012 and 2013 financial years. A further 90 thousand treasury shares were transferred free of charge in the 2014 financial year, and additional 140 thousand were transferred in the 2015 financial year.



The statement can be found on the Deutsche Telekom website www.telekom.com under Investor Relations in the Management & Corporate Governance section.



For information on the composition of capital stock in accordance with § 289 (4) HGB and direct and indirect equity investments, please refer to Note 15 "Shareholders' equity" in the notes to the consolidated financial statements, [page 180 et seq.](#)

In addition, a total of 232 thousand shares were reallocated in January, February, March, April, May, June, September, November and December 2016 and transferred to the custody accounts of eligible participants of the Share Matching Plan. 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 are transferred at fair value to the respective Group company starting with the reporting period.

As of December 31, 2016, sales of treasury shares resulting from the transfers in the reporting period accounted for less than 0.01 percent, or EUR 594 thousand, of share capital. Retained earnings thus increased by EUR 2,597 thousand. In the reporting year, 71 thousand treasury shares with a fair value of EUR 1,111 thousand were charged on to other Group companies, thus increasing the capital reserve by EUR 251 thousand.

As part of the acquisition of VoiceStream Wireless Corp., Bellevue, and Powertel, Inc., Bellevue, in 2001, Deutsche Telekom AG issued new shares from authorized capital to a trustee, for the benefit of holders of warrants, options, and conversion rights, among others. These options or conversion rights fully expired 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 18,517 thousand previously deposited shares are accounted for in the same way as treasury shares in accordance with § 272 (1a) HGB. This corresponds to 0.4 percent, or EUR 48 million, of Deutsche Telekom AG's share capital. 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.

Authorized capital and contingent capital. The shareholders' meeting on May 16, 2013 authorized the Board of Management to increase the share capital with the approval of the Supervisory Board by up to EUR 2,176,000,000 by issuing up to 850,000,000 no par value registered shares against cash and/or non-cash contributions in the period ending May 15, 2018. The 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. 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 (**2013 authorized capital**). Following the increases in share capital against contribution of dividend entitlements in the 2014, 2015, and 2016 financial years, the 2013 authorized capital amounts to EUR 1,598,139,059.20. The remaining 2013 authorized capital was entered in the commercial register on June 22, 2016.

As of December 31, 2016, the share capital was contingently increased by up to EUR 1,100,000,000, comprising up to 429,687,500 no par value shares (**2014 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 14, 2019, on the basis of the authorization resolution granted by the shareholders' meeting on May 15, 2014, 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 14, 2019, on the basis of the authorization resolution granted by the shareholders' meeting on May 15, 2014, fulfill their option or conversion obligations

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 in accordance with the particular usage of the contingent capital and after the expiry of all the option or conversion periods.

20	Deutsche Telekom at a glance	70	Corporate responsibility
26	Group organization	77	Innovation and product development
28	Group strategy	82	Employees
31	Management of the Group	87	Significant events after the reporting period
35	The economic environment	87	Forecast
40	Development of business in the Group	97	Risk and opportunity management
52	Development of business in the operating segments	112	Accounting-related internal control system
66	Development of business at Deutsche Telekom AG	113	Other disclosures

MAIN AGREEMENTS INCLUDING A CHANGE OF CONTROL CLAUSE

The main agreements entered into by Deutsche Telekom AG, which 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.

In addition, the other members of the Toll Collect consortium (Daimler Financial Services AG and Cofiroute S. A.) have a call option in the event that the ownership structure of Deutsche Telekom AG changes such that over 50 percent of its share capital or voting rights are held by a new shareholder and this change was not approved by the other members of the consortium.

In the event that Deutsche Telekom AG is taken over by another company that is not a telecommunications company based in the European Union or the United States of a similar size and stature to Deutsche Telekom AG, the Hellenic Republic has the right either to directly purchase all of Deutsche Telekom AG's shares in the Hellenic Telecommunications Organization S. A., Athens, Greece (OTE), from Deutsche Telekom AG, or to demand that they be transferred to a state body or state-owned authority named by it. For this purpose, a change of control over Deutsche Telekom shall be deemed to have taken place if one or several entities, with the exception of the Federal Republic of Germany, directly or indirectly acquire 35 percent of the voting rights in Deutsche Telekom AG.

In the master agreement establishing the procurement joint venture BuyIn in Belgium, Deutsche Telekom AG and France Télécom S. A./ Atlas Services Belgium S. A. (a subsidiary of France Télécom S. A.) agreed that if Deutsche Telekom or France Télécom comes under the controlling influence of a third party or if a third party that is not wholly owned by the France Télécom group of companies acquires shares in Atlas Services Belgium S. A., the respective other party (France Télécom and Atlas Services Belgium only jointly) can terminate the master agreement with immediate effect.

CHANGES IN THE CONSOLIDATED GROUP

61 German and 188 foreign subsidiaries are fully consolidated in Deutsche Telekom's consolidated financial statements (December 31, 2015: 64 and 190). 13 associates (December 31, 2015: 14) and 7 joint ventures (December 31, 2015: 8) are also included using the equity method. 

BUSINESS COMBINATIONS

Deutsche Telekom did not affect any material business combinations in the 2016 financial year.

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), and the International Financial Reporting Standards (IFRS).

Changes in the composition of the Board of Management and contract extensions. The Supervisory Board resolved on December 16, 2015 to extend Claudia Nemat's term of office on the Board of Management effective October 1, 2016. Dr. Thomas Kremer was reappointed as member of the Board of Management responsible for Data Privacy, Legal Affairs and Compliance effective June 1, 2017 as per the Supervisory Board's resolution of August 30, 2016. As of December 14, 2016, the Supervisory Board renewed Reinhard Clemens' term of office on the Board of Management effective December 1, 2017. On January 1, 2017, the Deutsche Telekom AG Board of Management was expanded to include the additional Board department Technology and Innovation, headed by Claudia Nemat. Srin Gopalan joined the Board of Management as of January 1, 2017 as the member responsible for Europe, in line with the Supervisory Board's resolution of June 30, 2016.

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 new 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.

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. 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.

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.



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," page 152.

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.

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.

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; in the event of an uninterrupted period of absence due to illness of more than one month, claims to variable remuneration are reduced pro rata in line with the uninterrupted period of absence. 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.

Variable performance-based remuneration

The variable remuneration of the members of the Board of Management is 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, the implementation of the strategy and adherence to the Group's Guiding Principles. 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.

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 revenue, unadjusted EBITDA and free cash flow, as well as personal targets for the individual members of the Board of Management. The personal targets consist of targets oriented toward the sustained success of the Company concerning the implementation of the strategy (30 percent) and value adherence (adherence to Guiding Principles), which 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 rewarded on a straight-line basis, capped at 150 percent of the award amount. Any higher levels of target achievement will not be taken into consideration. To further 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.

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), adjusted earnings per share, customer satisfaction, and employee satisfaction). Each parameter determines a quarter of the award amount. Levels of target achievement exceeding 100 percent are rewarded on a straight-line basis, 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.

In the 2016 financial year, the following absolute nominal amounts were pledged to the Board of Management members in the event of 100-percent target achievement.

€	2016 tranche	2015 tranche
Reinhard Clemens	650,000	650,000
Niek Jan van Damme	644,000	644,000
Thomas Dannenfeldt	670,000	550,000
Timotheus Höttges	1,342,000	1,342,000
Dr. Christian P. Illek	550,000	515,625
Dr. Thomas Kremer	550,000	550,000
Claudia Nemat	675,000	675,000

Information on the Share Matching Plan. In the 2016 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. Deutsche Telekom AG will grant one additional share for every share acquired as part of this 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.

GAS 17 and IFRS 2 require disclosure not only of the total expense related to share-based payment from matching shares in the 2016 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 2016. 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 2016 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 2016 financial year may be higher or lower than the amounts estimated here.

20	Deutsche Telekom at a glance	70	Corporate responsibility
26	Group organization	77	Innovation and product development
28	Group strategy	82	Employees
31	Management of the Group	87	Significant events after the reporting period
35	The economic environment	87	Forecast
40	Development of business in the Group	97	Risk and opportunity management
52	Development of business in the operating segments	112	Accounting-related internal control system
66	Development of business at Deutsche Telekom AG	113	Other disclosures

The total share-based payment expense for entitlements to matching shares from 2010 to 2016 to be recognized for the financial years 2015 and 2016 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 2016	Number of shares transferred in 2016 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 2016 for matching shares for the years 2012 through 2016 €	Cumulative total share-based payment expense in 2015 for matching shares for the years 2011 through 2015 €
Reinhard Clemens	144,144	14,344	24,125	185,899	184,443	161,823
Niek Jan van Damme	134,918	14,212	22,239	184,183	188,132	155,728
Thomas Dannenfeldt	27,649	14,785	0	191,619	120,267	69,482
Timotheus Höttges	203,389	29,615	35,417	383,809	353,485	235,655
Dr. Christian P. Illek	11,121	12,137	0	157,299	60,164	24,409
Dr. Thomas Kremer	58,410	12,137	0	157,299	143,105	86,360
Claudia Nemat	89,389	14,896	7,011	193,049	193,228	136,066

By December 31, 2016, Deutsche Telekom 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 2016, matching shares were again transferred to individual members of the Board of Management. A total of 88,792 shares were transferred to Board of Management members in 2016 (2015: 64,955).

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, 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.

Company pension plan

Company pension plan (existing entitlement). The members of the Board of Management are entitled to a company pension. 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, however. 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 will be attained.

The pension payments to be made increase dynamically, at a rate of 1 percent. In addition, the pension agreements include arrangements for pensions for surviving dependents in the form of entitlements for widows and orphans. In specifically provided exceptional cases, entitlement to a widow'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 respective period of service through the scheduled end of the current period of appointment serves as the basis for the period of service eligible for calculating the pension.

Company pension plan (new entitlement). A plan with a contribution-based promise in the form of a one-time capital payment upon retirement is set up for all Board of Management members with a new entitlement to a company pension. 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. For pension agreements signed before December 31, 2011, Board of Management members can also opt to draw early retirement benefits from their 60th birthday,

subject to corresponding actuarial deductions. 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.

In addition, the pension agreements include arrangements for pensions for surviving dependents in the form of entitlements for widows and orphans. In the event of a permanent incapacity for work (invalidity), the beneficiary is also entitled to the pension fund.

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

€	Service cost 2016	Defined benefit obligation (DBO) Dec. 31, 2016	Service cost 2015	Defined benefit obligation (DBO) Dec. 31, 2015
Reinhard Clemens	737,710	7,132,977	779,940	5,829,077
Niek Jan van Damme	303,289	2,874,190	312,100	2,445,816
Thomas Dannenfeldt	276,804	903,460	288,525	573,411
Timotheus Höttges	1,030,510	11,203,561	1,096,569	9,138,086
Dr. Christian P. Illek	269,168	496,574	204,741	204,741
Dr. Thomas Kremer	250,534	1,253,693	254,966	965,594
Claudia Nemat	213,170	1,756,131	296,866	1,344,197

An annual contribution of EUR 290,000 was allocated to Niek Jan van Damme in accordance with the provisions of the new company pension plan. The contributions for Thomas Dannenfeldt, Dr. Christian P. Illek, Dr. Thomas Kremer and Claudia Nemat amount to EUR 250,000 each for each year of service rendered.

The pension expense resulting from the company pension plan is shown as service cost.

Board of Management compensation for the 2016 financial year. In reliance on legal requirements and other guidelines, a total of EUR 16.7 million (2015: EUR 17.6 million) is reported in the following

table as total compensation for the 2016 financial year for the members of the Board of Management. The Board of Management compensation comprises the fixed annual remuneration as well as other 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.

The fixed annual remuneration and other remuneration are totally unrelated to performance.

20	Deutsche Telekom at a glance	70	Corporate responsibility
26	Group organization	77	Innovation and product development
28	Group strategy	82	Employees
31	Management of the Group	87	Significant events after the reporting period
35	The economic environment	87	Forecast
40	Development of business in the Group	97	Risk and opportunity management
52	Development of business in the operating segments	112	Accounting-related internal control system
66	Development of business at Deutsche Telekom AG	113	Other disclosures

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)	
Reinhard Clemens	2016	840,000	25,221	733,850	468,000	185,899	2,252,970
	2015	840,000	17,914	780,650	578,500	190,015	2,407,079
Niek Jan van Damme	2016	850,000	28,913	781,172	396,000	184,183	2,240,268
	2015	850,000	30,333	791,476	489,500	188,309	2,349,618
Thomas Dannenfeldt	2016	860,000	26,711	858,270	-	191,619	1,936,600
	2015	700,000	25,040	693,550	-	160,823	1,579,413
Timotheus Höttges	2016	1,450,000	156,742	1,760,704	547,560	383,809	4,298,815
	2015	1,450,000	67,166	1,753,994	578,500	392,408	4,242,068
Dr. Christian P. Illek	2016	700,000	37,585	674,850	-	157,299	1,569,734
	2015	525,000	1,226,828	495,413	-	121,621	2,368,862
Dr. Thomas Kremer	2016	700,000	65,910	666,600	396,000	157,299	1,985,809
	2015	700,000	62,854	665,500	438,510	160,823	2,027,687
Claudia Nemat	2016	900,000	75,616	807,975	486,000	193,049	2,462,640
	2015	900,000	69,704	810,675	600,750	197,373	2,578,502
	2016	6,300,000	416,698	6,283,421	2,293,560	1,453,157	16,746,836
	2015	5,965,000	1,499,839	5,991,258	2,685,760	1,411,372	17,553,229

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 2013 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 7.2 million (2015: EUR 7.1 million) was granted 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 201.6 million (December 31, 2015: EUR 188.1 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, 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			
	Function: Chairman of the Board of Management (CEO) since Jan. 1, 2014			
	2015	2016	2016 (min.)	2016 (max.)
Fixed remuneration	1,450,000	1,450,000	1,450,000	1,450,000
Fringe benefits	67,166	156,742	156,742	156,742
Total fixed annual remuneration	1,517,166	1,606,742	1,606,742	1,606,742
One-year variable remuneration	1,342,000	1,342,000	0	2,013,000
Multi-year variable remuneration	1,734,408	1,725,809	0	4,026,000
Of which: 2015 Variable II (4-year term)	1,342,000			
Of which: 2016 Variable II (4-year term)		1,342,000	0	2,013,000
Of which: 2015 Share Matching Plan (4-year term)	392,408			
Of which: 2016 Share Matching Plan (4-year term)		383,809	0	2,013,000
Total	4,593,574	4,674,551	1,606,742	7,645,742
Service cost	1,096,569	1,030,510	1,030,510	1,030,510
TOTAL COMPENSATION	5,690,143	5,705,061	2,637,252	8,676,252

	Dr. Christian P. Illek			
	Function: Human Resources since Apr. 1, 2015			
	2015	2016	2016 (min.)	2016 (max.)
Fixed remuneration	525,000	700,000	700,000	700,000
Fringe benefits	1,226,828	37,585	37,585	37,585
Total fixed annual remuneration	1,751,828	737,585	737,585	737,585
One-year variable remuneration	412,500	550,000	0	825,000
Multi-year variable remuneration	637,246	707,299	0	1,650,000
Of which: 2015 Variable II (4-year term)	515,625			
Of which: 2016 Variable II (4-year term)		550,000	0	825,000
Of which: 2015 Share Matching Plan (4-year term)	121,621			
Of which: 2016 Share Matching Plan (4-year term)		157,299	0	825,000
Total	2,801,574	1,994,884	737,585	3,212,585
Service cost	204,741	269,168	269,168	269,168
TOTAL COMPENSATION	3,006,315	2,264,052	1,006,753	3,481,753

20	Deutsche Telekom at a glance	70	Corporate responsibility
26	Group organization	77	Innovation and product development
28	Group strategy	82	Employees
31	Management of the Group	87	Significant events after the reporting period
35	The economic environment	87	Forecast
40	Development of business in the Group	97	Risk and opportunity management
52	Development of business in the operating segments	112	Accounting-related internal control system
66	Development of business at Deutsche Telekom AG	113	Other disclosures

Reinhard Clemens				Niek Jan van Damme				Thomas Dannenfeldt			
Function: T-Systems since Dec. 1, 2007				Function: Germany since Mar. 1, 2009				Function: Finance (CFO) since Jan. 1, 2014			
2015	2016	2016 (min.)	2016 (max.)	2015	2016	2016 (min.)	2016 (max.)	2015	2016	2016 (min.)	2016 (max.)
840,000	840,000	840,000	840,000	850,000	850,000	850,000	850,000	700,000	860,000	860,000	860,000
17,914	25,221	25,221	25,221	30,333	28,913	28,913	28,913	25,040	26,711	26,711	26,711
857,914	865,221	865,221	865,221	880,333	878,913	878,913	878,913	725,040	886,711	886,711	886,711
650,000	650,000	0	975,000	644,000	644,000	0	966,000	550,000	670,000	0	1,005,000
840,015	835,899	0	1,950,000	832,309	828,183	0	1,932,000	710,823	861,619	0	2,010,000
650,000				644,000				550,000			
	650,000	0	975,000		644,000	0	966,000		670,000	0	1,005,000
190,015				188,309				160,823			
	185,899	0	975,000		184,183	0	966,000		191,619	0	1,005,000
2,347,929	2,351,120	865,221	3,790,221	2,356,642	2,351,096	878,913	3,776,913	1,985,863	2,418,330	886,711	3,901,711
779,940	737,710	737,710	737,710	312,100	303,289	303,289	303,289	288,525	276,804	276,804	276,804
3,127,869	3,088,830	1,602,931	4,527,931	2,668,742	2,654,385	1,182,202	4,080,202	2,274,388	2,695,134	1,163,515	4,178,515

Dr. Thomas Kremer				Claudia Nemat			
Function: Data Privacy, Legal Affairs and Compliance since June 1, 2012				Function: Europe and Technology since Oct. 1, 2011			
2015	2016	2016 (min.)	2016 (max.)	2015	2016	2016 (min.)	2016 (max.)
700,000	700,000	700,000	700,000	900,000	900,000	900,000	900,000
62,854	65,910	65,910	65,910	69,704	75,616	75,616	75,616
762,854	765,910	765,910	765,910	969,704	975,616	975,616	975,616
550,000	550,000	0	825,000	675,000	675,000	0	1,012,500
710,823	707,299	0	1,650,000	872,373	868,049	0	2,025,000
550,000				675,000			
	550,000	0	825,000		675,000	0	1,012,500
160,823				197,373			
	157,299	0	825,000		193,049	0	1,012,500
2,023,677	2,023,209	765,910	3,240,910	2,517,077	2,518,665	975,616	4,013,116
254,966	250,534	250,534	250,534	296,866	213,170	213,170	213,170
2,278,643	2,273,743	1,016,444	3,491,444	2,813,943	2,731,835	1,188,786	4,226,286

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 2016. 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		Reinhard Clemens		Niek Jan van Damme	
	Function: Chairman of the Board of Management (CEO) since Jan. 1, 2014		Function: T-Systems since Dec. 1, 2007		Function: Germany since Mar. 1, 2009	
	2015	2016	2015	2016	2015	2016
Fixed remuneration	1,450,000	1,450,000	840,000	840,000	850,000	850,000
Fringe benefits	67,166	156,742	17,914	25,221	30,333	28,913
Total fixed annual remuneration	1,517,166	1,606,742	857,914	865,221	880,333	878,913
One-year variable remuneration	1,753,994	1,760,704	780,650	733,850	791,476	781,172
Multi-year variable remuneration	965,664	1,099,526	917,069	839,525	763,439	749,066
Of which: Variable II (4-year term) ^a	578,500	547,560	578,500	468,000	489,500	396,000
Of which: Share Matching Plan (4-year term) ^b	387,164	551,966	338,569	371,525	273,939	353,066
Other	0	0	0	0	0	0
Total	4,236,824	4,466,972	2,555,633	2,438,596	2,435,248	2,409,151
Service cost	1,096,569	1,030,510	779,940	737,710	312,100	303,289
TOTAL COMPENSATION	5,333,393	5,497,482	3,335,573	3,176,306	2,747,348	2,712,440

	Thomas Dannenfeldt		Dr. Christian P. Illek		Dr. Thomas Kremer		Claudia Nemat	
	Function: Finance (CFO) since Jan. 1, 2014		Function: Human Resources since Apr. 1, 2015		Function: Data Privacy, Legal Affairs and Compliance since June 1, 2012		Function: Europe and Technology since Oct. 1, 2011	
	2015	2016	2015	2016	2015	2016	2015	2016
Fixed remuneration	700,000	860,000	525,000	700,000	700,000	700,000	900,000	900,000
Fringe benefits	25,040	26,711	1,226,828	37,585	62,854	65,910	69,704	75,616
Total fixed annual remuneration	725,040	886,711	1,751,828	737,585	762,854	765,910	969,704	975,616
One-year variable remuneration	693,550	858,270	495,413	674,850	665,500	666,600	810,675	807,975
Multi-year variable remuneration	0	0	0	0	438,510	396,000	600,750	596,283
Of which: Variable II (4-year term) ^a	0	0	0	0	438,510	396,000	600,750	486,000
Of which: Share Matching Plan (4-year term) ^b	0	0	0	0	0	0	0	110,283
Other	0	0	0	0	0	0	0	0
Total	1,418,590	1,744,981	2,247,241	1,412,435	1,866,864	1,828,510	2,381,129	2,379,874
Service cost	288,525	276,804	204,741	269,168	254,966	250,534	296,866	213,170
TOTAL COMPENSATION	1,707,115	2,021,785	2,451,982	1,681,603	2,121,830	2,079,044	2,677,995	2,593,044

^a Variable II as shown in the column for 2016 relates to the payment of the 2013 tranche; the figure in the column for 2015 relates to the payment of the 2012 tranche.

^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 2011 or 2012.

20	Deutsche Telekom at a glance	70	Corporate responsibility
26	Group organization	77	Innovation and product development
28	Group strategy	82	Employees
31	Management of the Group	87	Significant events after the reporting period
35	The economic environment	87	Forecast
40	Development of business in the Group	97	Risk and opportunity management
52	Development of business in the operating segments	112	Accounting-related internal control system
66	Development of business at Deutsche Telekom AG	113	Other disclosures

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 2016 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 Chairman of the Audit Committee receives EUR 80,000.00, ordinary members of the Audit Committee EUR 40,000.00.
- The Chairman of the General Committee receives EUR 70,000.00, ordinary members of the General Committee EUR 30,000.00.
- The Chairman of the Nomination Committee receives EUR 25,000.00, ordinary members of the Nomination Committee EUR 12,500.00.
- The Chairman of any other committee receives EUR 40,000.00, ordinary members of any other committee EUR 25,000.00.

Chairmanship 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 2016 amounted to EUR 2,858,916.68 (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 2016 is as follows:

Member of the Supervisory Board	Fixed remuneration	Meeting attendance fee	Total
Baldauf, Sari	95,000.00	8,000.00	103,000.00
Bednarski, Josef	165,000.00	25,000.00	190,000.00
Dr. Bernotat, Wulf H.	120,000.00	10,000.00	130,000.00
Brandl, Monika	95,000.00	10,000.00	105,000.00
Geismann, Johannes	152,500.00	24,000.00	176,500.00
Dr. von Grünberg, Hubertus (until May 25, 2016)	45,833.34	3,000.00	48,833.34
Hanas, Klaus-Dieter	95,000.00	9,000.00	104,000.00
Hauke, Sylvia ^a	120,000.00	9,000.00	129,000.00
Hinrichs, Lars	95,000.00	9,000.00	104,000.00
Dr. Jung, Helga (since May 25, 2016)	46,666.67	5,000.00	51,666.67
Kallmeier, Hans-Jürgen ^b	135,000.00	15,000.00	150,000.00
Prof. Dr. Kaschke, Michael	110,000.00	11,000.00	121,000.00
Koch, Nicole ^c (since January 1, 2016)	70,000.00	7,000.00	77,000.00
Kollmann, Dagmar P.	187,500.00	16,000.00	203,500.00
Kreusel, Petra Steffi ^d	110,000.00	14,000.00	124,000.00
Prof. Dr. Lehner, Ulrich (Chairman)	300,000.00	21,000.00	321,000.00
Schröder, Lothar ^e (Deputy Chairman)	233,750.00	20,000.00	253,750.00
Dr. Schröder, Ulrich	135,000.00	7,000.00	142,000.00
Sommer, Michael	95,000.00	6,000.00	101,000.00
Spoo, Sibylle	95,000.00	7,000.00	102,000.00
Streibich, Karl-Heinz	111,666.67	10,000.00	121,666.67
	2,612,916.68	246,000.00	2,858,916.68

^a In addition to remuneration for her activities as a member of the Supervisory Board of Deutsche Telekom AG, Sylvia Hauke also received other remuneration amounting to EUR 15,000.00 (including meeting attendance fees) in the 2016 financial year (for her mandate as member of the supervisory board of Telekom Deutschland GmbH).

^b In addition to remuneration for his activities as a member of the Supervisory Board of Deutsche Telekom AG, Hans-Jürgen Kallmeier also received other remuneration amounting to EUR 16,000.00 (including meeting attendance fees) in the 2016 financial year (for his mandate as member of the supervisory board of T-Systems International GmbH).

^c 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 2016 financial year (for her mandate as member of the supervisory board of Telekom Shop Vertriebsgesellschaft mbH).

^d 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 14,500.00 (including meeting attendance fees) in the 2016 financial year (for her mandate as member of the supervisory board of T-Systems International GmbH).

^e 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 38,500.00 (including meeting attendance fees) in the 2016 financial year (EUR 20,000.00 for his mandate as member of the supervisory board of Telekom Deutschland GmbH, EUR 6,500.00 for his mandate as a member of the supervisory board of Deutsche Telekom Services Europe GmbH, and EUR 12,000.00 as Chairman of the Data Privacy Advisory Council).

