

Combined management report

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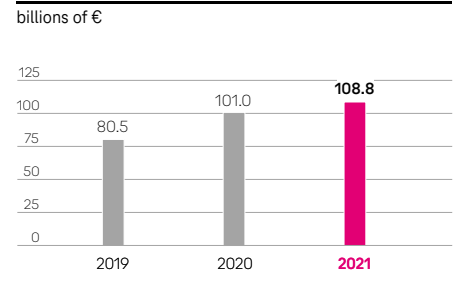
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Selected financial data of the Group

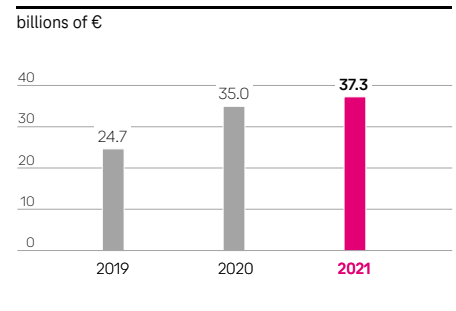
Net revenue

- Net revenue increased by 7.7 % to EUR 108.8 billion. In organic terms, too, revenue increased by EUR 4.7 billion or 4.5 %. Service revenue increased by EUR 5.2 billion or 6.5 % to EUR 84.1 billion.
- Our United States segment recorded revenue growth of 11.7 %. In organic terms, revenue increased by 5.8 % year-on-year due to higher service and terminal equipment revenues.
- In our Germany and Europe segments, we increased revenue by 1.6 % and 0.4 % respectively, on account of strong business performance. In organic terms, revenue in Europe was up by as much as 2.4 %.
- Revenue in our Systems Solutions segment decreased year-on-year by 3.4 %, due primarily to the decline in traditional IT infrastructure business, in line with expectations.
- In the Group Development segment, revenue increased by 9.8 % year-on-year on the back of operational and structural growth at T-Mobile Netherlands and GD Towers. In organic terms, revenue increased by 4.6 %.



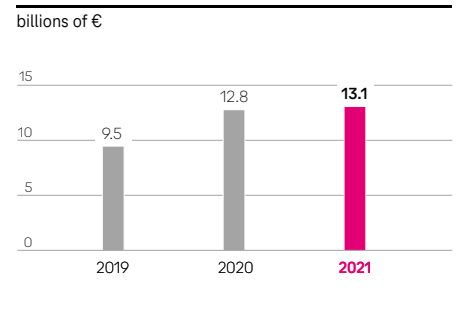
EBITDA AL (adjusted for special factors)

- Adjusted EBITDA AL grew by 6.6 % to EUR 37.3 billion with all operating segments contributing to this positive trend. In organic terms, our adjusted EBITDA AL increased by EUR 0.7 billion or 1.9 %.
- Adjusted EBITDA AL rose sharply by 8.1 % in the United States, in part as a result of the business combination with Sprint. In organic terms, adjusted EBITDA AL remained on a par with the prior-year level. Adjusted core EBITDA AL, which we use as an indicator of earnings not distorted by the negative effects of the planned withdrawal from the terminal equipment lease model, increased by EUR 2.5 billion or 14.7 %.
- Germany and Europe posted growth in adjusted EBITDA AL of 3.6 % and 2.5 % respectively, driven by high-value revenue growth and enhanced cost efficiency.
- In our Systems Solutions segment, adjusted EBITDA AL grew by 2.5 %. Efficiency effects from our transformation program and increased revenue in the growth areas exceeded the decline in the traditional IT infrastructure business.
- Group Development posted substantial growth in adjusted EBITDA AL of 18.7 %. This was driven primarily by revenue growth at T-Mobile Netherlands and GD Towers, and efficient management of costs.
- At 34.3 %, the Group's adjusted EBITDA AL margin decreased slightly against the prior-year level. The margin was 39.4 % in Germany, 35.2 % in Europe, and 33.2 % in the United States.



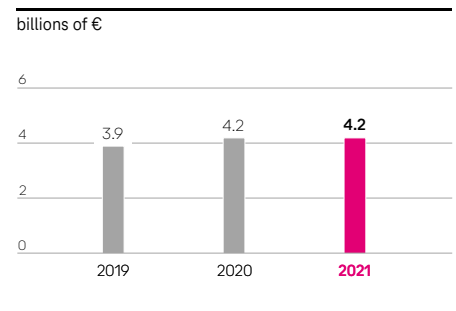
EBIT

- EBIT increased by EUR 0.3 billion or 2.0 % to EUR 13.1 billion.
- EBITDA AL was negatively affected by special factors of EUR 3.4 billion compared to expenses of EUR 1.8 billion in the prior year. Expenses of EUR 2.6 billion were recorded in connection with the business combination of T-Mobile US and Sprint. These related to acquisition and integration costs, as well as the restructuring costs for realizing cost efficiencies. The sale of the Dutch cell tower business resulted in a gain on deconsolidation of EUR 0.2 billion. Expenses in connection with staff restructuring measures were down year-on-year by EUR 0.6 billion. Reversals of impairment losses of EUR 1.7 billion had been recognized in the prior year and mainly related to the partial reversal of impairment losses on spectrum licenses at T-Mobile US, which increased the carrying amount.
- Depreciation, amortization, and impairment losses were EUR 1.7 billion higher than in the prior year due in particular to the first-time inclusion of Sprint for the full year. The reduction in the useful life of leased network technology for cell sites resulted in an increase in depreciation and amortization of EUR 0.8 billion.



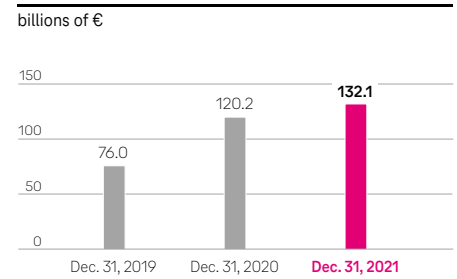
Net profit

- Net profit remained stable at EUR 4.2 billion.
- Loss from financial activities increased by EUR 1.0 billion to EUR 5.1 billion, partly in connection with an increase in finance costs due to the assumption of Sprint's financial liabilities. Other financial income/expense decreased by EUR 0.5 on a net basis in connection with the measurement of derivatives and the measurement of provisions and liabilities.
- Tax expense came to EUR 1.8 billion compared with EUR 1.9 billion in the prior year.
- Profit attributable to non-controlling interests decreased by EUR 0.7 billion to EUR 1.9 billion.
- Adjusted earnings per share amounted to EUR 1.22 compared with EUR 1.20 in the prior year.



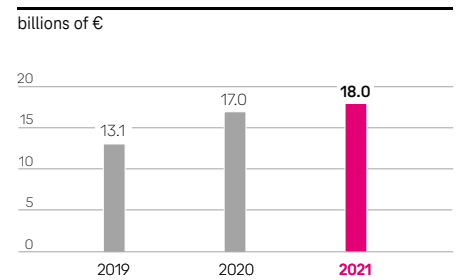
Net debt

- Net debt increased by EUR 11.9 billion to EUR 132.1 billion compared with the end of 2020.
- This increase was attributable in particular to the acquisition of spectrum (EUR 8.4 billion), primarily in the United States; exchange rate effects (EUR 6.9 billion); and additions of lease liabilities (EUR 5.3 billion). Dividend payments – including to non-controlling interests – (EUR 3.1 billion) and the acquisition of Shentel (EUR 1.9 billion) further increased net debt.
- Free cash flow of EUR 14.3 billion had a reducing effect.



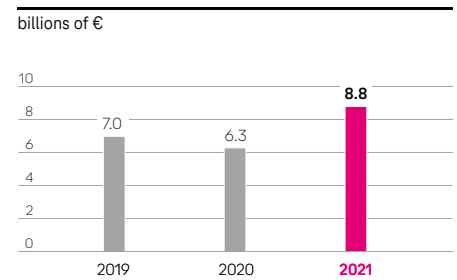
Cash capex (before spectrum investment)

- Cash capex (before spectrum investment) increased by EUR 1.0 billion to EUR 18.0 billion.
- This increase is largely attributable to the first-time inclusion of Sprint for the full year and the ongoing 5G network build-out in the United States. In Germany and Europe we continued to invest in the provision of broadband and fiber-optic technology and in 5G as part of our integrated network strategy.
- Cash capex (including spectrum investment) increased by EUR 7.7 billion to EUR 26.4 billion. In the reporting year, the United States segment acquired FCC spectrum licenses for a total amount of EUR 8.3 billion. Another EUR 0.1 billion was paid for spectrum in the Europe segment. The prior-year figure included EUR 1.7 billion for the acquisition of mobile spectrum licenses, which primarily related to the United States, Europe, and Group Development segments.



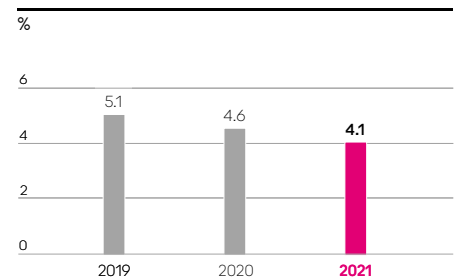
Free cash flow AL (before dividend payments and spectrum investment)^a

- Free cash flow AL (before dividend payments and spectrum investment) increased by EUR 2.5 billion year-on-year to EUR 8.8 billion.
- Net cash from operating activities increased by EUR 4.7 billion. This was attributable in particular to the sustained positive performance of the operating segments, especially in the United States including Sprint.
- Apart from the EUR 1.0 billion higher cash capex (before spectrum investment), the increase was partially offset in particular by an advance payment for the lease of cell sites made by T-Mobile US in September 2021 and higher interest payments, mainly as a result of the financial liabilities assumed and the restructuring carried out in connection with the acquisition of Sprint, and the related increase in financing. Higher income tax payments also had an increasing effect on free cash flow AL.



ROCE

- Return on capital employed (ROCE), which continues to be impacted by the integration costs in connection with the business combination with Sprint, decreased by 0.5 percentage points to 4.1%. This was due to stronger percentage growth in average operating assets (NOA) than in net operating profit after taxes (NOPAT).
- The increase in NOA was mainly driven by the acquisition of additional spectrum licenses at T-Mobile US and our consistently high investment volume.
- NOPAT was up slightly year-on-year. This development is largely attributable to higher integration costs in connection with the business combination of T-Mobile US and Sprint. In the prior year, NOPAT had been positively affected by the partial reversal of impairment losses on spectrum licenses, which had increased the carrying amount.



For further information, please refer to the section [“Development of business in the Group.”](#)

For further information on the level of achievement of our main financial and non-financial key performance indicators, please refer to the relevant section [“Development of business in the Group – Comparison of the Group’s expectations with actual figures.”](#)



^a Before interest payments for zero-coupon bonds and before termination of forward-payer swaps at T-Mobile US (both in 2020).

Group organization



Business activities

With 248 million mobile customers, 26 million fixed-network lines, and 22 million broadband customers, we are one of the leading integrated telecommunications companies worldwide. We offer our consumers fixed-network/broadband, mobile, internet, and internet-based TV products and services, as well as ICT solutions for our business and corporate customers. We have an international focus and are represented in more than 50 countries. With 216,528 employees worldwide (as of December 31, 2021), we generated revenue of EUR 108.8 billion in the 2021 financial year. 77.0 % of the Group's net revenue is generated outside of Germany.

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

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

For further information about our Guiding Principles, please refer to the section "[Employees](#)."

Our **identity** describes the mission of Deutsche Telekom: Why are we here, what does our Company stand for, and what is our purpose? It defines our corporate purpose and describes what we at Deutsche Telekom stand for: We want to be a sustainably growing company that delights its customers, creates value for its investors, and in which employees enjoy their work. Our network is fast, reliable, secure, and should be easily accessible for everyone. In addition, it has been operated throughout the Group with electricity from 100 % renewable sources since 2021.   But, we are more than just another company that provides society with infrastructure. We want to connect people and make their lives permanently easier and more enriched. This is our mission. We are a close and trusted companion to the customer; transparent, fair, and open to dialog. We identify innovative products at an early stage and develop them in collaboration with our partners. It is our contribution to social togetherness. Our identity reflects all of this. We want everyone to #TAKEPART as is summarized in one short purpose statement: We won't stop until everyone is connected.

Segment structure

Our financial reporting aligns with our Group strategy and is divided into five operating segments plus the Group Headquarters & Group Services segment, each of which we describe in detail below.

Our **Germany** operating segment comprises all fixed-network and mobile business activities for consumers and business customers, including separate sales entities in Germany to allow a customer-centric sales approach. As a pioneer of digitalization, the segment offers its customers a tailored service and product portfolio that is designed to be innovative while at the same time secure and simple. The Germany operating segment also focuses on the wholesale business to provide telecommunications services for carriers. The bundling of customer service activities places a further focus on customer satisfaction and quality assurance. Build-out of the mobile and fixed networks is managed by the Technology business unit in this segment.

Our **United States** operating segment combines all mobile activities in the U.S. market. T-Mobile US provides service, devices, and accessories across its flagship brands. In addition, we sell devices to dealers and other third-party distributors for resale. T-Mobile US is the second largest provider (customer related) in the United States. The positive business development has been built on the back of the various Un-carrier initiatives launched in the last few years. T-Mobile US also supercharged upon completion of the business combination with Sprint on April 1, 2020. As the supercharged Un-carrier, T-Mobile US is on a mission to build America's best 5G network, offering customers unrivaled coverage and capacity. We also offer a wide selection of wireless devices, including smartphones, wearables, tablets, and other mobile communication devices, which are manufactured by various suppliers. T-Mobile US also provides products that are complementary to its wireless communications services, including device protection, high-speed internet, and wireline communication services.

Our **Europe** operating segment comprises all fixed-network and mobile operations of the national companies in Greece, Hungary, Poland, the Czech Republic, Croatia, Slovakia, Austria, North Macedonia, and Montenegro. We are an integrated provider of telecommunications services in these countries. With the approval of the responsible authorities, on September 30, 2021 OTE consummated the sale of its 54 % stake in Telekom Romania Communications to Orange Romania. Consequently, our focus in Romania is on mobile operations. Besides traditional B2C fixed-network and mobile business, most of our national companies also offer ICT solutions for business customers.

As a leading provider of IT services to businesses in German-speaking countries, our **Systems Solutions** operating segment offers a focused B2B product and solution portfolio under the T-Systems brand. With its horizontal offerings for advisory services, cloud computing, and digitalization solutions, T-Systems addresses the most attractive growth areas in the information technology market. Data sovereignty and security solutions are at the core of the product options, supplemented with strategic partnerships. Focused vertical offerings penetrate deep into the value chains of selected industries (automotive, healthcare, public sector, and transportation). We have been implementing a comprehensive transformation program since 2018, part of which has been to realign both our organization and our workflows, and make adjustments to our capacities. We now have four portfolio units: Cloud Services (Public Cloud, SAP AO, Managed Infrastructure Services & Private Cloud), Digital Solutions (including SAP SI), Security, and Advisory (with Detecon as an integrated consulting provider). The Road Charging portfolio unit was hived off as Road User Services GmbH to ease the path to local partnerships.

Our **Group Development** operating segment actively manages entities, subsidiaries, and equity investments to grow their value while giving them the entrepreneurial freedom they need to promote their continued strategic development. This approach led to the creation of GD Towers within the Group Development segment. Following the sale of the Dutch cell tower business in the reporting year, GD Towers has exclusively looked after the German and Austrian cell tower businesses since the second quarter of 2021. On September 6, 2021, we signed an agreement to sell T-Mobile Netherlands. The transaction is expected to be completed in the first quarter of 2022. The investment management group DTCP; Comfort Charge, which is a provider of e-mobility charging infrastructure; and the Group functions of Mergers & Acquisitions and Strategic Portfolio Management are also assigned to Group Development.

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

Our Technology and Innovation Board of Management department unites the cross-segment technology, innovation, IT, and security functions of our Germany, Europe, and Systems Solutions operating segments. These include Deutsche Telekom IT, which focuses on the Group's internal IT projects, and our central innovation unit, Product Innovation and Customer Experience (PIC), which works closely with our operating segments to drive topics such as digitalization, big data, software-defined networks, voicification, virtualization, and cloud services. Our Innovation Hub (IHUB) pools all of the expertise required for future innovation projects in an agile working environment to ensure we stay flexible and innovative. In the newly created Technology Delivery International (TDI) unit, we pool expertise to position ourselves as a strong partner to the technology units in our national companies and develop, produce, operate, and scale platforms and services across borders from a single source. In the reporting year this still included International Technology and Service Delivery (ITS), which harmonizes the planning, development, and operation of products, services, and platforms across our national companies in Europe taking account of technological and commercial aspects. Strategy & Technology Innovation (S&TI) ensures efficient and customer-centric research and innovation with a focus on mobile and fixed-network communications. Group Security (GSC) is responsible for developing and transforming the Group-wide security strategy.

Changes to the segment and organizational structure in 2021

In the reporting year, the following changes and/or additions to the segment structure were recorded from the Group's point of view:

Strategic measures to secure control of T-Mobile US in the long term. On September 6, 2021, Deutsche Telekom took strategic action to increase its stake in T-Mobile US in a move that secures the existing control over the U.S. subsidiary and full consolidation in the long term:

Under the deal signed between Deutsche Telekom and SoftBank Group (SoftBank) on September 6, 2021, the objective of which is to **increase Deutsche Telekom's stake in T-Mobile US**, Deutsche Telekom acquired a total of around 45.4 million T-Mobile US shares from SoftBank. To this end Deutsche Telekom exercised, on September 23, 2021, a portion of the stock options it had received from SoftBank in June 2020 to purchase shares in T-Mobile US. SoftBank received in return 225 million new shares in Deutsche Telekom AG from the 2017 Authorized Capital, excluding subscription rights for existing shareholders. The capital increase against contribution in kind amounted to EUR 576 million. The capital increase of Deutsche Telekom AG was carried out with effect upon entry into the commercial register on September 28, 2021. As a result of this transaction, SoftBank has become a shareholder in Deutsche Telekom AG with around 4.5 % of the outstanding shares. In connection with the exercise of the existing stock options, the weighted average price for the total around 45.4 million T-Mobile US shares acquired as part of this share swap calculates to around USD 118 per T-Mobile US share. For the 225 million Deutsche Telekom shares that were received by SoftBank and which are subject to a lock-up until 2024, the two companies agreed a value of EUR 20 per share. This capital increase against contribution in kind brings the number of outstanding shares of Deutsche Telekom AG up from 4,761 million shares to 4,986 million shares. Upon its completion, the transaction raised Deutsche Telekom's stake in T-Mobile US by 3.6 percentage points to 46.8 %. The percentage of T-Mobile US shares for which Deutsche Telekom can exercise voting rights, including an agreement concluded with SoftBank in connection with the acquisition of Sprint, amounted to 52.0 % as of December 31, 2021. The aim is to support SoftBank in their efforts to take a seat on Deutsche Telekom AG's Supervisory Board. Deutsche Telekom and SoftBank have also agreed a new strategic partnership that will position Deutsche Telekom as a major European partner in the SoftBank ecosystem.

Deutsche Telekom is also weighing plans to invest up to USD 2.4 billion (around EUR 2.1 billion) of the proceeds from the **planned sale of T-Mobile Netherlands**, which was agreed on September 6, 2021, to exercise further fixed-price and variable stock options to purchase T-Mobile US shares. These depend, in half, on the average share price of T-Mobile US, and a fixed price has been set for the other half. This would further increase Deutsche Telekom's stake in T-Mobile US by approximately 1.6 percentage points, depending on the number of shares to be acquired. Deutsche Telekom expects its total stake to be around 48.4 % upon completion of these two transactions.

For further information on the agreed sale of T-Mobile Netherlands, please refer to the section "[\(Expected\) changes to the segment and organizational structure in 2022.](#)"

Acquisition of Shentel. On May 28, 2021, a purchase agreement was signed between T-Mobile US and Shenandoah Personal Communications Company (Shentel) – a local provider of mobile network products in certain regions of some U.S. states – for the acquisition of assets and liabilities directly associated with the wireless telecommunications operation of Shentel. The transaction was consummated on July 1, 2021 after obtaining the necessary approvals from the regulatory authorities and satisfying the other closing conditions. The purchase price was USD 1.9 billion (EUR 1.6 billion).

Sale of Telekom Romania Communications. On November 6, 2020, OTE concluded an agreement with Orange Romania concerning the sale of its 54 % stake in Telekom Romania Communications (TKR) – at the time assigned to the Europe operating segment – which operates the Romanian fixed-network business, to Orange Romania. The transaction was approved by the authorities and then consummated on September 30, 2021. The purchase price is EUR 296 million. The net gain on deconsolidation resulting from the sale is immaterial from a Group perspective. TKR's 30 % stake in Telekom Romania Mobile Communications was acquired by OTE on September 9, 2021 as previously agreed for a purchase price of EUR 59 million.

Combination of the cell tower business in the Netherlands and creation of an infrastructure fund. On January 21, 2021, Deutsche Telekom, Cellnex Telecom (Cellnex), the newly established independently managed investment company Digital Infrastructure Vehicle II (DIV), and others signed an agreement to merge Deutsche Telekom's and Cellnex's respective Dutch subsidiaries for passive mobile infrastructure into Cellnex Netherlands (Cellnex NL). Following approval of the deal by the national competition authority, the Dutch cell tower company T-Mobile Infra – at the time assigned to the Group Development operating segment – was sold to DIV effective June 1, 2021 and subsequently contributed into Cellnex NL. Deutsche Telekom received cash proceeds of EUR 0.4 billion. The gain on disposal of EUR 0.3 billion breaks down as follows: EUR 0.2 billion was included in other operating income in the reporting year and EUR 0.1 billion will be recognized pro rata in subsequent periods through the sale-and-leaseback transactions described below. Immediately prior to the sale, T-Mobile Infra also paid Deutsche Telekom AG a dividend of EUR 0.3 billion. Deutsche Telekom obtained a 37.65 % stake in the new Cellnex NL, which is indirectly included in the consolidated financial statements through the investment in DIV and accounted for using the equity method. T-Mobile Netherlands will continue to have full access to the contributed passive mobile infrastructure by means of a long-term agreement at arm's length conditions. The lease component included in the agreement fulfills the conditions of a sale-and-leaseback transaction. Right-of-use assets in the amount of EUR 0.3 billion and lease liabilities in the amount of EUR 0.4 billion were recognized in this context as of June 1, 2021.

Reassignment of the Internet of Things (IoT) growth area. Effective January 1, 2021, Deutsche Telekom reassigned the responsibility for business and profit and loss for Deutsche Telekom IoT GmbH from the Systems Solutions operating segment to the B2B unit in the Germany operating segment. The Group subsidiary is responsible for the IoT business of Deutsche Telekom. This reassignment puts us in a position to serve the IoT market more quickly and thus to strengthen Deutsche Telekom's position on this growth market. Prior-year comparatives in both of the segments affected (development of operations, customer development, headcount development, and order entry) were adjusted retrospectively.

Transfer of the Austrian cell tower business. As of January 1, 2021, Deutsche Telekom transferred its Austrian cell tower business from the Europe operating segment to GD Towers in the Group Development operating segment to enhance efficiency in the management of the cell tower business. In addition, GD Towers will increase its efforts to expand third-party business, increase profitability, and develop growth areas. Prior-year comparatives in both of the segments affected have not been adjusted.

Reorganization of DT IT. As of January 1, 2021, Deutsche Telekom IT (DT IT) Russia, DT IT Slovakia, and DT IT Hungary were reassigned from the Germany operating segment to the Group Headquarters & Group Services segment. Prior-year comparatives in both of the segments affected have not been adjusted.

(Expected) changes to the segment and organizational structure in 2022

Agreed sale of T-Mobile Netherlands. On September 6, 2021, Deutsche Telekom and Tele2 agreed to sell our subsidiary T-Mobile Netherlands, which is assigned to the Group Development operating segment – to WP/AP Telecom Holdings IV, a private equity consortium advised by Apax Partners and Warburg Pincus. The transaction brings to a close the review of strategic options regarding T-Mobile Netherlands announced at the Capital Markets Day 2021. The preliminary sale price is based on an enterprise value of EUR 5.1 billion. The cash proceeds – based on our shareholding of 75 % – are expected to be around EUR 3.8 billion. Deutsche Telekom is weighing plans to invest a portion of the cash proceeds from the sale to further increase its stake in T-Mobile US. The transaction is subject to approval by the authorities as well as other closing conditions. The assets and liabilities of T-Mobile Netherlands as of December 31, 2021 are reported in our consolidated statement of financial position as “held for sale.” The transaction is expected to be completed in the first quarter of 2022.

Fiber-optic build-out through joint venture with IFM. On November 5, 2021, Deutsche Telekom announced that IFM Global Infrastructure Fund – advised by IFM Investors – will acquire a stake of 50 % in GlasfaserPlus GmbH, a fiber-optic build-out entity. The agreed purchase price for the 50 % stake in the subsidiary, which is assigned to the Germany operating segment, amounts to EUR 0.9 billion, half of which is to be settled upon conclusion of the transaction, and the remainder once progress has been made in the build-out. The newly established joint venture is to build out an additional 4 million gigabit-capable FTTH lines in rural and development areas between 2022 and 2028. This transaction underpins Deutsche Telekom's aim of being the leading company for the fiber-optic build-out in Germany. As a consequence of the agreed sale of the 50 % stake in the company and the concomitant future loss of control of the company on completion of the transaction, the assets and liabilities of GlasfaserPlus as of December 31, 2021 are recognized in the consolidated statement of financial position as “held for sale.” On completion of the transaction, the stake in the joint venture will be included in the consolidated financial statements using the equity method. Following its approval by the European Commission on January 25, 2022, the transaction is expected to be completed before the end of the first quarter of 2022.

Group strategy

From Leading European Telco to Leading Digital Telco

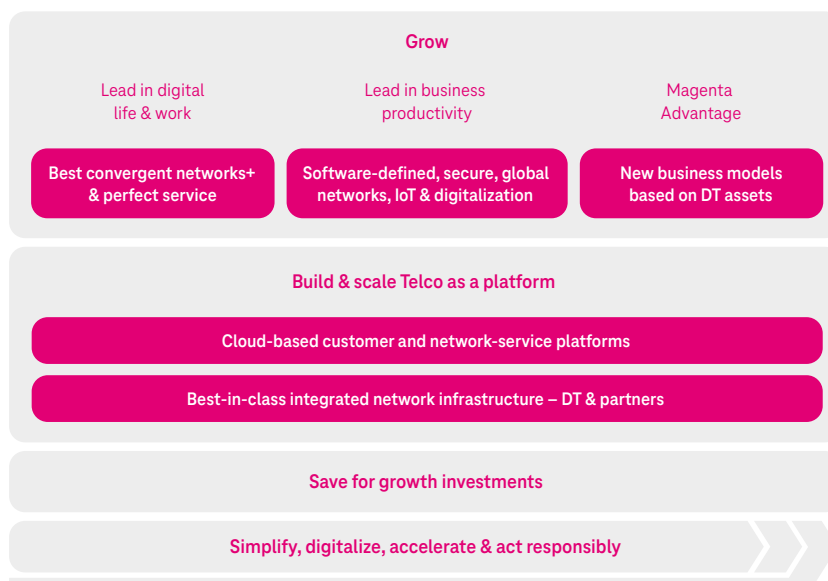
Since 2014, we have been aligning all of our corporate activities with our Leading European Telco strategy – with the aim of becoming Europe's leading telecommunications provider. This strategy has been tremendously successful for us. Deutsche Telekom is Europe's leading telecommunications company by a clear margin: in terms of market capitalization, revenue, and earnings (as of December 31, 2021). And our Group continues to grow, as confirmed by our most important financial performance indicators and customer development on both sides of the Atlantic. We raised our full-year guidance for 2021 three times in the course of the year, despite the coronavirus pandemic. And last but not least, at 79 %, understanding and support of our strategy among the workforce is at an all-time high (employee survey, November 2021). In short, over the past seven years we have found the right balance: rigorously implementing our Group strategy on the one hand, while in parallel anticipating changes in our ecosystem early on and adapting the strategy with pinpoint precision to new market conditions as and when necessary. We find ourselves in an extremely positive situation, but rather than use it as an opportunity to relax, we see it as the perfect launchpad to leverage our strong position and prepare Deutsche Telekom for future demands. After all, the telecommunications industry faces change on an almost unprecedented scale. Digitalization is the main catalyst for a number of key trends:

- Digitalization is shaping demand among consumers and business customers alike: Consumers want their product and service experiences to be fully customized to their personal needs, context-sensitive, and to work seamlessly. For business customers, requirements are driven by the new way of working: digital, hybrid, and app-centric. They expect secure connectivity as well as flexible service and product models that integrate easily and securely into workflows – and all from a single source and “as-a-service.”
- We are seeing companies from other industries pushing onto the market with lean, software-defined production models. Providers such as Google, Microsoft, and Amazon Web Services are expanding into the global connectivity field and increasingly providing network functions in their cloud environments. More and more, they are positioning themselves as vendors of connectivity services not only to telcos, but also as partners for business customers.
- Alternative network providers and technologies (e.g., satellite connectivity) are gaining in relevance and can be both a risk (in terms of substitution of parts of our core business) and opportunity for us (e.g., network coverage in sparsely populated areas). The connectivity market continues to fragment further, bringing ever-greater complexity. Especially among business customers with international footprints, demand is growing for a one-stop shop offering global network orchestration and a network customized to individual business cases. At the same time, the parallel build-out of broadband and mobile infrastructure (optical fiber and 5G) calls for telecommunications companies to commit to high investments and find innovative approaches to implementation, for instance by using third-party infrastructure or partnering with investors.
- Sustained economic globalization, world population growth, and increasing use of digital technologies all put a strain on the available resources. It is thus imperative that we find a sustainable, more ecological way of doing business and act with a greater focus on social responsibility.
- The acquisition of new skills and expertise is another vital aspect of digital transformation. The challenge here lies in quickly building up a critical mass of digital talent. Flexible work models, global recruitment processes, and responsible corporate action are gaining relevance.

In light of these trends, we aim to transform ourselves from our position as Leading European Telco into the **Leading Digital Telco**. With our unique footprint on both sides of the Atlantic, we are already excellently positioned in the Western tech sphere to achieve this. We are a global enterprise with a considerable presence in Europe, European roots and values, and an extremely strong business in the United States. Our goal is clear: We want to align ourselves long-term with the needs of our customers and transform ourselves into a digital company to hold our own against new competitors and continue our growth course. Our future growth is based on three pillars: “Lead in digital life & work,” “Lead in business productivity,” and “Magenta Advantage.” Building and operating the best convergent networks remains at the core of our strategy and is an important driver for our growth areas. We realize our aim to lead in technology by investing not only in network infrastructure, but also in establishing cloud-based service platforms in line with our strategy: “Build & scale Telco as a platform.” We leverage our international footprint to generate synergies across the Group and to carry weight alongside the global tech giants.

The two areas of operation, “Save for growth investments” and “Simplify, digitalize, accelerate & act responsibly,” support our growth target and provide the guidelines for our actions. Our Group strategy does not aim to micromanage all local units, but to provide a strategic framework and to utilize local strengths (networks, competitive standing).

Group strategy: Leading Digital Telco



Strategic areas of operation

Lead in digital life & work: Best convergent networks+ & perfect service

Our aspiration is to offer customers the best network experience, anytime, anyplace – whether at home or at work, our network should work seamlessly and across all technologies. That's why we market fixed-network and mobile communications in **convergent products** (fixed-mobile convergence (FMC)). By the end of the reporting year, some 5.3 million customers in Germany had opted for MagentaEINS; that is over 200 thousand more than in the prior year. The national companies of our Europe operating segment won around 840 thousand new customers for MagentaOne and similar FMC offerings in 2021. To continue on this path of growth, we work continuously to improve our convergent portfolio. We took another step in this direction with the launch of our new MagentaEINS Unlimited offering, available throughout Germany. Customers who subscribe to this service enjoy unlimited data at home and on the go, and can flexibly add family members to the product bundle via one or more of our Community Card EINS SIM cards, enabling them to also benefit from unlimited data. We also increasingly offer home broadband products in the United States, on the basis of our leading mobile network. In pursuit of our goal to become the leading digital telecommunications company, we want to offer more than simply the best connectivity: What really counts is the **network experience**. For this reason we offer our customers additional services that turn our network leadership aspiration into a first-hand experience. We reached some key milestones in this regard in the reporting year. Our MagentaTV product has been repositioned throughout our entire European footprint to aggregate linear television, including extensive features, with access to content from the biggest video-on-demand providers, and exclusive content. In 2021, we further enhanced the TV experience, entering into new partnerships with major content providers in Germany (including DAZN), and launching our new MagentaTV Entertain rate plan, which is available as an ISP-neutral option, i.e., with internet from any provider, and includes RTL+ and Disney+. Our national companies in Europe rolled out an Android-based TV platform with a Deutsche Telekom-specific user interface to deliver an even more personalized user experience (in Greece, Slovakia, and the Czech Republic). The addition of almost 140 thousand TV customers in Germany and, on an organic basis, around 210 thousand in our European subsidiaries shows that we are on the right track. Of equally high priority for us is ensuring seamless product integration across our portfolio. This led in 2021 to us launching our own operating system for the digital household, called Magenta HomeOS. In interaction with Deutsche Telekom services (television, smart home, routers, MagentaCloud, voice control functions) and partner services, Magenta HomeOS acts as a “connector” to open up entirely new use cases. To start with, customers can share Wi-Fi access with guests via a QR code, check and restart their home network via a TV, or display photos from the MagentaCloud on their TV screen.

Perfect **customer service**, supported by digitalization, continues to be another powerful lever to help set us apart from the competition. For this reason, we launched several quality enhancement initiatives in the reporting year. These include, in Germany, the Digital Home Service (phone or on-premise assistance to help with all home network-related topics, such as Wi-Fi, television, smart home, etc.). Moreover, we resolve 54.7 % of customer inquiries at the first contact. Above and beyond this, in our national companies in Europe we further optimized the OneApp platform to deliver a digital sales and service experience. Following its successful market launch in all countries, the platform has improved the customer experience (e.g., customers can set up and manage their router via the app and use the integrated chat function to talk to staff or service bots) and enabled us to monetize our offerings (e.g., in-app coupons and loyalty program, new customers can conclude prepaid and postpaid contracts). Several awards validate our efforts in this regard, including the Connect service tests (outright winner of the hotline and service app tests in Germany and Austria, issues 05/2021 and 10/2021). In the United States, too, we are reaping the rewards of our focus on customer-centricity: numerous surveys rank T-Mobile US ahead of its competitors for service quality (e.g., the J.D. Power study rated T-Mobile US the mobile carrier with the best customer service in the United States for the 22nd time in succession).

We measure **customer satisfaction** using the globally recognized TRI*M method. We use the results of this performance indicator to improve our customer contact processes, and our products and services. At the same time, we determine the loyalty of our customers towards Deutsche Telekom. The results are presented as a performance indicator, the TRI*M index, which ranges between minus 66 and plus 134 points. At the end of the reporting year, the score for the Group (excluding T-Mobile US) came in at plus 73.4 points versus an adjusted value of 72.7 points at the start of the year (both determined on a comparable basis). Our goal for the coming years is to achieve a further improvement in customer satisfaction.

Lead in business productivity: Software-defined, secure, global networks, IoT & digitalization

In the reporting year, we once again maintained our market-leading position (in terms of revenue) as a provider of telecommunications services for **business customers** in the Germany operating segment and posted growth slightly above the level reached last year. Secure, reliable global connectivity is essential to the advancing digitalization of critical processes in companies and industry associations. We remain a dependable partner to German industry thanks to our product portfolio of international communications solutions that combine the strengths of our national network infrastructure with our international networks. We also continued to post growth in IT revenue from business customers in our Germany operating segment (up 5.4 % compared with 2020), mainly from pushing digitalization in small and medium-sized enterprises. In our national companies in Europe, revenue with business customers remained stable year-on-year in organic terms, primarily on the back of stable development in our mobile business. IT business declined year-on-year. Demand for our productivity, cloud, smart cities and security solution portfolio continued to grow.

Going forward, we want to remain the partner of choice for multinational corporations with cross-border **connectivity needs**, and to this end are investing in robust, global fixed-network and mobile connectivity and providing a one-stop shop for connectivity through the orchestration of our own networks and those of our partners. In the medium term, we want to respond to changing customer needs with end-to-end, cloud-based, modular network services and dynamically adapt our networks. Application programming interfaces (APIs) will even make it possible in future to automatically manage individual network parameters in real time. To this end, over the coming years we plan to radically overhaul our own network and IT landscape, transforming it into a modular, software-defined production environment with integration capabilities for customized app and IT landscapes.

As major topics like the **Internet of Things (IoT)** and **cybersecurity** become more relevant, security and network solutions (network, IT, and cloud computing) are beginning to merge into highly secure, end-to-end solutions. Security functions which were once purchased separately are increasingly becoming part of the connectivity product itself, like new-generation firewalls that are already integrated into some SD-WAN solutions, and SASE suites that deliver SD-WAN in combination with cloud security from a single source. We will continue to develop the core elements of our B2B portfolio, comprising our MPLS (Multiprotocol Label Switching; dedicated IP-VPN solutions) and SD-WAN products, as a whole to take account of network and security aspects. Security is an integral component of every one of our products and services (e.g., campus networks, IoT) – and that goes for every link in the communication chain: from the user via the terminal equipment, Wi-Fi/mobile communications/LAN, to access networks and corporate networks, transport networks, and data centers. “Security by Design” is our goal here – from development and operation to management of the network services by us and our customers. [SDG 16](#) [STRUCTURE](#)

Our business with “traditional” IT outsourcing services for international corporate customers has been in decline for a number of years now, mainly due to persistent intense competition. It is for this reason that our **Systems Solutions operating segment** has been undergoing a profound transformation since 2018. For our **corporate customers**, we are pursuing a “Leading European vertical full-service player” strategy. Specifically, we are focusing our systems solutions business on value creation aligned with core customer needs in respect of digitalization (advisory services, cloud computing, and digital solutions). For selected industries (automotive, healthcare, public sector, and public transport), we will increase our offer of vertical, industry-specific solutions based on our expertise. The focus here is on profitable growth.

Magenta Advantage: New business models based on DT assets

In our core business, we create essential values and skills not found in other companies. We call these the “Magenta Advantage.” For example, we have over 248 million mobile customers across our entire footprint and are a strong pay-TV provider in Europe with around 8 million customers. In our B2B segment, our long-standing relationships give us access to the biggest companies across all industries worldwide. Looking ahead, we want to better leverage our assets and skills, not only in our core business, but also to scale new digital business models. The past has already shown us how the Magenta Advantage helps to build value in new business. One example in this context is 1nce (a Deutsche Telekom investment). The cloud-based IoT connectivity solution developed by 1nce outside of Deutsche Telekom, based on our M2M connectivity, now gives us access to entirely new segments and secures our position in the IoT environment in the long term. Moving forward, we want to use the Magenta Advantage more systematically and on a broader basis – in the interests of our customers, partners, and Deutsche Telekom. For example, we want to use the digital reach of our sales and service apps to give our customers access to exclusive digital partner services and tap new revenue sources. For smaller companies and start-ups in particular, access to our customer base is extremely valuable when they want to grow fast in heavily fragmented markets. We are plowing our energies first of all into creating the right conditions within our Company: building APIs and more to simplify partner integration and establishing our OneApp across our entire footprint for even greater reach. Genuine value added for customers is only possible with personalized suggestions that match up with their needs and interests. To make this possible, we need to expand our capabilities in the fields of data analysis and segmentation. The core of our brand promise, “Reliability, security, and trust,” remains the same and protecting our customers’ data and privacy is still our top priority. Another important component is our strategic partnership with SoftBank. SoftBank is a global investment holding with stakes in numerous leading start-ups from a wide range of industries. In the reporting year, we reached initial partnership agreements with three portfolio companies (TIER Mobility, Revolut, GoStudent) and launched the first successful pilot projects in selected national companies in Europe.

Build & scale Telco as a platform [SDG 9](#) [STRUCTURE](#)

Our growth areas are based on our networks and our technology, which together form the core of our value creation. That is why we are systematically building out and interlinking our fixed and mobile networks so that we can offer our customers the fastest possible connection at top quality, anytime, anyplace. Group-wide we invested around EUR 18.0 billion (not including spectrum investment) primarily in building and operating networks, with around EUR 5.5 billion of this figure earmarked for Germany alone. This makes us the biggest investor among all of our German competitors. In pursuit of outstanding quality and an even quicker and more efficient network build-out, we are also striking out in new directions, for example, with the use of artificial intelligence (AI) to ensure infrastructure is built out in line with demand, as well as exploring partnerships and joint ventures. Integrated management improves the capacity utilization of our infrastructure and increases efficiency in operations and maintenance.

Fiber optic-based **fixed networks** are the basis for the best integrated network experience. With fiber-optic lines to over 7.0 million households, virtually all of our national companies in Europe are leading the fiber-optic build-out: In Greece, for example, we have the largest fiber-optic network nationwide, with FTTH available to more than 560,000 households and businesses, and in Slovakia we offer FTTH to almost 950,000 households. At the end of 2021, our fiber-optic network in Germany consisted of around 650,000 kilometers of fiber-optic cable. In 2021, we thus made fiber-optic lines (FTTH) available to around 1.2 million more households. Looking ahead, we are set to substantially increase the pace of the fiber-optic build-out further. By 2030, every household and every business in Germany is to have a fiber-optic line. Telekom Deutschland will build the majority of these. By the end of 2024, we are set to make around 10 million fiber-optic lines available. We have also entered into partnerships with other companies, helping further our goals (e.g., founding the joint venture Glasfaser NordWest together with EWE, and the open access cooperation with M-net). We give equal priority to building out to rural areas as we do to urban centers, and are planning to bring optical fiber to a total of 8 million rural households by 2030. Together with the Australian investor IFM, the fiber-optic build-out company GlasfaserPlus is to add a further 4 million households in rural areas to this target. But our competitors also need to play their part. Deutsche Telekom is building out the network on the basis of open access. The new networks are open for use by competitors. Our efforts are paying off. In Germany, we took the #1 spot again in 2021 for the best fixed-network offering (Connect, issue 08/2021) and the best fixed-network internet provider (CHIP, issue 05/2021). In the third quarter of 2021, Magenta Telekom in Austria won the award for fastest fixed-network internet access (Ookla speedtest awards) and was rated best-in-test for fixed-network broadband internet for the third time in succession (Connect, issue 11/2021).

In **mobile communications**, we set ourselves apart from our competitors with the outstanding quality of our network. We operate over 90,000 mobile communications antennas across Germany covering 99 % of households with LTE. Our national companies in Europe cover 98.2 % of the population, or around 109 million people, with LTE. With the **fifth-generation mobile communications standard (5G)**, we are creating a highly reliable mobile network with extremely low latency and high data throughput. Over 63,000 antennas now transmit 5G across Germany, with over 90 % of households already being able to use this next-generation mobile standard. The goal is to achieve 90 % geographic coverage in Germany by the end of 2025. As of the end of 2021, our national companies covered 28.9 % of the population in our European footprint with 5G. In Croatia, Hrvatski Telekom is spearheading the expansion of 5G networks and services with a total of over 600 5G base stations in operation and a 5G network already covering 48 % of the population. With the purchase of additional spectrum at the August 2021 auction, our Croatian subsidiary has created the necessary conditions to further consolidate its 5G leadership. T-Mobile Polska operated 3,500 5G base stations across Poland at the end of 2021. With a view to refarming the released spectrum for the faster and better performing LTE/4G and 5G services, companies including T-Mobile Polska and Telekom Deutschland shut down 3G spectrum in the reporting year.

We have regularly come out on top in independent network tests. Our German network once again won the “big three” network tests in 2021: by Connect (issue 01/2022), CHIP (issue 01/2022), and Computer Bild, issue 25/2021). Magenta Telekom was voted Austria’s most popular mobile network operator in 2021 for the eighth time in succession by Connect readers (issue 05/2021) and received the top verdict of “very good” in the CHIP mobile network test. We also won awards for the mobile networks of our national companies in Greece (Ookla) and once again in Croatia (Umlaut, Ookla). In the United States, we have the fastest and most reliable 5G network with the best coverage (Umlaut 5G network test, Ookla 5G network test, PCMag 5G network test). We currently cover more than 310 million people via the 600 MHz band, and over 210 million people with Ultra Capacity 5G in the 2.5 GHz band and millimeter wave (mmWave) spectrum. This is thanks in large part to our superior spectrum position from the business combination with Sprint.

Going forward, we will continue to invest heavily in building out 5G infrastructure. For this, we need conditions to be in place that are both fair and reliable. Our goal is to use the **best-in-class integrated network infrastructure** for our products and services. To this end, we complement our own infrastructure with that of strategic partners and also consider alternative access networks (wireline, cable, optical fiber, 4G/5G, satellites, HAPS, etc.). Our partnership with Eutelsat marks the first of many steps in this direction, and has enabled us to offer satellite-based broadband internet in Germany since the end of 2021. The technology for this is provided by Eutelsat’s Konnect satellite, via which households in remote areas or with limited access can benefit from powerful networks. The delivery of connectivity and services based on our own and our partners’ infrastructure is reliant on technology- and domain-agnostic orchestration capabilities. These are found in a separate technical control layer above the actual infrastructure, which allows us to manage the “network of networks.” We are modernizing our NT/IT architecture to ensure the necessary orchestration capabilities are in place. Our focus is on leveraging the full potential of network automation, cloudification and disaggregation to make our production considerably faster, more flexible and more cost-efficient. Disaggregation, or the separation of hardware and software, makes it possible to add new vendors. Today, more than 90 % of all suppliers in our infrastructure are large, traditional companies. Going forward, we want to significantly increase the proportion of smaller, more innovative suppliers, enabling us to integrate innovations into our networks more quickly and flexibly and thus also making them available to our customers.

We are adapting our production platform to meet the customer needs of the future, by building a **cloud-based, scalable, modular platform** and opening up access to selected parts of this platform to third parties (e.g., service providers and app developers) via open interfaces (APIs). Our goal is to make connectivity, services, and data (e.g., location data, connection conditions, and user behavior) combinable with new applications as needed. The benefits of this architecture include shorter development cycles, faster exploitation of revenue potential, more automated and significantly more cost-effective production, scalability across business units and borders, and a substantially better customer experience by virtue of personalized digital interactions.

Supporting areas of operation

Save for growth investments

Future growth requires adequate investment. To this end, we are investing in our own innovativeness as well as integrating successful new developments from outside our Company. Thanks to our strict cost discipline, we generate the funds we need to finance this investment and safeguard our competitiveness. For us, the goal of becoming Leading Digital Telco also means being the leading telecommunications provider in terms of efficiency. The digital transformation is key to further enhancing cost efficiency throughout our entire value chain: from the customer interface, to our production processes, through to the management of our own infrastructure and supply chains. We will therefore systematically continue on this path of cost transformation.



We take a value-oriented approach to managing our **investment portfolio**. Business areas that cannot be adequately developed within the Group are disposed of. Consequently, we completed the sale of the 54 % stake in Telekom Romania Communications, which operates the Romanian fixed-network business, to Orange in the reporting year. But we also believe that value orientation means realizing value when the time is right and the conditions attractive. In this context, after reviewing strategic options, we agreed with WP/AP Telecom Holdings IV in the reporting year to sell our subsidiary T-Mobile Netherlands. We had pursued a clear strategy aimed at increasing T-Mobile Netherlands' value and positioned the company as a challenger in the market. We thus transformed it into one of Europe's fastest-growing mobile communications companies (based on EBITDA AL). The sale was agreed based on an enterprise value of EUR 5.1 billion, which roughly corresponds to adjusted EBITDA AL of the last twelve months multiplied by a factor of 8.7. The transaction is subject to approval by the authorities as well as other closing conditions. Equally, we bolster our growth ambitions by means of equity investments and acquisitions. In this context, we agreed a share swap with SoftBank in the reporting year that increased Deutsche Telekom's stake in T-Mobile US to 46.8 %. We are also weighing plans to invest a portion of the proceeds from the planned sale of T-Mobile Netherlands to further increase our stake in T-Mobile US. We expect the total stake to be around 48.4 % upon completion of these two transactions. This is in line with our strategic decision to increase our stake in T-Mobile US to more than 50 % and secure the existing control over the U.S. subsidiary in the long term. This marks a further milestone in our U.S. success story, where we also posted strong operational growth in the reporting year: We further consolidated our position as #2 on the U.S. mobile communications market in terms of customer numbers, adding 5.5 million new customers in 2021 alone. Moreover, the realization of synergies from the business combination with Sprint is also surpassing expectations. In the reporting year, T-Mobile US realized synergies of USD 3.8 billion versus the USD 2.9 to 3.2 billion originally planned.

Simplify, digitalize, accelerate & act responsibly

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

There are two main thrusts to our pursuit of **simplicity**. First, we want to offer our customers intuitive products and simple rate plans, like MagentaEINS Unlimited, or MagentaTV Entertain. Going forward, we want to significantly further reduce product complexity. Our ambition is for our services to be available around the clock via a single click. Thanks to an IP migration which has been successfully concluded, we can now remotely perform setup and maintenance work to the line in increasingly more households – depending on the router. The technical provisioning of nine out of ten broadband lines is already successful on the first attempt. Second, we want our internal operation to be as efficient as possible, i.e., in terms of time and costs. We are making promising progress with the introduction of greater agility into our IT activities. For example, in the last three years we have more than tripled the development speed for new software or software-driven products in Germany. Today we have an average time-to-market in Germany of 2.7 months, and in Europe of just 1.5 months. We want to cut these times even further and achieve a time-to-market of one month in Europe and two in Germany by 2024. Above and beyond this, we will continue to scrutinize our organization, processes, and decision-making procedures and further optimize them in future, wherever possible.

The **digitalization** of our core business is helping us to improve customer experience and increase our efficiency. Our sales and service apps are now firmly established in Germany and Europe as key digital customer interfaces and we have worked to continually add more services. Our European national companies interact with more than 64 % of customers digitally, via the service app. The MeinMagenta app in Germany now has a penetration rate of over 65 %. Another factor that plays into an outstanding and, above all, personalized experience is a 360° view of our customers across all channels, both online and offline. Magenta View is our front-end platform for all employees with direct customer contact, delivering all necessary customer data from a single source. At the end of the reporting year, over 10,000 colleagues in Germany were already benefiting from Magenta View. Long term, our plan is to digitalize virtually all value creation stages in their entirety. To this end, we are systematically expanding our expertise in innovative technologies like artificial intelligence. Data-based analyses are already helping us to maintain our hardware more proactively, understand customer needs better, and manage our networks more efficiently. The advancing digitalization is also influencing our own approach to collaboration. We had already successfully introduced mobile working even before the coronavirus pandemic struck, and in 2020 together with the employees' representatives adopted a "Manifesto on the new way of working." Our goal is to optimize our collaborative activities by combining the best of both worlds (mobile and on-site working). And because it is important to give our employees guidance as they navigate the world of virtual and hybrid working, we also offer targeted training opportunities. In 2021, for instance, we delivered over 31,000 training sessions on tools designed to improve virtual collaboration. Among our employees, acceptance for digital tools has risen further: 86 % feel that digital tools support them in daily collaborative work (+4 % compared with the pulse survey in November 2020).

However, simplicity and digitalization also call for new **organizational forms, expertise, and a cultural change**. We took action to further improve our customer centricity, which included reorganizing customer service with the Team of Experts approach in Germany and the United States. The assignment of the teams of customer service experts to a geographic region has two major benefits: first, it brings us even closer to the customer, and, second, the interdisciplinary teams allow us to provide help faster than before. However, in the digital age we need to build up new skills that will enable us to meet current and future challenges. In 2021, we offered more "Explorer journeys" – programs addressing specific innovation topics – than ever, with the goal of equipping as many employees as possible with the skills that will be needed in the future. Around 6,000 employees signed up for programs in 2021 on topics such as big data, digital marketing, artificial intelligence, or software development. With our Youlearn initiative – aimed at entrenching self-paced learning in our everyday working life – we continued to drive forward our employees' options for upgrading their skills. What is more, we provide our employees with a high-quality training service in the form of Percipio (an intelligent learning platform also dubbed the "Netflix of learning") and Coursera (a provider of digital further-training courses offered by top-ranking universities). The more than 180,000 Percipio registrations since the third quarter of 2019 show that our efforts have been worthwhile. Providing a state-of-the-art learning environment and protecting the health and well-being of our employees is central to our role as an employer committed to responsible action. Our coronavirus vaccination campaign was very well received, with a total of 45,500 appointments taken up for first, second, and mix-and-match vaccinations. Also in the reporting year we introduced the option for employees to increase their participation in the Company's success via the Shares2You employee share program. All employees at participating Group companies have the opportunity to invest in Deutsche Telekom AG shares once a year. We match every two shares purchased with one free share. More than 36,000 employees took part in the Shares2You program in 2021. That our efforts are paying off is validated by our employee satisfaction levels: The question on Mood is comparable to the former question on Satisfaction and, as before, remains at the very high level of 80 %.  

In parallel, we fulfill our **responsibility** to society by systematically aligning our core business processes with the principle of sustainability. We have expanded our existing climate strategy to include a new Group program: Our aim with #GreenMagenta is to make a meaningful contribution toward protecting the climate and conserving resources. We have taken back over 2.2 million devices either to refurbish or to send directly for recycling, so that we and our customers actively help conserve resources and protect the climate. Moreover, in 2020 we introduced a sustainability standard for our packaging, removing single-use plastics in favor of recyclable materials and environmentally friendly colorings. All new Telekom-branded (or "T-branded") devices and already more than 60 % of the new packaging for smartphones that we source from our suppliers meet these criteria. Since 2021, 100 % of our electricity requirements for all Group units have been met from renewable sources. We plan to become twice as energy efficient by 2024, based on the data volume in the network in relation to the power consumed in this context. To help us achieve this goal, we are decommissioning legacy platforms – including PSTN, migrating to more efficient technology – such as the switch from 3G to 5G, using highly efficient data centers, and deploying AI. From a long-term perspective, we will also achieve savings from the migration from copper to fiber-optic technology. These measures will enable us to maintain stable power consumption in Germany and Europe through 2024, despite rapidly rising data volumes, growing numbers of active network components, and the further densification of our networks. Above and beyond this, we are supporting a responsible approach to digitalization. Our #GoodMagenta label denotes projects, programs, and initiatives that make a positive contribution to social and societal challenges in the digital world, for instance, our campaigns for civil courage online (#TAKEPART – No hate speech) and digital democracy projects (dabei-geschichten.telekom.com/en/home/).

Our strategy is expressed succinctly in our goal to become the **Leading Digital Telco**:

- We want to be a **leader** in terms of digital living and working, and in the implementation of advances in productivity for our business customers. Because only when we lead can we grow and meet the demands of our investors in the long term.
- We want to better utilize our existing assets and skills not only in our core business, but also to **develop** new, digital business models (**Magenta Advantage**).
- The key technical driver for our growth areas is “Telco as a platform”: the **best integrated network infrastructure** – provided by us and by partners – as well as cloud-based customer and network-service platforms. The basis for this is and remains our ongoing commitment to building out the fiber-optic and 5G networks.
- We promote continued growth by carefully managing our **financial resources** and **systematically transforming** the Company to be simple, digital, and agile in every sense.
- We play a responsible and active role in **society**. We are a partner, not just at a societal level, but also at a political one, and we work in the interests of ensuring the open, forward-looking development of all countries in which we are active.

SDG 8 RELATIONSHIPS

Management of the Group

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

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

Finance strategy

We announced our finance strategy for the years 2021 through 2024 at the [Capital Markets Day](#) in May 2021. Deutsche Telekom continues to pursue an attractive and reliable finance strategy. Through 2024, we want to further accelerate our forecast for growth from the past few years.

For the period from 2021 to 2024, our planning is based on the following level of ambition:



Dividend: between 40 and 60 % of adjusted earnings per share

Dividend floor: € 0.60 per share

^a Before dividend payments and spectrum investment.

^b Assuming constant exchange rates.

^c Compound annual growth rate.

We also expect revenue to increase by an average of 1 to 2 % per year and adjusted EBITDA AL by an average of 3 to 5 %.

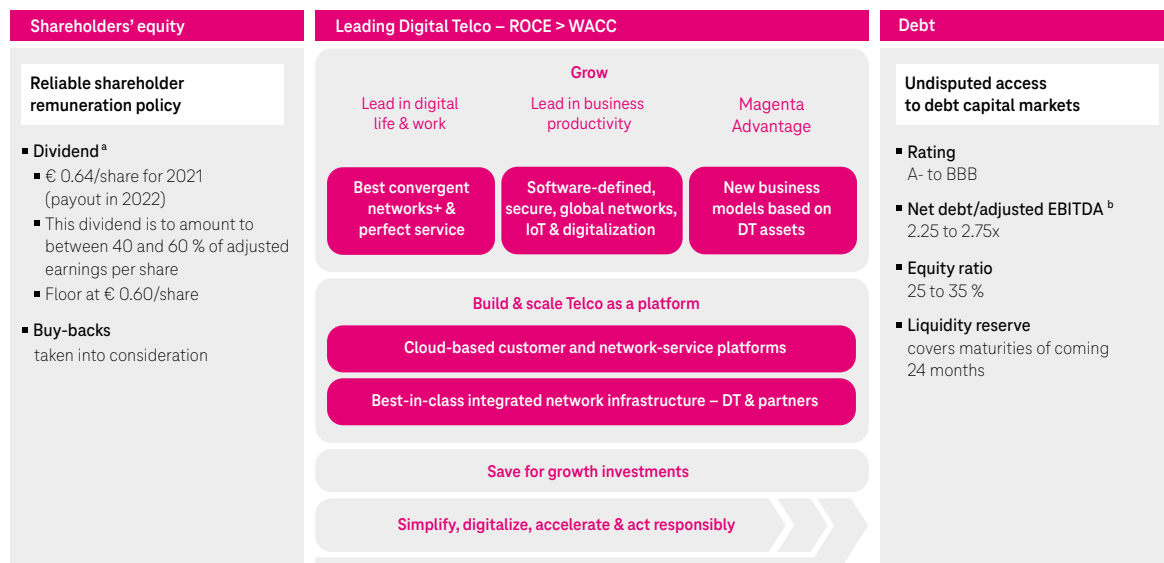
Another part of our finance strategy is to achieve our target financial ratios – relative debt (ratio of net debt to adjusted EBITDA) and equity ratio – along with a liquidity reserve that covers our maturities of the coming 24 months at least. With these clear statements we intend to maintain our rating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

There is a sustainable dividend policy for shareholders, which is subject to approval by the relevant bodies and the fulfillment of other legal requirements. Starting from the 2021 financial year, the amount of the dividend is based on a dividend payout ratio of 40 to 60 % of adjusted earnings per share, with a lower limit fixed at EUR 0.60 per dividend-bearing share. For the 2021 financial year, we intend to propose a dividend of EUR 0.64 for each dividend-bearing share. This equates to 52.46 % of adjusted earnings per share. We thus offer our shareholders both an attractive return and planning reliability. As in previous years the dividend for the 2021 financial year will once again be paid out without deduction of capital gains tax.

We will also take share buy-backs into consideration.

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

Our finance strategy through 2024



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

^b Deviation from the target range for a short period as a result of the business combination of T-Mobile US and Sprint until year-end 2024.

Performance management system

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

Financial performance indicators

		2021	2020	2019	2018	2017
ROCE	%	4.1	4.6	5.1	4.7	5.8
Net revenue	billions of €	108.8	101.0	80.5	75.7	74.9
Service revenue ^a	billions of €	84.1	78.9	n.a.	n.a.	n.a.
Profit (loss) from operations (EBIT)	billions of €	13.1	12.8	9.5	8.0	9.4
EBITDA AL (adjusted for special factors) ^b	billions of €	37.3	35.0	24.7	23.1	n.a.
Earnings per share (adjusted for special factors)	€	1.22	1.20	1.04	0.96	1.28
Free cash flow AL (before dividend payments and spectrum investment) ^{b, c}	billions of €	8.8	6.3	7.0	6.1	n.a.
Cash capex (before spectrum investment)	billions of €	(18.0)	(17.0)	(13.1)	(12.2)	(12.1)
Rating (Standard & Poor's, Fitch)		BBB, BBB+	BBB, BBB+	BBB+	BBB+	BBB+
Rating (Moody's)		Baa1	Baa1	Baa1	Baa1	Baa1

^a The definition of "service revenue" was not applied consistently Group-wide for the years prior to 2020.

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

^c Before interest payments for zero-coupon bonds and before termination of forward-payer swaps at T-Mobile US (both in 2020).

Profitability

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 a key performance indicator at Group level. ROCE is the ratio of operating result after depreciation, amortization and impairment losses plus imputed taxes (net operating profit after taxes, NOPAT) to the average value of the assets tied up in the course of the year (net operating assets, NOA).

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

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

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

Revenue and earnings

Revenue corresponds to the value of our operating activities. Absolute revenue depends on how well we are able to sell our products and services on the market. The development of our revenue is an essential indicator for measuring the Company's success. New products and services as well as additional sales activities are only successful if they increase revenue. **Service revenue** is the revenue that is generated by services (i.e., revenue from fixed-network and mobile voice calls – incoming and outgoing calls – as well as data services) plus roaming revenue, monthly basic charges and visitor revenue, as well as revenue generated from the ICT business. Service revenue is an important indicator for the successful implementation of the growth strategy of the Group and essentially comprises high-value – i.e., predictable and/or recurring – revenues from Deutsche Telekom's core activities.

A reconciliation of net revenue disclosed in the consolidated financial statements, including its breakdown into revenue categories, to the "service revenue" financial performance indicator can be found in the following table:

billions of €		2021
Net revenue		108.8
Revenue from the sale of goods and merchandise		(19.6)
Revenue from the use of entity assets by others		(4.1)
Revenue from the rendering of services		85.1
+/- Reconciliation to service revenue as financial performance indicator		
Adjustment of revenue from the rendering of services ^a		(2.2)
Adjustment of revenue from the sale of goods and merchandise ^b		0.3
Adjustment of revenue from the use of other entity assets by others ^c		0.9
Service revenue		84.1

^a The definition of "service revenue" does not include, in particular: revenues from valued-added services, revenues from application and contract services, and other non-recurring/variable revenues.

^b Relates to revenues from the sale of hardware in connection with the ICT business.

^c Primarily relates to revenues from wholesale business (e.g., in connection with unbundled local loops (ULL) and co-location spaces).

We measure our operating earnings performance on the basis of **adjusted EBITDA AL**, i.e., EBITDA adjusted for depreciation of right-of-use assets, for interest expenses on recognized lease liabilities, and for special factors. And EBITDA is calculated as **EBIT** (profit/loss from operations) before depreciation, amortization and impairment losses on intangible assets, property, plant and equipment, and right-of-use assets. Both metrics indicate the short-term operational performance and the success of individual business areas. 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 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 further inclusion of unadjusted EBIT/EBITDA AL as performance indicators means special factors are also taken into account. This promotes a holistic view of our expenses. In addition to these absolute indicators, we also use the EBIT and EBITDA AL margins to show how these indicators develop in relation to revenue. This makes it possible to compare the earnings performance of profit-oriented units of different sizes.

For the calculation of EBITDA AL, EBIT, and net profit/loss adjusted for special factors, please refer to the section [“Development of business in the Group.”](#)

Adjusted earnings per share is calculated as adjusted net profit divided by the time-weighted number of all ordinary shares outstanding, which is determined by deducting the weighted average number of treasury shares held by Deutsche Telekom AG.

Financial flexibility

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

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

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

Non-financial performance indicators

		2021	2020	2019	2018	2017
Customer satisfaction (TRI*M index)		73.4	72.2	67.3	67.7	68.6
Employee satisfaction (commitment score) ^a		77	4.0	4.0	4.1	4.1
Energy consumption ^{b, c}	GWh	13,323	12,843	9,324	9,224	8,943
CO ₂ emissions (Scope 1 and 2) ^{c, d}	kt CO ₂ e	247	2,512	1,797	2,354	2,896
Fixed-network and mobile customers						
Mobile customers ^e	millions	248.2	241.5	184.0	178.4	168.4
Fixed-network lines	millions	26.1	27.4	27.5	27.9	27.9
Broadband customers ^{f, g}	millions	21.6	21.7	21.0	20.2	18.9
Systems Solutions						
Order entry ^h	millions of €	4,174	4,564	4,740	6,776	5,241

^a Commitment score determined on the basis of the employee surveys carried out in 2021, 2019, and 2017. In 2021, we changed from a scale of 1 to 5 for the commitment score (previously the “commitment index”) to a scale of 0 to 100.

^b Energy consumption, mainly: electricity, fuel, other fossil fuels, district heating for buildings.

^c Information for the previous years (2017 to 2020) was taken from the non-financial statements for the years in question, which were reviewed in the form of a limited assurance engagement. This information was not part of the statutory audit of Deutsche Telekom's consolidated financial statements and combined management report.

^d Calculated according to the market-based method of the Greenhouse Gas Protocol.

^e Including T-Mobile US wholesale customers.

^f Excluding wholesale.

^g Starting in the second quarter of 2018, we no longer report the number of broadband lines from a technical perspective. Instead, we report the number of broadband customers. The figures for 2017 were adjusted retrospectively.

^h Order entry for the 2019 financial year was adjusted retrospectively in connection with the realignment of the B2B telecommunications business.

We want our customers to be satisfied – or even delighted – as satisfied customers act as multipliers for our Company’s success. As a responsible, service-oriented company, the needs and opinions of our customers are of great importance to us, and we want them to stay with our Company in the long term. For this reason we measure **customer retention/satisfaction** in our companies using the globally recognized TRI*M method. The results of systematic surveys are expressed by an indicator known as the **TRI*M index**. To underscore the significance of customer retention/satisfaction for our operating business, the performance of Board of Management members and eligible managers is now also being tracked and incentivized by means of the long-term variable remuneration (Long-Term Incentive Plan). This KPI, as one of four target parameters, has been relevant for Variable II since 2010, as well as for the Long-Term Incentive Plan which was launched in 2015, and in which the Board of Management has participated since 2021. We take the TRI*M indexes calculated for the operating entities (excluding T-Mobile US) as an approximation of the respective entities’ percentage of total revenue to create an aggregate TRI*M Group value. This allows Board members and eligible managers to benefit from the development of customer retention/satisfaction across the Group.

For further information on customer satisfaction, please refer to the section [“Group strategy.”](#)

Our employees want to contribute to the further development of the Company and identify with it. We want to pursue open dialog and productive exchange with our employees. New working models and state-of-the-art communication options, as well as regular employee surveys, help us to accomplish this. 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 score** – derived from the results of the last employee survey. The questionnaire and the measurement model were reviewed in the context of the 2021 employee survey and were updated based on feedback and the latest research findings. As part of this process, we changed the scale used for the commitment score (formerly the “commitment index”) to 1 to 100, instead of the 1 to 5 we had previously used. In view of the major significance of employee satisfaction for the success of the Company, the performance of Board of Management members and eligible managers is now also being tracked and incentivized by means of the long-term variable remuneration (Long-Term Incentive Plan). Employee feedback, as one of four target parameters, has been relevant for Variable II since 2010, as well as for the Long-Term Incentive Plan which was launched in 2015, and in which the Board of Management has participated since 2021. This allows Board of Management members and eligible managers to benefit from the development of employee satisfaction across the Group.

For further information about employee satisfaction, please refer to the section [“Employees.”](#)

Climate change and the destruction of the environment are existential threats to the world. Companies must therefore significantly increase their energy and resource efficiency and restrict their absolute energy consumption. This issue is ever more relevant for providers of information and communications technology (ICT). There is a general expectation on the ICT sector to continue building out the telecommunications network while, at the very least, keeping basic consumption stable in the medium term or even reducing it going forward. For over 20 years, Deutsche Telekom has recorded environmental, social, and governance (ESG) data and performance indicators, which are used first and foremost to calculate our Group-wide ESG KPIs, on the basis of which we measure and manage our CR performance. The non-financial performance indicator **energy consumption** is a record of the energy consumed in connection with the operation of our actual business model. We constantly monitor progress regarding our medium-term goal to keep energy consumption at least stable, and can make adjustments where necessary. To this end, we invest in measures and programs to conserve energy from all sources. At the same time, this goal plays into how we optimize and innovate for our future infrastructure, and calls for the use of innovative technology components. In living up to our responsibility to conserve resources and protect the climate, we also run various initiatives that aim to reduce the CO₂ emissions generated as part of our business activities. These initiatives include the sustained use of 100 % green electricity, optimizing power consumption in our buildings, and gradually transitioning our Group fleet vehicles from fossil fuels to zero- or low-emission power sources. We measure our progress in this regard on the basis of the **CO₂ emissions** (Scope 1 and 2) non-financial performance indicator. Given the major significance of these two ESG targets, since 2021 the performance of Board of Management members has also been tracked and incentivized by means of the annual variable remuneration.

For further information on these and other ESG KPIs, please refer to the section [“Corporate responsibility and non-financial statement.”](#)

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

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

Impact of the coronavirus pandemic on our business and our key performance indicators

The global economy recovered from the coronavirus crisis in 2021, however, economic development continues to be impacted by its aftermath. The coronavirus pandemic affected our business activities and financial performance indicators in several of our business areas, impacting on revenues and earnings. For example, temporary travel restrictions have resulted in lower roaming and visitor revenues in our operating segments, while our terminal equipment business felt the bite of temporary shop closures. At the same time, we recorded an increase in the volume of voice calls, both in mobile communications and in the fixed network, and higher demand for mobile data as a result of hybrid working.

Our non-financial performance indicators also revealed in the reporting year that the coronavirus pandemic had a formative effect on how we collaborate. We successfully built on our experience in recent months and put proactive measures in place that have been reflected in our employees' outstanding performance and record levels of employee satisfaction (commitment score). Our customer numbers profited in the reporting year from the re-opening of shops after the imposition of coronavirus-induced temporary closures both in the previous year and in early 2021. This was reflected in the development of customer numbers in our operating segments.

Based on experience so far, the coronavirus pandemic is expected to only impact our business to a limited extent going forward.

The economic environment

Macroeconomic development

In 2021, the global economy recovered from the coronavirus-induced crisis, although economic development is still feeling the reverberations. The decline in the number of new infections and the fast progress made with the vaccination rollout led to a strong upswing in consumer spending in the advanced economies in spring of 2021. Despite this, the delivery and capacity bottlenecks that began to materialize at the start of 2021 led to disruptions in global value chains and slowed industrial output in many countries. Rising global demand, coupled with delivery constraints on the supply side, is driving a dramatic spike in producer and consumer prices.

The International Monetary Fund (IMF) projects a 5.9 % increase in world economic output for 2021. The economies of our core markets, too, have recovered from the effects of the coronavirus pandemic. GDP in Germany increased by 2.7 % year-on-year, although growth slowed significantly towards the end of 2021 owing to delivery bottlenecks, supply shortages, and the fresh wave of infections. Rising producer prices, delivery bottlenecks, and higher consumer spending drove soaring inflation across many parts of the world in the second half of 2021.

The Bitkom-ifo-Digitalindex, calculated on the basis of the business situation and expectations, brightened substantially in the first half of 2021 before tapering off to some extent in the second half. The business climate in the ICT sector remained relatively buoyant compared with the economy as a whole.

In the United States, the economy grew by 5.7 % in the reporting year, already returning to its pre-pandemic level in the second quarter of 2021. The substantial increase in consumer spending was the major driver of this growth. The U.S. labor market recovered in 2021 from the coronavirus-induced slump, although unemployment rates remained at a higher level than before the crisis. Consumer prices rose sharply year-on-year in 2021, mainly due to delivery bottlenecks, higher energy prices, and rising rents. In response to the strengthening economic activity, the U.S. Federal Reserve tapered its bond-buying at the end of 2021, signaling a likely rise in interest rates in the near future. Despite higher numbers of new coronavirus cases in some countries, the national economies of our Europe operating segment also posted substantial growth in economic output and declining non-employment rates. The central banks of Hungary, the Czech Republic, and Poland have raised interest rates in an effort to curtail high inflation.

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

	GDP for 2019 compared with 2018	GDP for 2020 compared with 2019	GDP estimate for 2021 compared with 2020	Unemployment/ non-employment rate in 2019	Unemployment/ non-employment rate in 2020	Estimated unemployment/ non-employment rate in 2021
Germany	1.1	(4.6)	2.7	5.0	5.9	5.7
United States	2.3	(3.4)	5.7	3.7	7.7	5.5
Greece	1.8	(9.0)	7.1	17.9	17.6	15.3
Romania	4.2	(3.7)	7.0	3.9	5.0	5.0
Hungary	4.6	(4.7)	7.4	3.3	4.1	4.1
Poland	4.7	(2.5)	4.9	3.3	3.2	3.3
Czech Republic	3.0	(5.8)	3.0	2.0	2.6	2.7
Croatia	3.5	(8.1)	8.1	6.6	7.5	6.7
Netherlands	2.0	(3.8)	4.0	3.4	3.8	3.5
Slovakia	2.6	(4.4)	3.8	5.8	6.7	6.8
Austria	1.5	(6.7)	4.4	4.8	6.0	5.0

Source: Eurostat, European Commission, national authorities. Last revised: January 2022.

Telecommunications market

Demand for high-speed broadband – over the fixed and mobile networks – remains high. According to estimates by Analysys Mason, data traffic over the fixed network grew by 25 % worldwide in 2021 and mobile data traffic by 37 %. The coronavirus pandemic in particular brought home the fundamental role that resilient, high-performing broadband infrastructure plays in the digital transformation. Numerous countries have announced ambitious build-out targets. In March 2021, the European Commission published new connectivity targets under which all households in the European Union (EU) should have a gigabit-capable line and all populated areas should be covered by 5G by 2030. According to a study by Boston Consulting Group, investments totaling EUR 300 billion will be needed to make this goal a reality.

Digitalization and broadband infrastructure are also major factors in the coronavirus stimulus packages. In February 2021, agreement was reached within the EU on the creation of the Recovery and Resilience Facility allocated with EUR 672.5 billion as the central pillar of the NextGenerationEU recovery plan. At least 20 % of the funds flowing to member states are earmarked for digital transition projects. Further numerous funding initiatives at national level were launched to support the broadband build-out and the digital transformation. For example, in November 2021 the United States Congress passed a comprehensive infrastructure subsidies program, which will provide USD 65 billion for broadband infrastructure deployments and aims to boost demand for broadband services.

The telecommunications industry continues to be characterized by intense competition. Consumers benefit from a greater range of products to choose from. In the fixed network, established telecommunications companies are competing intensively with cable network operators, city network operators, and resellers, who predominantly make use of regulated wholesale products. Financial investors are increasingly providing money for the build-out of regional and supra-regional fiber-optic networks. In addition, internet companies with over-the-top (OTT) communication services are further intensifying the competitive pressure. Moreover, three or four mobile carriers operate in each of our markets using their own network infrastructure. On top of this, we are seeing MVNOs becoming established in many markets using the network infrastructure of traditional mobile network operators.

Germany

In the Bundesnetzagentur's Activity Report, published in December 2021, the agency reported year-on-year growth in revenue from telecommunications services, pay TV, and IT services in Germany in the reporting year, mainly driven by the first signs of economic recovery following the negative impact of the coronavirus pandemic. The increase in revenue was predominantly due to the growth in mobile telecommunications services. Revenue from fixed-network services, including television, also increased, although at a slower rate.

According to the Bundesnetzagentur, the number of broadband lines in Germany had risen by 0.8 % to 36.5 million by the end of the first half of 2021. For 2022, Analysys Mason forecasts further growth of 2.2 % in the number of broadband lines. High-bandwidth lines are increasingly marketed in cable and VDSL/vectoring networks. The offerings in this area are supported by fiber-optic lines and 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. Providers are recording growth in broadband revenue driven by rising customer numbers in addition to higher revenues per customer for broadband products and triple-play bundles comprising telephony, a broadband line, and TV service. The trend for convergent product bundles comprising fixed-network and mobile offerings (FMC) also continued.

Service revenue in the German mobile communications market increased slightly compared with 2020, driven mainly by the uninterrupted upswing in data usage, which grew by 54 % (source: Analysys Mason). This additional demand for higher-value rate plans and devices offset revenue declines from dwindling international roaming traffic owing to weaker international travel, as well as regulatory effects and sustained high price pressure and intense competition. Mobile data usage continues to increase strongly on the back of growing use of products such as mobile video apps. The availability of next-generation 5G mobile technology also expanded rapidly in 2021. The percentage of voice and data rate plans is rising steadily. Traditional voice and text messaging services are increasingly being replaced by free IP messaging services like WhatsApp and social networks like Facebook. Connected products such as smartphones and tablets, as well as other connected wearables such as watches and fitness trackers, are growing ever more popular, pushing up demand for high-speed mobile broadband, large data volumes, and extra SIM cards in the rate plan portfolios.

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

United States

In the United States, the ongoing coronavirus pandemic has led to continued demand for broadband services, both in fixed and mobile services. Broadband adoption in the retail sector benefited from over USD 10 billion in pandemic-related funding for consumers, schools, and libraries. The pandemic has also accelerated the adoption of digital services, leading to increased demand for enterprise ICT services.

To meet rising demand, operators are investing heavily in both fixed and mobile networks in urban, suburban and, increasingly, in rural areas. As part of their infrastructure expansion, telecommunications providers have announced plans to significantly invest in fiber-optic networks. AT&T announced in early 2021 that it planned to increase its fiber-optic footprint by an additional 3 million customer locations across more than 90 metro areas. Verizon, as well, plans to continue fiber deployments as do smaller providers. Frontier, a fixed-line provider, aims to cover 10 million premises by 2025, up from 6 million originally planned. Similarly, in 2021, regional provider Windstream began a program for the rollout of fiber to the premises (FTTP).

Wireless providers, too, have continued to heavily invest in the deployment of 5G networks in the United States. All three national mobile operators – AT&T, T-Mobile US, and Verizon – claim 5G wireless connections across the United States. At year-end 2021, T-Mobile US announced that its own 5G network covered 310 million people via the 600 MHz band, and over 210 million people with Ultra Capacity 5G in the 2.5 GHz band and millimeter wave (mmWave) spectrum. AT&T said in July 2021 that its 5G network reached more than 250 million people across the country. Verizon's low-band mobile 5G service covers more than 230 million people in the United States. Operators are also increasingly offering fixed wireless services in competition with established cable operators and internet service providers (ISP) and in areas where traditional broadband connections are not available. Of the large providers, Verizon and T-Mobile US, in particular, are investing in 5G fixed wireless, with T-Mobile US' offering being available to more than 30 million households nationwide and Verizon's in 62 cities across the United States. Additional facilities-based competition could come from DISH, which continues to build its 5G network. The U.S. Federal Communications Commission (FCC) obligations require DISH to offer 5G broadband service to at least 20 % of the U.S. population and to deploy a core network by no later than June 14, 2022. The FCC continued to allocate spectrum for 5G deployments, including licenses in the 3.5 GHz band and in the 3.7 GHz band. Another auction for 100 MHz of spectrum in the 3.45 to 3.55 GHz band started in early October 2021 and was completed at the end of January 2022. A further auction of spectrum in the 2.5 to 2.7 GHz band is expected to take place in 2022.

The expansion of infrastructure in the United States will benefit from additional government subsidies programs over the coming years. This includes the Rural Digital Opportunity Fund (RDOF): The FCC plans to provide USD 20.4 billion for broadband infrastructure deployments in unserved and underserved areas of the United States over the next ten years. A Phase 1 auction was completed in September 2020 and will provide USD 9.2 billion in build-out support in unserved areas. The timeline for the Phase 2 auction has yet to be determined. Further support will come in the amount of USD 65 billion allocated by legislation passed by the U.S. Congress in September 2021. Congress has appropriated USD 42.45 billion to be allocated in grants to states to support broadband infrastructure, mapping, and adoption. A further USD 14.2 billion will be used to make broadband adoption more affordable. USD 2.75 billion will be allocated toward digital equity and inclusion programs.

Europe

Early in the reporting year, the traditional telecommunications markets in our Europe segment were affected in particular by the coronavirus pandemic, which resulted, among other effects, in a year-on-year decline in mobile roaming revenues due to travel restrictions. Full and partial lockdowns in our footprint countries over the course of the year led to the temporary closure of shops and other measures. Public life moved online to a large extent driving a corresponding increase in demand for broadband and TV services. According to Analysys Mason, fixed-network business (excluding systems solutions business) reflected this trend with slight growth and was able to offset the decline in revenues from voice telephony. Mobile business also performed slightly better than in the prior year, with revenues also up overall year-on-year.

Market players in our European footprint continued their merger acquisition activities in the reporting year on a level equaling that seen prior to the outbreak of the coronavirus crisis. For instance, in Greece the United Group acquired Forthnet/Nova and is also expected to acquire Wind Hellas in the first half of 2022. In Poland, the Iliad Group acquired Play and is expected to acquire UPC PL in the first half of 2022. In Hungary, Digi announced plans to sell its Hungarian fixed-network, mobile, and pay TV business to the Hungarian ICT group, 4iG. In Romania, Orange acquired OTE's 54 % stake in Telekom Romania effective September 30, 2021. Activities relating to the acquisition of spectrum licenses were restrained on the markets in the reporting year. However, the activities of the cell tower businesses picked up pace. For example, the Polish companies Play and Polkomtel both reached agreements on cell tower business with Cellnex.

Convergent bundle offerings consisting of fixed-network and mobile services (FMC) are now established in our markets and consistently post high growth rates. Analysys Mason expects the number of FMC customers and revenues to grow year-on-year, underpinned by further acquisitions in selected European markets such as Greece or Croatia on the one hand, and on the other by the further development of existing retail offerings to address specific target groups, such as Proximus in Belgium, and innovative advantage bundles, such as MagentaOne in our national companies. These integrated convenience packages are enjoying sustained strong growth in our companies and frequently address the majority of consumers, which is having a positive impact on customer satisfaction, churn rates, and revenue growth.

Subscription-based streaming services such as Netflix and Prime Video still only have limited potential for substituting traditional pay TV in the markets of our Europe operating segment. Analysys Mason puts the share at around just 10 %. This is attributable to two effects: Firstly, the prices for these services are not (or only marginally) adapted to the local purchasing power, i.e., the price levels are generally the same internationally. Secondly, successful offerings, like Disney+, are either unavailable in most of our markets or only offer partial language content localization, thus narrowing their appeal to smaller sections of the population. Despite this, the appeal of this business model, which will continue to develop in our markets, is evidenced by the year-on-year trend: according to Analysys Mason, revenues with streaming services in Europe and the customer base both posted strong growth.

For the second year in succession, our B2B operations in Europe felt the effects of the pandemic. The lockdowns and major restrictions that dominated the first half of 2021 were followed in the second half of the year by delivery bottlenecks and supply shortages, which led to uncertainty in a disproportionately large number of industries. The success of business in Europe is now showing clear signs of heavy reliance on other continents and a need for dependable logistics. This led to some investments being pushed back to the next financial year as a matter of precaution. Despite this, demand grew in 2021 for solutions for mobile working and collaborating, video-conferencing systems, and more cost-efficient system landscapes in the cloud or IoT world. In virtually all European markets, public-sector employees were supplied with equipment for mobile working. Large companies also followed the trend in 2021 for future-proofing their system landscapes, e.g., with Microsoft Azure and similar solutions. A large number of small and medium-sized businesses began digitalizing their data back-up processes and ramping up their presence in the digital economy via online marketing and web shops.

Systems Solutions

In the information technology (IT) industry in our core market of Western Europe, the volume that can be addressed by our Systems Solutions operating segment and the T-Systems brand increased by 4.3 % in the reporting year to EUR 157 billion. The effects of the global pandemic have positively affected IT customer spending. Many companies launched digitalization projects; for instance, home workstations were set up to enable employees to work remotely in virtually all industries.

In Germany, in terms of IT services, demand has grown further for public cloud services and cybersecurity services, as has the importance of digitalization (including Industry 4.0) and machine-to-machine communication (M2M). The security market addressed by T-Systems grew by 11.9 % in 2021. The health sector also developed positively, posting double-digit growth rates in areas including telehealth and the healthcare cloud. By contrast, growth in demand slowed in the market segments for traditional infrastructure, project business, and SAP services.

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

Group Development

The environment of our Group Development operating segment is largely dominated by the markets served by our companies T-Mobile Netherlands, Deutsche Funkturm (DFMG), and Magenta Telekom Infra (MTI) in Austria.

The Dutch mobile communications market served by T-Mobile Netherlands continued to be marked by high price and competitive pressure. The Netherlands is ahead of much of Europe with its bundling of fixed-network and mobile products into convergent offerings (FMC). The dominance of KPN and VodafoneZiggo in fixed-network business kept the pressure on mobile product pricing high due to the FMC trend.

DFMG is the biggest provider of passive wireless infrastructure for mobile communications and broadcasting in Germany. Despite the coronavirus pandemic, the market again saw increased demand for cell sites in the 2021 financial year, due on the one hand to the fact that network operators plan to close gaps in coverage, and on the other to the fact that demand for mobile data services is growing, which calls for a further increase in the density of mobile networks.

MTI is the second-largest provider of passive wireless infrastructure for mobile communications and broadcasting in Austria. The densification of the Austrian market continued throughout 2021, driven by rising demand for mobile data services and the fulfillment of coverage obligations by the network providers.

Major regulatory decisions

Our business activities are largely subject to national, European, and U.S. regulation, which is associated with extensive powers to intervene in our product design and pricing, particularly in Europe. We were again subject to extensive regulation in our mobile and fixed-network businesses in 2021.

Regulation

Commitment agreements entered into force. The agreements with Telefónica and Vodafone concerning their long-standing cooperation in the fixed network were extended in the fourth quarter of 2020 in the form of new commitment agreements to replace the former quota-based agreements under what had become known as the “contingent model.” Long-term agreements were also signed with 1&1 and NetCologne in the first quarter of 2021. Since there were no regulatory objections to the agreements on the part of the Bundesnetzagentur, they entered into force effective April 1, 2021. Beyond the continued use of VDSL, the agreement also set the course for the use of the FTTH fiber-optic networks to be continuously built out by Deutsche Telekom in the years to come. This has established a solid foundation on which to take forward cooperation in the fixed network over the next 10 years.

European Commission set termination rates from July 1, 2021. On April 22, 2021, the European Commission published a Delegated Act setting single maximum Union-wide mobile (MTR) and fixed-network (FTR) termination rates. The Act will reduce MTRs to a uniform level of 0.2 eurocents/min. by 2024 using a phased approach. A uniform level of 0.07 eurocents/min. was set for FTRs from January 1, 2022, prior to which updated price caps still applied from July 1, 2021 (varied by member state).

European Electronic Communications Code (EECC) transposed into national law. The Telecommunications Modernization Act (Telekommunikationsmodernisierungsgesetz – TKMoG) entered into force in Germany on December 1, 2021. The reform of the German Telecommunications Act (Telekommunikationsgesetz – TKG) became necessary to transpose the provisions of the EECC into national law. The biggest changes affect the rules on consumer protection, the regulation of very high capacity networks (including FTTH), spectrum policy, and the rules on universal service. TKMoG will also remove the right of property owners to pass on cable TV service costs to tenants via the service charges included in rental agreements. The rules on contract terms and contract extensions were modified in favor of the consumer, with customers now being able to cancel contracts on a monthly basis after reaching the minimum contract term. Other changes affect the existing rights of retail customers to a price reduction in the event of defective performance – a modification that has now also been incorporated into the TKG. The deadlines for fault clearance have been further tightened. In terms of wholesale regulation of companies with a dominant market position, the amended TKG will ease regulations regarding the build-out of FTTH networks. The previous universal service is being replaced by an entitlement to fast telecommunications services. The thresholds for this will have to be laid down in an ordinance that has the force of law. One important change is the abolishment, effective June 30, 2024, of the privilege for property owners to pass on cable TV and internet service fees as ancillary rental costs to tenants. The fiber-optic build-out will be financed using new instruments, such as the fiber-optic provisioning charge for tenants capped at EUR 60 per year for 5 or 9 years, a cost apportionment added to the basic rent excluding service charges, or the existing rules on network usage charges. This step will also reduce the costs for network operators of using in-house networks. The EECC has already been transposed into the national laws of Greece, Austria, Slovakia, the Czech Republic, and Hungary (with varying deadlines for entry into force, in particular with respect to customer protection provisions). The legislative process is still pending in Croatia, the Netherlands, Poland, and Romania.

Bundesnetzagentur presents draft decision for FTTH network regulation. On October 11, 2021, the Bundesnetzagentur presented its draft decision on the future regulation of access to Deutsche Telekom's copper and fiber-optic network. The draft contains proposals for easing FTTH network regulation, which would put an end to "ex ante" and access regulation. Non-discriminatory access will instead be secured under the Equivalence of Input (EoI) principle enshrined in the new Telecommunications Act (Telekommunikationsgesetz – TKG). Under the new system, wholesalers would have access to the same material and human resources as Deutsche Telekom's sales teams. The Bundesnetzagentur further proposes to abolish the traditional "ex-ante" regulation of layer 2 (VDSL) products and tie charges to a disclosure obligation. The draft decision also includes the requirement for Deutsche Telekom to grant access to cable ducts and operational support systems. The period for responses to the draft decision ended on November 15, 2021. The Bundesnetzagentur is expected to notify the European Commission of the draft in the first quarter of 2022.

German court overturns approval under merger control law for the joint venture Glasfaser NordWest. Telekom Deutschland and EWE founded the joint venture Glasfaser NordWest in 2020. The aim of the joint venture is to provide up to 1.5 million households and business locations with fast internet. If the Düsseldorf Higher Regional Court's decision of September 22, 2021 becomes final, the case will be referred back to the Bundeskartellamt for a new decision on approval and any further conditions. The joint venture can continue building out FTTH in the interim. The Bundeskartellamt, EWE, and Telekom Deutschland have lodged a complaint against the decision of the Düsseldorf Higher Regional Court to not allow an appeal.

Bundesnetzagentur's security catalog classes operators of public telecommunications networks for the first time as having an increased risk potential. On August 25, 2021, the Bundesnetzagentur determined new security requirements for operators of public telecommunications networks. Under the IT Security Act 2.0 (IT-Sicherheitsgesetz 2.0) critical components are subject to special legal requirements, such as mandatory certification.

For further information on the Bundesnetzagentur's TKG security catalog, please refer to the section ["Risks and opportunity management – Risks and opportunities relating to regulation."](#)

European roaming regulation. In December 2021, the European Commission, the Council, and the European Parliament agreed to extend the current roaming regulation until 2032. The Roam like at Home principle introduced in 2017, which allows consumers to make calls at domestic terms and conditions and use data volumes within the European Union, will thus apply for a further ten years. New rules were also added on transparency, and the new regulation will ensure that the quality of roaming services is not lower than mobile services at home. New, lower price caps through 2031 are being set for inter-operator rates for corresponding wholesale services, to be re-examined in 2024/2025. Earlier discussions on possible steps to tighten regulation on voice calling and text messaging (SMS) between EU member states were not included in the draft. The regulation is expected to come into force as of July 1, 2022.

Awarding of spectrum

The assignment phase of the C-band auction (3.7 to 4.2 GHz) in the United States ended on February 17, 2021. On February 24, 2021, the FCC announced the number of licenses obtained by participating companies. Verizon paid around USD 45 billion for 3,511 licenses, AT&T over USD 23 billion for 1,621 licenses, and T-Mobile US USD 9.3 billion for 142 licenses. A total of 280 MHz was sold at the C-band auction. The new license holders must make relocation payments over the next three years to cover the transfer of licenses from the former holders. The payments T-Mobile US will have to make are expected to amount to USD 1.2 billion. In Hungary, proceedings to re-award 900 and 1,800 MHz spectrum licenses that are due to expire in 2022 were held on January 28, 2021 and concluded the same day. Magyar Telekom acquired 2x 8 MHz and 2x 20 MHz in the respective bands for a total price of EUR 123 million (when translated into euros). On August 12, 2021, Hrvatski Telekom in Croatia acquired spectrum in the 700; 3,400 to 3,800; and 26,000 MHz bands for a total purchase price of EUR 17.4 million. In Romania, the regulatory authority confirmed the extension of Telekom Romania Mobile Communications' 2,100 MHz usage rights for 2022 until the end of 2031 following payment of a one-time fee in the amount of EUR 25 million; the formalities were completed by the end of 2021. The remainder of the 800; 2,600; and 3,400 to 3,800 MHz spectrum in Romania was awarded in December 2021. For harmonization purposes with other sub-bands, short service lives of only around 4 to 7 years were assigned to these frequencies. Hence, no spectrum was purchased by the three Romanian market incumbents, including Telekom Romania Mobile Communications.

As previously, Poland has made no further announcements regarding a new start date for the postponed auction for 3,400 to 3,800 MHz. The process is being held up by incomplete legislative procedures. A further four 80 MHz licenses, capped at 80 MHz, are expected to be awarded by way of an SMRA. All further details of the auction are pending. Romania is planning the award of 5G spectrum in the 700 MHz and 1,500 MHz bands, which is expected to take place in the second half of 2022. The Slovakian regulatory authority is preparing to allocate the 3,400 to 3,800 MHz band, which will not become available for mobile broadband usage before 2024, however. A public consultation was held and the decision made to postpone the award until the first half of 2022. In the meantime, the previously unused 2,600 MHz TDD band (50 MHz) has been added to the spectrum award planning. In the United States, the 3,450 MHz auction began on October 5, 2021, at which the FCC was offering aggregate spectrum of 100 MHz in the 3,450 to 3,550 MHz band. The assignment phase ended on January 4, 2022. The winning bids totaled over USD 22.5 billion, thus surpassing the reserve price of USD 14.7 billion. T-Mobile US paid USD 2.9 billion to secure itself a total of 199 licenses. In Germany, the usage rights for 800; 1,800; and 2,600 MHz are due to expire at the end of 2025. According to its current consultation, the Bundesnetzagentur still sees a considerable need for clarification on a range of issues. Licenses are not expected to be awarded before 2024.

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

Main spectrum awards

	Expected start of award procedure	Expected end of award procedure	Frequency ranges (MHz)	Award procedure	Updated information
Croatia	Q4 2022	Q1 2023	800/900/1,800/2,100/2,600 1,500/3,400-3,800/26,000	Details tbd	800-2,600 MHz: extension expected. 1,500 MHz, unsold residual spectrum in 3,400-3,800 MHz and 26,000 MHz only if there is market interest.
Poland	Q1 2022	Q2 2022	3,400-3,800	Auction (SMRA ^a), 4 blocks of 80 MHz, capped at 80 MHz	New start delayed further due to political discussions on national security guidelines (Cyber Security Act).
Poland	Q3 2022	Q4 2022	700/2,100/26,000	Auction, details tbd	Plans for all bands still unclear due to discussions on award models, 700 MHz border coordination talks with Russia at a standstill.
Romania	H2 2022	H2 2022	700/1,500	Auction, details tbd	
Slovakia	Q2 2022	H2 2022	3,400-3,800/2,600 (TDD)	Auction (SMRA ^a), Terms of use tbd, capped at 100 MHz	Second consultation to finalize the rules ended in Q4 2021. Decision is still outstanding. Auction expected to start in Q2 2022.
Czech Republic	Q3 2023	Q1 2024	900/1,800/2,100	Extension expected	TMCZ's 900/1,800 MHz GSM license and 2,100 MHz UMTS license will expire in 2024.
United States	H1 2022	H1 2022	2,500-2,700	Auction, details tbd	Public consultation in progress.

^a SMRA: simultaneous (electronic) multi-round auction with ascending, parallel bids for all available frequency bands.

Development of business in the Group

Statement of the Board of Management on business development in 2021

Bonn, February 15, 2022

We continued our growth course in all segments in 2021, such that we can look back on a successful financial year. Measured in terms of customer numbers, we further consolidated our position on the U.S. mobile market, adding 6.7 million customers in the reporting year. We have reached key milestones to secure control of T-Mobile US in the long term and, on this side of the Atlantic too, significant transactions have been closed and reorganizations completed. The synergies arising from the business combination of T-Mobile US and Sprint are impacting on our results faster and with greater effect than previously expected. In Europe, our integrated products are enjoying strong demand and we are making good progress in the network build-out, especially in 5G and optical fiber. In our home market, too, we have received great recognition for our performance in terms of service, network build-out, and our integrated products. It is and remains important to us to fulfill our responsibility to society at all times and in all places – especially during the coronavirus pandemic or the catastrophic flooding in summer 2021.

We also kept an eye on our ambitious climate goals. Since 2021, our customers have been surfing on Deutsche Telekom's green network, and our own energy consumption for all Group units has been covered entirely by electricity from renewable energy sources. To underscore the major significance of our sustainability targets in the Group, a performance management and incentivization system was introduced in 2021 using annual variable remuneration for members of the Board of Management.

We achieved our most important corporate targets in 2021 and even exceeded some of them, as can be seen from our key financial figures and our customer development. We raised our full-year guidance for 2021 three times in the course of the year, despite the coronavirus pandemic. Net revenue increased by 7.7 % to EUR 108.8 billion. Service revenue was up 6.5 % to EUR 84.1 billion. This is the result of the high popularity of our mobile and broadband offerings in particular. In the U.S. business, T-Mobile US once again recorded strong customer additions, especially in postpaid business, which is also reflected in revenue development. In Systems Solutions, however, order entry fell short of expectations. Declines in both traditional IT infrastructure business and SAP business were only partially offset by the strong upward trends in our growth areas.

Adjusted EBITDA AL grew by 6.6 % to EUR 37.3 billion. The main reason for this increase is a sound operational development, driven by revenue growth and further enhanced cost efficiency. Excluding the effect from the planned withdrawal from the terminal equipment lease model in the United States, adjusted core EBITDA AL increased by 10.1 % year-on-year. EBIT increased by 2.0 % to EUR 13.1 billion, despite significant negative special factors that affected it. These mainly related to acquisition and integration costs as well as restructuring costs to realize cost efficiencies from the business combination with Sprint. By contrast, lower expenses for staff restructuring and a gain on deconsolidation from the sale of the Dutch cell tower business had a positive effect. Depreciation, amortization, and impairment losses were higher than in the prior year, due in particular to the first-time inclusion of Sprint for the full year.

Loss from financial activities increased by EUR 1.0 billion year-on-year due in part to negative remeasurement effects in connection with derivatives. Net profit remained stable at EUR 4.2 billion. Adjusted net profit increased by 2.6 % to EUR 5.9 billion. Adjusted earnings per share increased to EUR 1.22.

ROCE decreased year-on-year to 4.1 %, largely due to higher integration costs in connection with the business combination of T-Mobile US and Sprint. Furthermore, the prior-year figure had been positively impacted by the reversal of impairment losses previously recognized for spectrum licenses at T-Mobile US.

Net debt increased from EUR 120.2 billion to EUR 132.1 billion. This is primarily attributable to the key investments in spectrum licenses, mainly in connection with the C-band auction in the United States segment. But net debt was also increased as a result of additions of lease liabilities, the acquisition of Shentel, and currency transaction effects.

The trends in the industry, in particular on the European telecommunications markets, remain challenging due to ongoing competitive pressure and strict regulatory requirements. In order to succeed in the future, we continue to invest heavily in the key to our success: our network infrastructure and our technology. In 2021, we made Group-wide investments (before spectrum) of EUR 18.0 billion, with a focus on the parallel build-out of our broadband and mobile infrastructure (optical fiber and 5G). Including the spectrum payments, this figure was EUR 26.4 billion in the reporting year. And, as announced, we are increasing our investment volume again. Despite this, we are still a solid investment-grade company with access to the international capital markets. The rating agency Moody's even upgraded our rating outlook in June 2021. Our free cash flow AL (before dividend payments and spectrum investment) increased by 40.1 % to EUR 8.8 billion.

At our [Capital Markets Day](#) in May 2021, we presented the financial strategy and our targets through 2024, which anticipate constant EPS growth. Through 2024, we want to further accelerate our forecast for growth from the past few years. We pursue a sustainable dividend policy for our shareholders. We intend to pay a dividend of 40 to 60 % of adjusted earnings per share. And we are sticking by a minimum dividend of EUR 0.60 per share: For the 2021 financial year, we will propose a dividend of EUR 0.64 per dividend-bearing share. This year, the dividend will once again be paid out without any deduction of capital gains tax, and we expect this to be also the case in the years to come. After a restrained 2020, the stock markets proved rather strong in 2021, despite the ongoing pandemic situation. The T-Share closed 2021 up 9.0 %. On a total return basis, it was up by as much as 12.9 %.

We aim to transform ourselves from our position as Leading European Telco into the Leading Digital Telco. Our goal is clear: We want to align ourselves long-term with the needs of our customers and systematically transform ourselves into a simple, digital, and in every way agile company to hold our own against new competitors and continue our growth course. Building and operating the best convergent networks remains at the core of our strategy and is an important driver for our growth areas. We realize our aim to lead in technology by investing not only in network infrastructure, but also in establishing cloud-based service platforms. We leverage our international footprint to generate synergies across the Group and to carry weight alongside the global tech giants. We apply our expertise – the Magenta Advantage – to develop new business models.

Business combination of T-Mobile US and Sprint

Sprint has been included in Deutsche Telekom's consolidated financial statements as a fully consolidated subsidiary since April 1, 2020. As a result of the change in the composition of the Group during the year, the remeasured assets and liabilities were recognized as of this date, and all income and expenses generated from the date of first-time consolidation are included in Deutsche Telekom's consolidated income statement. This continues to impact on the comparability of the presentation of the results of operations and financial position over time.

Reassignment of the Internet of Things (IoT) growth area

Effective January 1, 2021, Deutsche Telekom reassigned the responsibility for business and profit and loss for Deutsche Telekom IoT GmbH from the Systems Solutions operating segment to the business customer unit in the Germany operating segment. Prior-year comparatives in both of the segments (development of operations, customer development, headcount development, and order entry) were adjusted retrospectively.

For further information on the reassignment of the IoT business, please refer to the sections "[Group organization](#)" and "[Segment reporting](#)" in the notes to the consolidated financial statements.

Comparison of the Group's expectations with actual figures

In the 2020 Annual Report, we outlined expectations for the 2021 financial year for our financial and non-financial key performance indicators anchored in our management system. The following tables summarize the pro forma figures for 2020, the results expected for the reporting year, and the actual results achieved in 2021. The performance indicators that we also forecast in the 2020 Annual Report and their development are presented in the individual sections.

Comparison of the expected financial key performance indicators with actual figures

		Pro forma figures for 2020	Expectations for 2021	Results in 2021
ROCE	%	4.6	decrease	4.1
Net revenue	billions of €	106.7	slight increase	108.8
Service revenue	billions of €	83.3	increase	84.1
Profit (loss) from operations (EBIT)	billions of €	13.5	slight decrease	13.1
EBITDA AL (adjusted for special factors) ^a	billions of €	37.6	around 38	37.3
Earnings per share (adjusted for special factors)	€	1.20	slight decrease	1.22
Free cash flow AL (before dividend payments and spectrum investment) ^{a, b}	billions of €	6.6	around 8.5	8.8
Cash capex (before spectrum investment)	billions of €	(17.8)	(18.4)	(18.0)
Rating (Standard & Poor's, Fitch)		BBB, BBB+	from A- to BBB	BBB, BBB+
Rating (Moody's)		Baa1	from A3 to Baa2	Baa1

^a Contrary to the forecasts published in the 2020 combined management report (2020 Annual Report), we adjusted the guidance for 2021 for EBITDA AL (adjusted for special factors) and free cash flow AL (before dividend payments and spectrum investment) during the course of the year (Interim Group Reports as of March 31, 2021, June 30, 2021, and September 30, 2021).

^b Before interest payments for zero-coupon bonds and before termination of forward-payer swaps at T-Mobile US (both in 2020).

The comparison shown in the table of the pro forma figures for 2020 and the expectations formulated on this basis for 2021 with the results actually generated for 2021 is not like-for-like, i.e., these figures are not based on comparable exchange rates. The results generated on a like-for-like basis are set out below.

Our business performance was once again characterized by positive growth rates for our key performance indicators. We met or significantly exceeded our expectations. In organic terms, i.e., adjusted for exchange rate effects and changes in the composition of the Group, we recorded not just moderate growth, but a substantial increase of 4.5 % in revenue, with significant organic growth of 3.5 % in service revenue as well. Adjusted for exchange rate effects and changes in the composition of the Group, adjusted EBITDA AL increased by 1.9 %, despite the gradual withdrawal from the terminal equipment lease business model in the United States. With negative exchange rate effects being taken into account, adjusted EBITDA AL was well ahead of our latest guidance of around EUR 38 billion. In line with our strong operational performance, adjusted earnings per share exceeded our expectation, at EUR 1.22. At EUR 8.8 billion, free cash flow AL (before dividend payments and spectrum investment) clearly exceeded our latest guidance of around EUR 8.5 billion, even without negative exchange rates being taken into account. For cash capex (before spectrum investment), we met our guidance on a like-for-like basis with the prior year. ROCE decreased, as expected, due to the integration costs arising in connection with the business combination of T-Mobile US and Sprint.

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

		Pro forma figures for 2020	Expectations for 2021	Results in 2021
Customer satisfaction (TRI*M index)		72.2	slight increase	73.4
Employee satisfaction (commitment score) ^a		4.0	stable trend	77
Fixed-network and mobile customers				
Germany				
Mobile customers	millions	48.5	increase	53.2
Fixed-network lines	millions	17.6	stable trend	17.5
Retail broadband lines	millions	14.1	increase	14.5
United States				
Postpaid customers	millions	81.4	increase	87.7
Prepaid customers	millions	20.7	increase	21.1
Europe				
Mobile customers	millions	45.6	slight increase	45.8
Fixed-network lines	millions	9.1	stable trend	7.8
Broadband customers	millions	7.0	increase	6.4
Systems Solutions				
Order entry	billions of €	4.6	stable trend	4.2

^a Commitment score as per the 2021 employee survey. In 2021, we changed from a scale of 1 to 5 for the commitment score (previously the “commitment index”) to a scale of 0 to 100.

We are also well on track with our non-financial performance indicators. In the Germany and United States operating segments, our customer numbers developed in line with expectations or even exceeded them. In our home market, we recorded, as expected, customer additions of around 5 million especially in mobile communications. In the United States operating segment too, we once again recorded strong growth in postpaid customers: The number of customers increased by 5.5 million, thereby exceeding our already high expectations. Our Europe operating segment recorded a stable, or in some cases a declining trend in customer numbers compared with the guidance level. This is mainly due to the sale of Telekom Romania Communications as of September 30, 2021, which was not yet taken into account in the guidance for 2021 stated in the 2020 Annual Report. Order entry in our Systems Solutions operating segment fell short of our expectations. This development was mainly due to a decline in both traditional IT infrastructure business and SAP business, which was only partially offset by the strong upward trends in our growth areas.

Employee satisfaction held steady at the high level of 77 points in 2021, after revising the measurement model on a like-for-like basis. At the end of the reporting year, customer satisfaction came in at 73.4 points compared with an adjusted baseline figure of 72.7 points at the start of the year. Following changes to the revenue shares contributed by each country and in order to create an equivalent basis for comparing the Group’s expectations with actual figures, we recalculated the baseline figure for 2021 on the basis of the new structures these changes entailed. The new baseline thus diverges from the figure of 72.2 reported as of December 31, 2020. The Germany and Systems Solutions operating segments contributed to the positive development with improvements in customer loyalty. Our aim for the next few years is to further improve customer satisfaction for Germany and Europe; in Systems Solutions, we want to stabilize the already high level.

For further information on the trends in our main financial and non-financial performance indicators, please refer to the relevant passages in this section as well as in the section [“Development of business in the operating segments.”](#)

Results of operations of the Group

Net revenue, service revenue

In 2021, we generated net revenue of EUR 108.8 billion, which was 7.7 % or EUR 7.8 billion up on the prior-year level. In organic terms, i.e., assuming a comparable composition of the Group in the prior year and excluding exchange rate effects, revenue developed positively, with growth of EUR 4.7 billion or 4.5 %. For a comparison on an organic basis, net revenue in the prior-year period was raised by EUR 5.5 billion to account for effects of changes in the composition of the Group – primarily from the acquisition of Sprint, the disposal of Sprint's prepaid business to DISH and the acquisition of Shentel in the United States operating segment – and net exchange rate effects of EUR -2.3 billion were taken into account. Service revenue in the Group increased by EUR 5.2 billion or 6.5 % year-on-year to EUR 84.1 billion.

Contribution of the segments to net revenue

millions of €

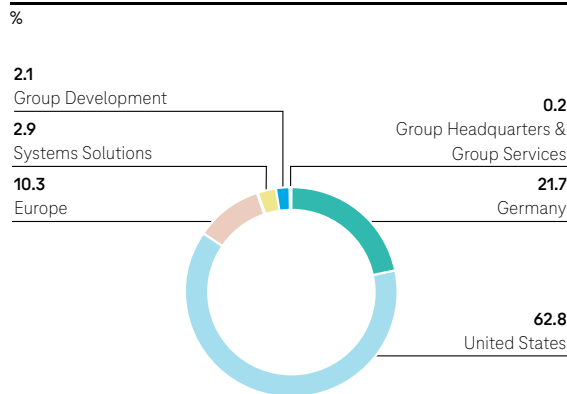
	2021	2020	Change	Change %	2019
Net revenue	108,794	100,999	7,795	7.7	80,531
Of which: service revenue ^a	84,057	78,893	5,164	6.5	n.a.
Germany	24,164	23,790	374	1.6	23,750
United States	68,359	61,208	7,151	11.7	40,420
Europe	11,384	11,335	49	0.4	11,587
Systems Solutions	4,019	4,159	(140)	(3.4)	4,411
Group Development	3,165	2,883	282	9.8	2,797
Group Headquarters & Group Services	2,515	2,556	(41)	(1.6)	2,627
Intersegment revenue	(4,812)	(4,932)	120	2.4	(5,061)

^a The definition of "service revenue" was not applied consistently Group-wide for the years prior to 2020.

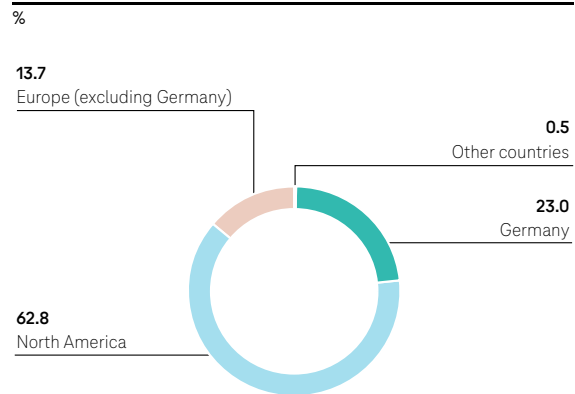
Our United States operating segment in particular contributed to the positive revenue trend with an increase of 11.7 %. In organic terms, i.e., in particular assuming the inclusion of Sprint for the full year in the prior year and constant exchange rates, revenue increased by 5.8 % year-on-year due to both higher service revenues and higher terminal equipment revenues. Revenue in our home market of Germany was up on the prior-year level, increasing by 1.6 %. This was mainly driven by an increase in revenue in the fixed-network core business, primarily due to broadband business, and in mobile service revenues. Our Europe operating segment recorded revenue growth of 0.4 %. In organic terms, i.e., in particular adjusted for the sale of the Romanian fixed-network business and assuming constant exchange rates, revenue increased by 2.4 %. Organic growth was mainly driven by the strong performance of the mobile business, especially the increase in mobile service revenues with higher margins, slight increases in roaming and visitor revenues, and higher revenues from terminal equipment sales. Fixed-network service revenues developed slightly better. Revenue in our Systems Solutions operating segment was down 3.4 % year-on-year. This decrease was mainly driven by the expected decline in traditional IT infrastructure business, due in part to deliberate business decisions such as the reduction in end-user services. By contrast, our growth areas grew significantly, especially public cloud, digital solutions, and road charging. Revenue in our Group Development operating segment increased by 9.8 %. In organic terms, i.e., adjusted for the sale of the Dutch cell tower business, the transfer of the Austrian cell tower business, as well as the acquisition of the Dutch MVNO and SIM provider Simpel, revenue increased by 4.6 %. This revenue increase resulted from the operational and structural growth of our two business units T-Mobile Netherlands and GD Towers, which includes DFMG and the Austrian cell tower business.

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

Contribution of the segments to net revenue^a



Breakdown of revenue by region



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

At 62.8 %, our United States operating segment provided by far the largest contribution to net revenue of the Group and in particular thanks to the acquisition of Sprint was up 2.2 percentage points above the level in the prior year. In this connection, the proportion of net revenue generated internationally also increased significantly from 75.5 % to 77.0 %.

Adjusted EBITDA AL, EBITDA AL

Adjusted EBITDA AL increased year-on-year by EUR 2.3 billion or 6.6 % to EUR 37.3 billion in 2021. In organic terms, adjusted EBITDA AL increased by EUR 0.7 billion or 1.9 %. For a comparison on an organic basis, adjusted EBITDA AL in the prior-year period was raised by EUR 2.5 billion to account for effects of changes in the composition of the Group – primarily from the acquisition of Sprint and the disposal of Sprint's prepaid business to DISH in the United States operating segment – and net exchange rate effects of EUR -0.9 billion were taken into account. Adjusted core EBITDA AL, which is distinguished by excluding revenue from terminal equipment leases in the United States from adjusted EBITDA AL, thereby presenting operational development undistorted by the withdrawal from the terminal equipment lease business, increased by EUR 3.2 billion or 10.1 % to EUR 34.5 billion.

Contribution of the segments to adjusted Group EBITDA AL

	Proportion of adjusted Group EBITDA AL		2020	Proportion of adjusted Group EBITDA AL	Change	Change %	2019
	2021	%					
EBITDA AL (adjusted for special factors) in the Group	37,330	100.0	35,017	100.0	2,313	6.6	24,731
Germany	9,520	25.5	9,188	26.2	332	3.6	9,026
United States	22,697	60.8	20,997	60.0	1,700	8.1	11,134
Europe	4,007	10.7	3,910	11.2	97	2.5	3,910
Systems Solutions	286	0.8	279	0.8	7	2.5	307
Group Development	1,307	3.5	1,101	3.1	206	18.7	1,033
Group Headquarters & Group Services	(440)	(1.2)	(429)	(1.2)	(11)	(2.6)	(650)
Reconciliation	(47)	(0.1)	(28)	(0.1)	(19)	(67.9)	(29)

All operating segments made a positive contribution to this development. Adjusted EBITDA AL of our United States operating segment increased significantly as a result of the business combination of T-Mobile US and Sprint, among other factors. In organic terms, i.e., adjusted for the effect of the acquisition of Sprint and assuming constant exchange rates, adjusted EBITDA AL stood at the prior-year level. The aforementioned higher service and equipment revenues had a positive effect. This was offset by negative effects of the planned withdrawal from the terminal equipment lease model in the United States and higher operational expenses – primarily in connection with the acquisition of Sprint. Adjusted core EBITDA AL, i.e., the earnings measure undistorted by the withdrawal from the terminal equipment lease business, increased by EUR 2.5 billion or 14.7 % to EUR 19.9 billion. Our Germany operating segment contributed to the increase thanks to high-value revenue growth and improved cost efficiency with 3.6 % higher adjusted EBITDA AL. Adjusted EBITDA AL in our Europe operating segment increased by 2.5 %. In organic terms, i.e., adjusted for the sale of the Romanian fixed-network business and the transfer of the Austrian cell tower business, and assuming constant exchange rates, adjusted EBITDA AL increased by 5.4 %. In addition to the positive revenue effects, savings in indirect costs also contributed to this development. Adjusted EBITDA AL in our Systems Solutions operating segment also increased by 2.7 %. Efficiency effects from our transformation program and effects from increased revenue in our growth areas exceeded the decline in earnings in the traditional IT infrastructure business. Adjusted EBITDA AL in our Group Development operating segment increased by 18.7 % year-on-year; in organic terms, it grew by 13.5 %. This growth was attributable to the positive revenue trend at T-Mobile Netherlands, the acquisition of Simpel, and efficient cost management at T-Mobile Netherlands. The GD Towers business posted consistent growth on the back of rising volumes and was further strengthened by the transfer of the Austrian cell tower business.

EBITDA AL increased by EUR 0.7 billion or 2.2 % year-on-year to EUR 33.9 billion, with special factors changing from EUR -1.8 billion to EUR -3.4 billion. Expenses incurred in connection with staff-related measures decreased from EUR 1.3 billion in the prior-year period by EUR 0.6 billion to EUR 0.7 billion. Part of this decrease was attributable to the reversal of other provisions for personnel costs, which had been recognized by OTE in 2010 and 2011 in connection with an additional payment to the Greek social insurance fund, as a result of proceedings concluded in September 2021. Net expenses of EUR 2.5 billion were recorded as special factors under effects of deconsolidations, disposals, and acquisitions. EUR 2.6 billion of the expenses mainly related to acquisition and integration costs as well as restructuring costs to realize cost efficiencies from the business combination of T-Mobile US and Sprint. In this context, EUR 0.8 billion related to a reduction in the useful life of leased network technology for cell sites in the United States. In the prior year, net expenses of EUR 1.7 billion had been recorded as special factors under effects of deconsolidations, disposals, and acquisitions. EUR 1.5 billion of these also mainly related to the business combination with Sprint. In addition, in the Group Development operating segment, EBITDA AL was influenced by net positive special factors of EUR 0.2 billion, which related to the gain on deconsolidation due to the sale of the Dutch cell tower business. Reversals of impairment losses of EUR 1.7 billion had been recognized in the prior year and mainly related to the partial reversal of impairment losses on spectrum licenses at T-Mobile US, which increased the carrying amount. Other special factors affecting EBITDA AL in the prior year amounted to EUR 0.5 billion and mainly related to expenses incurred in the United States operating segment in connection with the coronavirus pandemic.

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

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

millions of €					
	2021	2020	Change	Change %	2019
EBITDA	40,539	38,633	1,906	4.9	27,120
Depreciation of right-of-use assets ^a	(5,547)	(4,530)	(1,017)	(22.5)	(3,181)
Interest expenses on recognized lease liabilities ^a	(1,099)	(925)	(174)	(18.8)	(796)
EBITDA AL	33,893	33,178	715	2.2	23,143
Special factors affecting EBITDA AL	(3,437)	(1,839)	(1,598)	(86.9)	(1,589)
EBITDA AL (adjusted for special factors)	37,330	35,017	2,313	6.6	24,731

^a Excluding finance leases at T-Mobile US.

EBIT

Group EBIT increased from EUR 12.8 billion to EUR 13.1 billion, up EUR 0.3 billion or 2.0 % against the prior year. This increase is partly due to the effects described under adjusted EBITDA AL and EBITDA AL. At EUR 27.5 billion, depreciation, amortization and impairment losses were EUR 1.7 billion higher than in the prior year. This increase is attributable, among other factors, to the first-time inclusion of Sprint for the full year. Furthermore, in the United States operating segment, a reduction in the useful life of leased network technology for cell sites following the business combination of T-Mobile US and Sprint increased depreciation of the corresponding right-of-use assets by EUR 0.8 billion. Impairment losses decreased from EUR 0.8 billion to EUR 0.3 billion. Of the prior-year figure, a total of EUR 0.5 billion had related to the Systems Solutions operating segment and the Group Headquarters & Group Services segment, and EUR 0.2 billion to the Europe operating segment. Of the impairment losses recognized in the reporting year, EUR 0.2 billion related to the Systems Solutions operating segment and the Group Headquarters & Group Services segment. This was a consequence of several factors, including the ad hoc impairment testing carried out in the Systems Solutions cash-generating unit in the prior year. In addition, despite the marginal improvement in the business outlook, the increase in the cost of capital in the reporting year prompted further impairment losses to be recognized on non-current assets in the Systems Solutions cash-generating unit at the end of 2021.

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

Profit before income taxes

Profit before income taxes decreased by EUR 0.8 billion or 8.7 % to EUR 7.9 billion. Loss from financial activities increased from EUR 4.1 billion to EUR 5.1 billion, with finance costs increasing by EUR 0.4 billion to EUR 4.6 billion, mainly due to the financial liabilities assumed in connection with the acquisition of Sprint and the related restructuring and increase in financing. In this connection, between April 2020 and the end of 2021, existing T-Mobile US bonds were repaid prematurely and new bonds were issued in their place at more favorable terms and conditions. Other financial income/expense decreased by EUR 0.5 billion year-on-year, resulting in other financial expense of EUR 0.4 billion. On the one hand, gains/losses from financial instruments decreased by EUR 1.2 billion to a loss of EUR 0.6 billion, due in part to negative measurement effects resulting, among other factors, from embedded derivatives at T-Mobile US and from a forward transaction to hedge the price of acquiring T-Mobile US shares in the future. By contrast, net positive measurement effects resulted from the amortization and subsequent measurement of the stock options received from SoftBank in June 2020 to purchase shares in T-Mobile US. On the other hand, the interest component from the measurement of provisions and liabilities increased, in particular in the Group Headquarters & Group Services segment, by EUR 0.7 billion.

Net profit, adjusted net profit

At EUR 4.2 billion, net profit remained at the prior-year level. Tax expense decreased by EUR 0.1 billion to EUR 1.8 billion. Profit attributable to non-controlling interests decreased from EUR 2.6 billion to EUR 1.9 billion. This mainly relates to our United States operating segment. Excluding special factors, which had a negative overall effect of EUR 1.7 billion on net profit, adjusted net profit amounted to EUR 5.9 billion, up 2.6 % against the prior year.

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

millions of €	2021	2020	Change	Change %	2019
Net profit (loss)	4,176	4,158	18	0.4	3,867
Special factors affecting EBITDA AL	(3,437)	(1,839)	(1,598)	(86.9)	(1,589)
Staff-related measures	(717)	(1,268)	551	43.5	(913)
Non-staff-related restructuring	(22)	(32)	10	31.2	(81)
Effects of deconsolidations, disposals and acquisitions	(2,542)	(1,655)	(887)	(53.6)	(462)
Reversals of impairment losses	0	1,655	(1,655)	(100.0)	0
Other	(156)	(539)	383	71.1	(132)
Special factors affecting net profit	1,751	283	1,468	n.a.	510
Impairment losses	(258)	(656)	398	60.7	(368)
Profit (loss) from financial activities	(139)	(25)	(114)	n.a.	(4)
Income taxes	1,064	730	334	45.8	461
Non-controlling interests	1,084	234	850	n.a.	421
Special factors	(1,686)	(1,557)	(129)	(8.3)	(1,081)
Net profit (loss) (adjusted for special factors)	5,862	5,715	147	2.6	4,948

Earnings per share, adjusted earnings per share

Earnings per share is calculated as net profit divided by the adjusted weighted average number of ordinary shares outstanding, which totaled 4,813 million as of December 31, 2021. This resulted in earnings per share of EUR 0.87, compared with EUR 0.88 in the prior year. Adjusted earnings per share, adjusted for special factors affecting net profit, amounted to EUR 1.22 compared with EUR 1.20 in the prior year.

Special factors

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

millions of €						
	EBITDA AL 2021	EBIT 2021	EBITDA AL 2020	EBIT 2020	EBITDA AL 2019	EBIT 2019
EBITDA AL/EBIT	33,893	13,057	33,178	12,804	23,143	9,457
Germany	(588)	(588)	(752)	(805)	(458)	(458)
Staff-related measures	(471)	(471)	(676)	(676)	(423)	(423)
Non-staff-related restructuring	(12)	(12)	(18)	(18)	(38)	(38)
Effects of deconsolidations, disposals and acquisitions	(3)	(3)	(18)	(18)	0	0
Impairment losses	0	0	0	(52)	0	0
Other	(102)	(102)	(40)	(40)	3	3
United States	(2,637)	(2,692)	(370)	(370)	(544)	(544)
Staff-related measures	(16)	(16)	(32)	(32)	(17)	(17)
Non-staff-related restructuring	0	0	0	0	0	0
Effects of deconsolidations, disposals and acquisitions	(2,621)	(2,618)	(1,522)	(1,522)	(527)	(527)
Impairment losses	0	(58)	0	0	0	0
Reversals of impairment losses	0	0	1,604	1,604	0	0
Other	0	0	(420)	(420)	0	0
Europe	11	11	(188)	(374)	(141)	(461)
Staff-related measures	83	83	(181)	(181)	(111)	(111)
Non-staff-related restructuring	(1)	(1)	0	0	0	0
Effects of deconsolidations, disposals and acquisitions	(39)	(39)	(6)	(6)	(23)	(23)
Impairment losses	0	0	0	(186)	0	(320)
Reversals of impairment losses	0	0	50	50	0	0
Other	(32)	(32)	(51)	(51)	(8)	(8)
Systems Solutions	(213)	(393)	(209)	(582)	(304)	(332)
Staff-related measures	(148)	(148)	(167)	(167)	(149)	(149)
Non-staff-related restructuring	(3)	(3)	(3)	(3)	(4)	(4)
Effects of deconsolidations, disposals and acquisitions	(39)	(39)	0	0	(11)	(11)
Impairment losses	0	(180)	0	(373)	0	(27)
Other	(24)	(24)	(39)	(39)	(141)	(141)
Group Development	173	173	(43)	(43)	97	97
Staff-related measures	(8)	(8)	(11)	(11)	(19)	(19)
Non-staff-related restructuring	0	0	0	0	(1)	(1)
Effects of deconsolidations, disposals and acquisitions	184	184	(30)	(30)	111	111
Impairment losses	0	0	0	0	0	0
Other	(3)	(3)	(2)	(2)	4	4
Group Headquarters & Group Services	(182)	(203)	(277)	(322)	(237)	(237)
Staff-related measures	(157)	(157)	(201)	(201)	(195)	(195)
Non-staff-related restructuring	(7)	(7)	(11)	(11)	(38)	(38)
Effects of deconsolidations, disposals and acquisitions	(23)	(23)	(78)	(78)	(13)	(13)
Impairment losses	0	(21)	0	(44)	0	0
Other	5	5	14	14	9	9
Group	(3,437)	(3,692)	(1,839)	(2,496)	(1,589)	(1,959)
Staff-related measures	(717)	(717)	(1,268)	(1,268)	(913)	(913)
Non-staff-related restructuring	(22)	(22)	(32)	(32)	(81)	(81)
Effects of deconsolidations, disposals and acquisitions	(2,542)	(2,538)	(1,655)	(1,655)	(462)	(462)
Impairment losses	0	(258)	0	(656)	0	(370)
Reversals of impairment losses	0	0	1,655	1,655	0	0
Other	(156)	(156)	(539)	(539)	(132)	(132)

millions of €						
	EBITDA AL 2021	EBIT 2021	EBITDA AL 2020	EBIT 2020	EBITDA AL 2019	EBIT 2019
EBITDA AL/EBIT (adjusted for special factors)	37,330	16,749	35,017	15,300	24,731	11,416
Profit (loss) from financial activities (adjusted for special factors)		(4,998)		(4,103)		(2,192)
Profit (loss) before income taxes (adjusted for special factors)		11,752		11,197		9,223
Income taxes (adjusted for special factors)		(2,879)		(2,659)		(2,454)
Profit (loss) (adjusted for special factors)		8,873		8,538		6,770
Profit (loss) (adjusted for special factors) attributable to						
Owners of the parent (net profit (loss)) (adjusted for special factors)		5,862		5,715		4,948
Non-controlling interests (adjusted for special factors)		3,011		2,823		1,822

Net assets of the Group

Condensed consolidated statement of financial position

millions of €					
	Share of total assets/ liabilities and shareholders' equity				
	Dec. 31, 2021	%	Dec. 31, 2020	Change	Dec. 31, 2019
Assets					
Cash and cash equivalents	7,617	2.7	12,939	(5,322)	5,393
Trade receivables	15,299	5.4	13,523	1,776	10,846
Intangible assets	132,647	47.1	118,066	14,581	68,202
Property, plant and equipment	61,770	21.9	60,975	795	49,548
Right-of-use assets	30,777	10.9	30,302	475	17,998
Current and non-current financial assets	8,888	3.2	9,640	(752)	7,250
Deferred tax assets	7,906	2.8	7,972	(66)	2,704
Non-current assets and disposal groups held for sale	4,856	1.7	1,113	3,743	97
Other assets	11,867	4.2	10,387	1,480	8,634
Total assets	281,627	100.0	264,917	16,710	170,672
Liabilities and shareholders' equity					
Current and non-current financial liabilities	111,466	39.6	107,108	4,358	66,349
Current and non-current lease liabilities	33,133	11.8	32,715	418	19,835
Trade and other payables	10,452	3.7	9,760	692	9,431
Provisions for pensions and other employee benefits	6,134	2.2	7,684	(1,550)	5,831
Current and non-current other provisions	9,463	3.4	9,033	430	6,663
Deferred tax liabilities	19,809	7.0	17,260	2,549	8,954
Liabilities directly associated with non-current assets and disposal groups held for sale	1,365	0.5	449	916	29
Other liabilities	8,336	3.0	8,358	(22)	7,349
Shareholders' equity	81,469	28.9	72,550	8,919	46,231
Total liabilities and shareholders' equity	281,627	100.0	264,917	16,710	170,672

Total assets amounted to EUR 281.6 billion as of December 31, 2021, up by EUR 16.7 billion against December 31, 2020. This increase is mainly attributable to investments in intangible assets for spectrum acquisition in the United States operating segment. Positive exchange rate effects and effects of changes in the composition of the Group, mainly from the first-time inclusion of Shentel, acquired by T-Mobile US, also increased the carrying amount. This effect was offset in part by a decline in cash and cash equivalents.

Cash and cash equivalents decreased by EUR 5.3 billion year-on-year to EUR 7.6 billion.

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

Trade receivables increased by EUR 1.8 billion to EUR 15.3 billion. The increase was primarily driven by higher receivables under the Equipment Installment Plan and growth in customer numbers in the United States operating segment. The carrying amount also increased in the Germany and Europe operating segments due to the reporting date. Exchange rate effects, primarily from the translation from U.S. dollars into euros, also increased receivables. Lower receivables in the Group Development operating segment, primarily as a result of the reclassification of T-Mobile Netherlands' assets to non-current assets and disposal groups held for sale in connection with the agreed sale, had an offsetting effect.

Intangible assets and property, plant and equipment increased by EUR 15.4 billion to EUR 194.4 billion in total, EUR 8.4 billion of which resulted from the acquisition of mobile spectrum in the United States operating segment, primarily in connection with the conclusion of the FCC C-band auction in the United States. T-Mobile US purchased 142 licenses for around EUR 7.8 billion (USD 9.3 billion) in the auction and made initial "relocation payments" of EUR 0.2 billion to relocate incumbent licensees. Furthermore, in the Europe operating segment, licenses were acquired for a total of EUR 0.3 billion, including in the Czech Republic and Hungary. Capital expenditure to upgrade and build out the network and acquire mobile terminal equipment in our United States operating segment and in connection with the broadband/fiber-optic build-out and mobile infrastructure in the Germany and Europe operating segments also increased the carrying amount. Exchange rate effects of EUR 10.4 billion and effects of changes in the composition of the Group of EUR 1.6 billion, mainly from the first-time inclusion of Shentel, acquired by T-Mobile US, also increased the carrying amount. Depreciation, amortization and impairment losses reduced the net carrying amounts by EUR 21.3 billion in total. The reclassification of assets to non-current assets and disposal groups held for sale reduced the carrying amounts by EUR 3.1 billion. These reclassifications mainly resulted from the agreed sale of T-Mobile Netherlands and the agreed sale of the 50 % stake in GlasfaserPlus GmbH. In addition, disposals decreased the carrying amounts by EUR 1.7 billion.

For further information on the acquisition of Shentel and the agreed sale of T-Mobile Netherlands, please refer to the section "[Changes in the composition of the Group and other transactions](#)" in the consolidated financial statements.

Compared with December 31, 2020, **right-of-use assets** increased by EUR 0.5 billion to EUR 30.8 billion. The carrying amount was increased by additions of EUR 5.5 billion, including as a result of a sale and leaseback transaction concluded after the combination of the cell tower business in the Netherlands and the set-up of an infrastructure fund. The carrying amount was also increased by exchange rate effects of EUR 2.1 billion, primarily from the translation of U.S. dollars into euros, and effects from changes in the composition of the Group of EUR 0.3 billion, mainly in connection with the acquisition of Shentel. The carrying amount was decreased by depreciation, amortization and impairment losses of EUR 6.2 billion. This included a EUR 0.8 billion increase in depreciation and amortization due to a reduction in the useful life of leased network technology for cell sites in the United States operating segment following the business combination of T-Mobile US and Sprint. The reclassification of T-Mobile Netherlands's assets to non-current assets and disposal groups held for sale in the amount of EUR 0.5 billion and disposals of EUR 0.4 billion also reduced the carrying amount. In addition, reclassifications of lease assets at the end of the contractual lease term to property, plant and equipment, in the United States operating segment in particular, reduced the carrying amount by EUR 0.2 billion.

Current and non-current **financial assets** decreased by EUR 0.8 billion to EUR 8.9 billion. The carrying amount of derivatives with a hedging relationship decreased by EUR 0.5 billion to EUR 1.6 billion, mainly due to the decrease in positive fair values from interest rate swaps in fair value hedges, which is primarily the result of a rise in the interest rate level. The carrying amount of derivatives without a hedging relationship decreased by a net effect of EUR 0.8 billion to EUR 1.2 billion. Taking into account the partial exercising of the stock options received from SoftBank in June 2020 to purchase shares in T-Mobile US, as well as measurement effects, the carrying amount of these stock options decreased by EUR 0.6 billion compared with December 31, 2020. In addition, the carrying amount of the derivatives without a hedging relationship decreased by EUR 0.4 billion in connection with embedded derivatives of T-Mobile US. This related in part to the premature repayment of bonds. By contrast, the carrying amount was increased by positive measurement effects of EUR 0.1 billion from energy forward agreements embedded in contracts. Receivables from grants still to be received from funding projects for the broadband build-out in Germany increased by EUR 0.1 billion year-on-year.

Non-current assets and disposal groups held for sale increased by EUR 3.7 billion compared with December 31, 2020 to EUR 4.9 billion. EUR 4.7 billion of the increase resulted from the reclassification of T-Mobile Netherlands' assets in connection with the sale agreed as of September 6, 2021 and EUR 0.1 billion from the agreement concluded on November 5, 2021 on the sale of 50 % of the shares in GlasfaserPlus. By contrast, the sale of the Dutch company T-Mobile Infra as of June 1, 2021 and of Telekom Romania Communications as of September 30, 2021 had decreasing effects on the carrying amount of EUR 0.4 billion and EUR 0.6 billion respectively.

For further information on the corporate transactions, please refer to the section "[Group organization](#)."

The increase in **other assets** of EUR 1.5 billion to EUR 11.9 billion was due in part to the increase in the carrying amount of investments accounted for using the equity method, mainly as a result of the combination of the cell tower business in the Netherlands and the set-up of an infrastructure fund. As a result of the transaction, 37.65 % of the shares in Cellnex NL with a carrying amount of EUR 0.4 billion were included in the Group Development operating segment in the consolidated financial statements using the equity method. Other assets increased by EUR 0.5 billion, in part in connection with an increase in advance payments for hardware and support services in the United States operating segment. Capitalized contract costs increased by EUR 0.4 billion due to higher levels of capitalized costs of obtaining contracts in postpaid customer business in the United States operating segment. These mainly related to sales commissions paid to employees and third-party retailers. Inventories increased by EUR 0.2 billion compared with December 31, 2020, primarily due to increased stockpiling of high-priced devices for planned marketing campaigns in the United States operating segment. Exchange rate effects also increased the carrying amount.

For further information on the combination of the cell tower business in the Netherlands and the set-up of an infrastructure fund, please refer to the section [“Group organization.”](#)

On the liabilities and shareholders' equity side, **current and non-current financial liabilities** increased by EUR 4.4 billion compared with the end of 2020 to a total of EUR 111.5 billion. Exchange rate effects, in particular from the translation of U.S. dollars into euros, raised the carrying amount by EUR 5.0 billion. T-Mobile US issued senior notes in the 2021 financial year with a total volume of USD 14.8 billion (EUR 12.5 billion) and made early repayments on bonds with a total volume of USD 5.8 billion (EUR 4.8 billion). In addition, T-Mobile US repaid bonds with a volume of USD 3.3 billion (EUR 2.8 billion) on schedule. Furthermore, AUD bonds with a volume of AUD 0.1 billion (EUR 0.1 billion) and euro bonds with a volume of EUR 0.1 billion were issued within the Group, and euro bonds with a volume of EUR 2.3 billion and U.S. dollar bonds with a volume of USD 0.6 billion (EUR 0.5 billion) were repaid. The carrying amount of liabilities to banks decreased by EUR 1.3 billion compared with December 31, 2020. Financial liabilities decreased by EUR 0.1 billion in connection with collateral received for derivative financial instruments.

Current and non-current lease liabilities increased by EUR 0.4 billion to EUR 33.1 billion compared with December 31, 2020. Exchange rate effects, in particular from the translation of U.S. dollars into euros, raised the carrying amount by EUR 2.2 billion. Effects of changes in the composition of the Group, mainly from the first-time inclusion of Shentel, acquired by T-Mobile US accounting for EUR 0.3 billion, also increased the carrying amount. This was offset in particular by an advance payment for the lease of cell sites of EUR 0.9 billion made by T-Mobile US to a U.S. cell tower company in September 2021 in connection with a change to the existing lease agreed in the reporting period and a decline of EUR 0.6 billion, due in part to the decommissioning of former Sprint cell sites and the closure of some former Sprint shops in the United States operating segment. The reclassification of the liabilities of T-Mobile Netherlands to liabilities directly associated with non-current assets and disposal groups held for sale also decreased the carrying amount.

For further information on the development of financial liabilities, please refer to Note 13 [“Financial liabilities and lease liabilities”](#) in the notes to the consolidated financial statements.

Trade and other payables increased by EUR 0.7 billion to EUR 10.5 billion, mainly due to higher liabilities to suppliers of mobile terminal equipment in the United States operating segment and exchange rate effects, in particular from the translation of U.S. dollars into euros. By contrast, liabilities in the Group Development operating segment decreased as a result of the reclassification of T-Mobile Netherlands' liabilities to liabilities directly associated with non-current assets and disposal groups held for sale.

Provisions for pensions and other employee benefits decreased by EUR 1.6 billion compared with December 31, 2020 to EUR 6.1 billion, mainly due to an increase in the share prices of plan assets and interest rate adjustments. All this resulted in an actuarial gain of EUR 1.4 billion from the remeasurement of defined benefit plans to be recognized directly in equity.

Current and non-current **other provisions** increased by EUR 0.4 billion compared with December 31, 2020 to EUR 9.5 billion, with other personnel provisions increasing by EUR 0.3 billion, which was attributable, in part, to short-term variable remuneration, phased retirement, and vacation. By contrast, the provisions recognized for the Civil Service Health Insurance Fund (Postbeamtenkrankenkasse – PBeaKK) decreased by EUR 0.1 billion, which is mainly attributable to the subsequent measurement of the present value determined using actuarial principles (interest effect). The provisions for restoration obligations increased by EUR 0.2 billion. Within provisions for termination benefits, provisions were reduced by, among other factors, the reversal of other provisions for personnel costs of EUR 0.1 billion, which had been recognized by OTE in 2010 and 2011 for an additional payment to the Greek social insurance fund, as a result of proceedings concluded in September 2021.

Liabilities directly associated with non-current assets and disposal groups held for sale increased by EUR 0.9 billion against December 31, 2020 to EUR 1.4 billion. Of this increase, EUR 1.4 billion resulted from the reclassification of T-Mobile Netherlands' liabilities in connection with the agreed sale. By contrast, the sale of the Dutch company T-Mobile Infra as of June 1, 2021 and of Telekom Romania Communications as of September 30, 2021 in particular had decreasing effects on the carrying amount of EUR 0.2 billion and EUR 0.3 billion respectively.

For further information on the corporate transactions, please refer to the section "[Group organization](#)."

Other liabilities remained at the level of December 31, 2020 of EUR 8.3 billion. Other liabilities were reduced by EUR 0.1 billion, mainly in connection with lower liabilities from early retirement arrangements for civil servants. By contrast, existing build-out obligations in connection with grants still to be received from funding projects for the broadband build-out in Germany increased other liabilities by EUR 0.1 billion. Income tax liabilities decreased by EUR 0.1 billion year-on-year, whereas contract liabilities increased by EUR 0.2 billion year-on-year.

Shareholders' equity increased from EUR 72.6 billion as of December 31, 2020 to EUR 81.5 billion. Profit of EUR 6.1 billion and other comprehensive income of EUR 6.7 billion increased shareholders' equity, as did the capital increase from share-based payment of EUR 0.5 billion. By contrast, shareholders' equity was reduced in connection with dividend payments for the 2020 financial year to Deutsche Telekom AG shareholders in the amount of EUR 2.8 billion and to other shareholders of subsidiaries in the amount of EUR 0.3 billion. The carrying amount of shareholders' equity also decreased by a net EUR 0.8 billion due to the acquisition of T-Mobile US shares by way of a capital increase against contribution in kind. As a result, Deutsche Telekom AG's stake in T-Mobile US increased by 3.6 percentage points to 46.8%. Taking into account a fair value of EUR 0.8 billion for the exercised stock options, which were recognized directly in equity as part of the consideration paid to SoftBank, the issued capital and reserves attributable to owners of the parent increased by a total of EUR 1.5 billion, while those attributable to non-controlling interests decreased by EUR 2.4 billion. As a result, the share of profit attributable to the owners of the parent increased, as did consequently earnings per share. Effects of changes in the composition of the Group – mainly due to the sale of Telekom Romania Communications in the Europe operating segment – of EUR 0.2 billion and transactions with owners of EUR 0.2 billion decreased the carrying amount.

For more information on the increase in the stake in T-Mobile US, please refer to the section "[Group organization](#)" and Note 19 "[Shareholders' equity](#)" in the notes to the consolidated financial statements.

Financial position of the Group and profitability

Finance management

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

Calculation of net debt

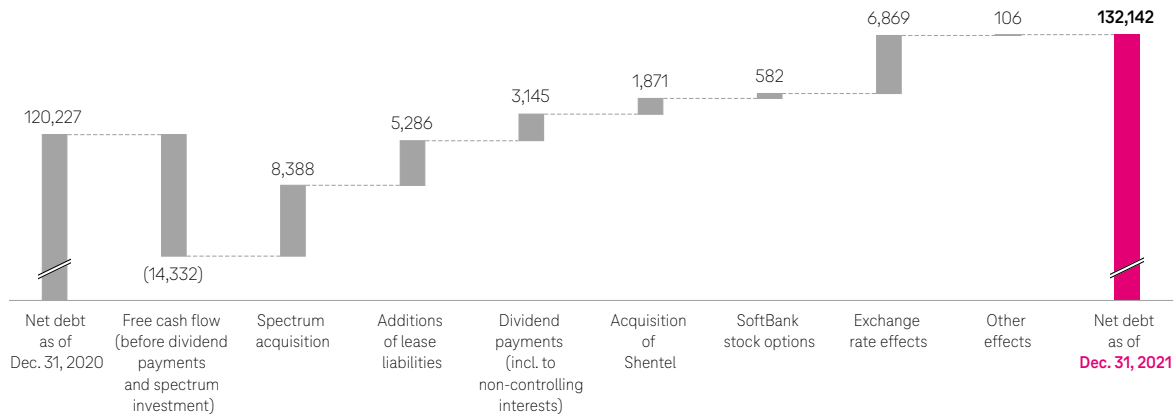
millions of €

	Dec. 31, 2021 ^a	Dec. 31, 2020	Change	Change %	Dec. 31, 2019
Bonds and other securitized liabilities	93,857	87,702	6,155	7.0	51,644
Liabilities to banks	4,003	5,257	(1,254)	(23.9)	6,516
Other financial liabilities	13,730	14,149	(419)	(3.0)	8,189
Lease liabilities	33,767	32,715	1,052	3.2	19,835
Financial liabilities and lease liabilities	145,357	139,823	5,534	4.0	86,184
Accrued interest	(1,012)	(1,035)	23	2.2	(748)
Other	(855)	(703)	(152)	(21.6)	(739)
Gross debt	143,490	138,085	5,405	3.9	84,697
Cash and cash equivalents	7,617	12,939	(5,322)	(41.1)	5,393
Derivative financial assets	2,762	4,038	(1,276)	(31.6)	2,333
Other financial assets	969	881	88	10.0	940
Net debt	132,142	120,227	11,915	9.9	76,031

^a Including the net debt of T-Mobile Netherlands included under liabilities directly associated with non-current assets and disposal groups held for sale as of December 31, 2021.

Changes in net debt

millions of €



Other effects of EUR 0.1 billion included a large number of smaller effects.

Other financing options

Off-balance-sheet financing instruments mainly relate to the sale of receivables by means of factoring. Total receivables sold as of December 31, 2021 amounted to EUR 3.3 billion (December 31, 2020: EUR 3.1 billion). This mainly relates to factoring agreements in the United States and Germany operating segments. The increase against the prior year resulted from normal fluctuations in the contractual sales volumes executed. The agreements are used in particular for active receivables management.

In the reporting year, we did not choose any financing options (2020: options chosen totaling EUR 0.2 billion) under which payments for trade payables from operating and investing activities became due at a later point by involving banks in the process and which upon payment are shown under net cash used in/from financing activities. As a result, we show these payables under financial liabilities in the statement of financial position.

The rating of Deutsche Telekom AG

	Standard & Poor's	Moody's	Fitch
Long-term rating / outlook			
Dec. 31, 2019	BBB+ / CreditWatch negative	Baa1 / negative	BBB+ / stable
Dec. 31, 2020	BBB / stable	Baa1 / negative	BBB+ / stable
Dec. 31, 2021	BBB / stable	Baa1 / stable	BBB+ / stable
Short-term rating	A-2	P-2	F2

Rating agency Standard & Poor's downgraded Deutsche Telekom AG's rating from BBB+ to BBB with a stable outlook on completion of the business combination of T-Mobile US and Sprint as of April 1, 2020. In June 2021 the rating agency Moody's upgraded the rating outlook for Deutsche Telekom AG. The Moody's rating is now Baa1 with a stable outlook. We are therefore still a solid investment-grade company with access to the international capital markets.

Financial flexibility

	2021	2020	2019
Relative debt^a			
Net debt	3.06x	2.78x	2.65x
EBITDA (adjusted for special factors)			
Equity ratio	28.9	27.4	27.1

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

To ensure financial flexibility, we primarily use the KPI "relative debt." This is a core component of our finance strategy and an important performance indicator for investors, analysts, and rating agencies. At 3.06x, we have deviated from the target range of 2.25x to 2.75x in the reporting year, as expected, on account of the business combination of T-Mobile US and Sprint. We expect to be back in the target range by the end of 2024.

Calculation of free cash flow AL

millions of €

	2021	2020	Change	Change %	2019
Net cash from operating activities	32,171	23,743	8,428	35.5	23,074
Interest payments for zero-coupon bonds	0	1,600	(1,600)	(100.0)	0
Termination of forward-payer swaps at T-Mobile US	0	2,158	(2,158)	(100.0)	0
Net cash from operating activities^a	32,171	27,501	4,670	17.0	23,074
Cash capex	(26,366)	(18,694)	(7,672)	(41.0)	(14,357)
Spectrum investment	8,388	1,714	6,674	n.a.	1,239
Cash capex (before spectrum investment)	(17,978)	(16,980)	(998)	(5.9)	(13,118)
Proceeds from the disposal of intangible assets (excluding goodwill) and property, plant and equipment	139	236	(97)	(41.1)	176
Free cash flow (before dividend payments and spectrum investment)^a	14,332	10,756	3,576	33.2	10,133
Principal portion of repayment of lease liabilities ^b	(5,521)	(4,468)	(1,053)	(23.6)	(3,120)
Free cash flow AL (before dividend payments and spectrum investment)^a	8,810	6,288	2,522	40.1	7,013

^a Before interest payments for zero-coupon bonds and before termination of forward-payer swaps at T-Mobile US (both in 2020).

^b Excluding finance leases at T-Mobile US.

Free cash flow AL (before dividend payments and spectrum investment) increased by EUR 2.5 billion year-on-year to EUR 8.8 billion. The following effects impacted on this development:

Net cash from operating activities increased by EUR 4.7 billion. The sustained strong performance of the operating segments, especially the United States, including Sprint, had an increasing effect on net cash from operating activities. A net increase of EUR 0.7 billion overall in interest payments, mainly as a result of the financial liabilities assumed and the restructuring carried out in connection with the acquisition of Sprint, and the related increase in financing, decreased the carrying amount. Income tax payments increased by EUR 0.2 billion compared with the prior year. Factoring agreements resulted in negative effects of EUR 0.1 billion on net cash from operating activities in the reporting year. In the prior year, factoring agreements had had negative effects of EUR 0.8 billion, mainly as a result of the contractual termination of a revolving factoring agreement in the Germany operating segment.

Cash capex (before spectrum investment) increased by EUR 1.0 billion to EUR 18.0 billion, largely on account of the inclusion of Sprint and the ongoing 5G network build-out in the United States. In the Germany operating segment, cash capex decreased by EUR 0.1 billion. Capital expenditure in the Germany operating segment totaled around EUR 4.1 billion in 2021, in particular for the build-out of the 5G and fiber-optic networks. In the Europe operating segment, our investments were on a par with the prior-year level at EUR 1.8 billion. Here, we also continue to invest in the provision of broadband and fiber-optic technology and in 5G as part of our integrated network strategy.

The increase in repayments of lease liabilities was due in particular to payments for leases in the United States operating segment. The increase resulted from the inclusion of Sprint for the full year for the first time in the reporting year and from advance payments made by T-Mobile US for the lease of cell sites.

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

Profitability

millions of €

	2021	2020	2019
ROCE %	4.1	4.6	5.1
Profit (loss) from operations (EBIT)	13,057	12,804	9,457
Share of profit (loss) of associates and joint ventures accounted for using the equity method	(102)	(12)	87
Net operating profit (NOP)	12,956	12,792	9,544
Tax (imputed tax rate 2021: 27.8 %; 2020: 27.8 %; 2019: 27.8 %)	(3,602)	(3,556)	(2,653)
Net operating profit after taxes (NOPAT)	9,354	9,236	6,891
Cash and cash equivalents	7,617	12,939	5,393
Intangible assets	132,647	118,066	68,202
Property, plant and equipment	61,770	60,975	49,548
Right-of-use assets ^a	30,777	30,302	17,998
Non-current assets and disposal groups held for sale and liabilities ^b	3,491	664	68
Investments accounted for using the equity method	938	543	489
Operating working capital	7,702	6,458	2,983
Other provisions	(9,463)	(9,033)	(6,663)
Net operating assets (NOA)	235,479	220,914	138,018
Average net operating assets (Ø NOA)	229,035	201,545	135,618

^a The calculation method used to determine this financial performance indicator was adjusted in 2019 as a result of the new IFRS 16 accounting standard.

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

ROCE decreased by 0.5 percentage points in the reporting period to 4.1%. This was due to stronger percentage growth in average operating assets (NOA) than in net operating profit after taxes (NOPAT). The increase in NOA is primarily due to the acquisition of additional spectrum licenses by T-Mobile US and the associated increase in intangible assets. In addition, the development of NOA reflects our consistently high investment volume. The year-on-year development of NOPAT is primarily impacted by higher expenses classified as special factors, mainly in the United States operating segment. These arose in connection with higher integration and restructuring costs to realize cost efficiencies as a result of the business combination of T-Mobile US and Sprint and the reduction in the useful life of leased network technology for cell sites. In the prior year, NOPAT had been positively affected by the partial reversal of impairment losses on spectrum licenses, which had increased the carrying amount.

Overall, NOPAT amounted to EUR 9.4 billion in 2021, up from EUR 9.2 billion in the prior year. The average amount of net operating assets (NOA) increased to EUR 229.0 billion in 2021 from EUR 201.5 billion in the prior year.

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

Development of business in the operating segments

For further information on the development of business in the operating segments, please refer to the IR back-up on our [Investor Relations website](#).

Effective January 1, 2021, Deutsche Telekom reassigned the responsibility for business and profit and loss for Deutsche Telekom IoT GmbH from the Systems Solutions operating segment to the business customer unit in the Germany operating segment. Prior-year comparatives in both of the segments (development of operations, customer development, headcount development, and order entry) were adjusted retrospectively.

For further information on the reassignment of the IoT business, please refer to the sections "Group organization" and "Segment reporting" in the notes to the consolidated financial statements.

Germany

Customer development

thousands

	Dec. 31, 2021	Dec. 31, 2020	Change	Change %	Dec. 31, 2019
Mobile customers	53,211	48,213	4,998	10.4	46,189
Contract customers ^{a, b}	23,129	25,975	(2,846)	(11.0)	25,291
Prepaid customers ^{a, b}	30,081	22,239	7,842	35.3	20,898
Fixed-network lines	17,525	17,590	(65)	(0.4)	17,824
Retail broadband lines	14,478	14,118	360	2.5	13,730
Of which: optical fiber	10,379	9,515	864	9.1	8,529
Television (IPTV, satellite)	4,001	3,864	137	3.5	3,618
Unbundled local loop lines (ULLs)	3,622	4,101	(479)	(11.7)	4,638
Wholesale broadband lines	7,948	7,733	215	2.8	7,372
Of which: optical fiber	6,778	6,433	345	5.4	5,863

^a The realignment of the B2B telecommunications business in 2020 resulted in the deactivation of around 310 thousand SIM cards in the business customer area as of January 1, 2021, which are now treated as internal cards. Prior-year figures have been adjusted with retroactive effect.

^b From January 1, 2021, around 3.6 million SIM cards of a service provider that were previously reported under contract customers are now reported under prepaid customers. Prior-year comparatives were not adjusted.

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 the best customer experience with award-winning network quality – in the fixed network as in mobile communications – and with a broad product portfolio and excellent service. We want to offer our customers a seamless and technology-neutral telecommunications experience. Hence, alongside fixed-network and mobile communications products, we also market convergence products. At the end of May 2021, we launched MagentaEINS Unlimited with unlimited data across Germany. Our MagentaEINS family of FMC products remains very popular among customers, with some 5.3 million customers having opted for MagentaEINS by the end of 2021. We added 217 thousand customers compared to the end of the prior year.

Demand remained high for our fiber-optic-based lines. The total number of these customer lines increased to around 17.2 million overall by the end of December 2021, which means a further 1.2 million customers in Germany received a fiber-optic-based line from us in the course of 2021. With the progress made in fiber-optic rollout, we also successfully drove forward the marketing of higher bandwidths.

Mobile communications

We won a total of some 5.0 million mobile customers in 2021. Of these, 666 thousand were high-value contract customers under our Telekom and congstar brands. Steady demand for mobile rate plans with included data volumes alongside our multiple award-winning network quality continues to drive this trend. Since January 1, 2021, the customers of a service provider previously reported under contract customers have been reported under prepaid customers. Allowing for this change in disclosure, we have added around 4.2 million prepaid customers since the start of the year, largely on the back of our automotive offerings targeted specifically at business customers.

The StreamOn option, with which customers can stream certain music, gaming, or video services without reducing their included data allowance, remains very popular. At the end of 2021, 4.6 million customers were using this option, up by 16.0 % year-on-year.

Fixed network

The fixed-network broadband market hosts a large number of players with differing infrastructures – from national through to regional providers. In order to consolidate our position on the market as Germany's leading telecommunications provider, we continue to add new offerings to our portfolio.

The number of broadband lines increased to around 14.5 million in 2021. Demand for our retail fiber-optic-based lines was the biggest driver here, accounting for 864 thousand lines. We recorded an increase of 137 thousand in the number of TV customers compared with year-end 2020. In traditional fixed-network business, the number of lines declined slightly by 65 thousand. This marked a considerable reduction in line losses compared with the prior-year period. As expected, the number of fixed-network lines was 17.5 million lines.

Wholesale

As of December 31, 2021, fiber-optic-based lines accounted for 58.6 % of all lines – 4.2 percentage points more than at the end of 2020. This growth is a result of demand for quota-based agreements under the “contingent model,” and subsequently for the new commitment agreements which were successfully introduced on April 1, 2021. Rising demand among consumers for higher-bandwidth lines also contributed to the increase. The number of unbundled local loop lines decreased by 479 thousand compared with the end of the prior year, partly as a result of the shift to higher-value fiber-optic-based lines and partly from consumers switching to other cable providers. In addition, our wholesale customers are migrating their retail customers to their own fiber-optic-based lines. The total number of wholesale lines at the end of 2021 was around 11.6 million.

Development of operations

millions of €					
	2021	2020	Change	Change %	2019
Total revenue	24,164	23,790	374	1.6	23,750
Consumers	12,221	11,740	481	4.1	11,618
Business Customers	8,878	8,857	21	0.2	8,957
Wholesale	2,767	2,983	(216)	(7.2)	2,944
Other	298	210	88	41.9	230
Service revenue^a	21,298	20,993	305	1.5	n.a.
Profit (loss) from operations (EBIT)	4,951	3,970	981	24.7	4,238
EBIT margin %	20.5	16.7			17.8
Depreciation, amortization and impairment losses	(4,016)	(4,510)	494	11.0	(4,368)
EBITDA	8,968	8,480	488	5.8	8,606
Special factors affecting EBITDA	(588)	(752)	164	21.8	(458)
EBITDA (adjusted for special factors)	9,556	9,232	324	3.5	9,064
EBITDA AL	8,932	8,435	497	5.9	8,568
Special factors affecting EBITDA AL	(588)	(752)	164	21.8	(458)
EBITDA AL (adjusted for special factors)	9,520	9,188	332	3.6	9,026
EBITDA AL margin (adjusted for special factors) %	39.4	38.6			38.0
Cash capex	(4,116)	(4,191)	75	1.8	(4,447)

^a The definition of “service revenue” was not applied consistently Group-wide for the years prior to 2020.

Total revenue, service revenue

In 2021 we generated total revenue of EUR 24.2 billion, which was up by 1.6 % year-on-year. The growth in service revenues of 1.5 % was attributable to increased revenue in the fixed-network core business, largely broadband-driven, and to higher mobile service revenues. Overall, revenue was affected by the effects of the coronavirus pandemic, such as temporary travel restrictions, lockdowns, and the deteriorated economic situation. This had a negative effect on roaming and visitor revenues. It also resulted in delays or postponements to current orders in B2B telecommunications business.

Revenue from **Consumers** increased by 4.1 % compared with the prior year. Volume-driven declines in revenue from voice components continued to impact on traditional fixed-network business. By contrast, revenue from broadband business grew by 6.9 %, due in part to the positive effects from increased customer appreciation for stable data lines. Fixed-network terminal equipment business posted growth of 9.2 % on the back of strong demand on the customer side for terminal equipment lease models. Mobile business increased by 4.7 %, primarily due to higher revenues from mobile terminal equipment business and a positive trend in the number of customers opting for our secondary brand, congstar.

Revenue from **Business Customers** was up slightly by 0.2 % year-on-year. IT revenue grew by 5.4 % against the prior year, mainly due to concerted efforts to drive forward digitalization in the SME sector. Overall, mobile revenue was up 2.1 % year-on-year, partly on the back of positive revenues from terminal equipment business and sustained customer additions. In organic terms, i.e., mainly assuming constant exchange rates and adjusted for the reassignment of Deutsche Telekom IT (DT IT) Russia, DT IT Slovakia, and DT IT Hungary to the Group Headquarters & Group Services segment, revenue increased by 2.0 % year-on-year.

Wholesale revenue was down at the end of 2021 by 7.2 % year-on-year. The positive trend in the number of fiber-optic-based lines continued, with an increase of 5.4 % compared with the prior year. However, this was not enough to offset the decrease in revenues of 11.7 % from declining volumes of unbundled local loop lines. In addition, the positive contribution in the prior-year period from the transition to the IFRS 16 Leases accounting standard, which reduced the customer retention period in connection with the lease of unbundled local loop lines, no longer applied in the reporting period. Since April 1, 2021, the transition to the new commitment agreements to replace the former quota-based agreements has led to sharper declines in revenue in the reporting year. This is primarily due to the fact that under the new commitment model the annual payments are initially lower compared to the up-front payments that had been made under the quota-based agreements under the contingent model. The annual commitment payments will rise over the course of subsequent years. Voice revenue was down against the prior year, which had contained higher, largely coronavirus-induced, revenues in this area.

For further information on the entry into force of the commitment agreements, please refer to the section [“The economic environment – Regulation.”](#)

Adjusted EBITDA AL, EBITDA AL

EBITDA AL adjusted for special factors increased by EUR 332 million or 3.6 % year-on-year to EUR 9.5 billion. Our adjusted EBITDA AL margin increased to 39.4 %, up from 38.6 % in the prior year. The main reasons for this increase are a sound operational development, driven by high-value revenue growth, and enhanced cost efficiency. Lower personnel costs resulting, among other factors, from the smaller headcount and the ongoing implementation of efficiency enhancement and digitalization measures reduced costs.

In contrast to the effects described under EBITDA AL, lower expenses recognized as special factors for socially responsible instruments in connection with the staff restructuring, in particular the dedicated retirement program, had an offsetting effect. EBITDA AL increased in 2021 by 5.9 % year-on-year to EUR 8.9 billion.

EBIT

Profit from operations was up 24.7 % year-on-year to EUR 5.0 billion, driven by the positive EBITDA AL trend together with lower depreciation, amortization, and impairment losses year-on-year, mainly on account of substantially lower amortization of intangible assets due to the expiry of the amortization of UMTS licenses.

Cash capex

Cash capex decreased by EUR 75 million or 1.8 % compared with the prior year. Capital expenditure totaled around EUR 4.1 billion in 2021, with much of this figure going towards the build-out of our 5G and fiber-optic networks. The number of households passed by our fiber-optic network increased to around 3.4 million by the end of 2021. In mobile communications, our customers benefit from greater LTE network coverage. As of December 31, 2021, we covered 99 % of households in Germany with LTE. Over 90 % of German households can already use 5G.

United States

Customer development

thousands					
	Dec. 31, 2021	Dec. 31, 2020	Change	Change %	Dec. 31, 2019
Customers	108,719	102,064	6,655	6.5	67,895
Postpaid customers	87,663	81,350	6,313	7.8	47,034
Postpaid phone customers ^{a, b}	70,262	66,618	3,644	5.5	40,346
Other postpaid customers ^{a, b}	17,401	14,732	2,669	18.1	6,689
Prepaid customers ^{a, c}	21,056	20,714	342	1.7	20,860

Adjustments of the customer base

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

^a Includes customers acquired in connection with the Sprint Merger and certain customer base adjustments on April 1, 2020.

^b In the first quarter of 2021, we acquired 11,000 postpaid phone customers and 1,000 postpaid other customers through our acquisition of an affiliate. In the third quarter of 2021, we acquired 716,000 postpaid phone customers and 90,000 postpaid other customers through the acquisition of wireless assets from Shentel.

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

Customers

At December 31, 2021, the United States operating segment (T-Mobile US) had 108.7 million customers, compared to 102.1 million customers at December 31, 2020. Excluding the customers that we acquired through acquisitions during the year, net customer additions were 5.8 million in 2021, compared to the same number of net customer additions in 2020, due to the factors described below.

Postpaid net customer additions were 5.5 million in 2021 and exceeded the high end of the company's annual guidance range. Compared to the prior year postpaid net customer additions were essentially flat and primarily impacted by higher postpaid phone net customer additions, primarily due to increased retail store traffic, compared to lower retail traffic in the prior period due to closures arising from the coronavirus pandemic, partially offset by higher churn. This increase was offset by lower postpaid other net customer additions, primarily due to elevated gross additions in the prior year related to the public and educational sector resulting from the coronavirus pandemic and higher disconnects from an increased customer base, partially offset by growth in high-speed internet. High-speed internet net customer additions were 546 thousand and 87 thousand for the years ended December 31, 2021 and 2020, respectively.

Prepaid net customer additions were 342 thousand in 2021, compared to 331 thousand prepaid net customer additions in 2020. The increase was primarily due to lower churn.

Development of operations

millions of €					
	2021	2020	Change	Change %	2019
Total revenue	68,359	61,208	7,151	11.7	40,420
Service revenue^a	48,929	44,271	4,658	10.5	n.a.
Profit (loss) from operations (EBIT)	7,217	9,187	(1,970)	(21.4)	5,488
EBIT margin %	10.6	15.0			13.6
Depreciation, amortization and impairment losses	(18,338)	(15,665)	(2,673)	(17.1)	(7,777)
EBITDA	25,555	24,852	703	2.8	13,265
Special factors affecting EBITDA	(1,836)	(270)	(1,566)	n.a.	(544)
EBITDA (adjusted for special factors)	27,392	25,122	2,270	9.0	13,809
EBITDA AL	20,060	20,628	(568)	(2.8)	10,590
Special factors affecting EBITDA AL	(2,637)	(370)	(2,267)	n.a.	(544)
EBITDA AL (adjusted for special factors)	22,697	20,997	1,700	8.1	11,134
Core EBITDA AL (adjusted for special factors) ^b	19,912	17,366	2,546	14.7	n.a.
EBITDA AL margin (adjusted for special factors) %	33.2	34.3			27.5
Cash capex	(18,594)	(10,394)	(8,200)	(78.9)	(6,369)

^a The definition of "service revenue" was not applied consistently Group-wide for the years prior to 2020.

^b Adjusted core EBITDA AL is distinguished by excluding revenue from terminal equipment leases from adjusted EBITDA AL, thereby presenting operational development undistorted by the withdrawal from the terminal equipment lease business.

Total revenue, service revenue

Total revenue for the United States operating segment of EUR 68.4 billion in 2021 increased by 11.7 %, compared to EUR 61.2 billion in 2020. In U.S. dollars, T-Mobile US' total revenues increased by 15.2 % year-over-year primarily due to increased service revenues and equipment revenues. The components of these changes are described below.

Service revenues increased in 2021 by 10.5 % to EUR 48.9 billion primarily due to higher postpaid revenues primarily from higher average postpaid accounts, including the impact of accounts acquired in the Sprint Merger, higher postpaid ARPA (Average Revenue per Account) and higher wholesale revenues primarily from our Master Network Service Agreement with DISH, which went into effect on July 1, 2020, and the success of our other MVNO relationships. In addition, service revenues increased due to higher prepaid revenues primarily from higher prepaid ARPU (Average Revenue per User) and higher average prepaid customers. Furthermore, service revenues increased due to higher other service revenues primarily from higher Lifeline revenues, primarily associated with operations acquired in the Sprint Merger and the inclusion of wireline operations acquired in the Sprint Merger.

Equipment revenues increased in 2021 primarily due to an increase in device sales revenue (excluding purchased leased devices) primarily due to an increase in the number of devices sold due to a larger customer base as a result of the Merger, switching activity returning to more normalized levels compared to the muted conditions from the coronavirus pandemic in the prior year a higher upgrade rate and the planned shift in device financing from leasing to EIP. Device sales revenue (excluding purchased leased devices) also increased due to higher average revenue per device sold driven by an increased mix of phone versus other devices, partially offset by an increase in promotional activities. In addition, equipment revenues increased due to an increase in sales of accessories, primarily from increased retail store traffic, compared to lower retail traffic in the prior period due to closures arising from the coronavirus pandemic and a larger customer base as a result of the Sprint Merger. Furthermore, equipment revenues increased due to an increase in liquidation revenues, primarily due to a higher volume of returned devices and an increase in the high-end device mix. These increases were partially offset by a decrease in lease revenues due to a lower number of customer devices under lease as a result of the planned shift in device financing from leasing to EIP.

Adjusted EBITDA AL, EBITDA AL

In euros, adjusted EBITDA AL increased by 8.1% to EUR 22.7 billion in 2021, compared to EUR 21.0 billion in 2019. The adjusted EBITDA AL margin decreased to 33.2% in 2021, compared to 34.3% in 2020. In U.S. dollars, adjusted EBITDA AL increased by 11.8% during the same period. Adjusted EBITDA AL increased primarily due to higher service revenues and equipment revenues (excluding lease revenues) as discussed above. These increases were partially offset by higher device cost of equipment sales (excluding purchased leased devices) primarily from an increase in the number of devices sold due to a larger customer base as a result of the Sprint Merger, switching activity returning to more normalized levels relative to the muted conditions from the coronavirus pandemic in the prior year, a higher upgrade rate and the planned shift in device financing from leasing to EIP. Device cost of equipment sales (excluding purchased leased devices) also increased due to higher average costs per device sold due to an increased mix of phone versus other devices. In addition, there were higher expenses associated with cost of accessories, due to increased retail store traffic, compared to lower retail traffic in the prior period due to closures arising from the coronavirus pandemic and a larger customer base as result of the Sprint Merger. Furthermore, there were higher expenses associated with leases and utilities primarily due to the Sprint Merger and the continued build-out of our nationwide 5G network, including a new tower master lease agreement in 2020 and higher employee-related and benefit-related costs primarily due to increased average headcount as a result of the Sprint Merger. In addition, there were higher costs associated with advertising relative to the muted coronavirus pandemic-driven conditions in the prior period, external labor and professional services primarily from the Sprint Merger and higher commissions primarily due to compensation structure changes and higher customer addition volumes. These increases in costs were partially offset by higher realized Sprint Merger synergies, including a decrease in expenses associated with backhaul agreements due to the termination of certain agreements acquired in the Sprint Merger, and lower bad debt expense due to the release of estimated bad debt reserves established in the prior year associated with macro-economic impacts of the coronavirus pandemic.

Adjusted core EBITDA AL increased by 14.7% to EUR 19.9 billion in 2021, compared to EUR 17.4 billion in 2020. In U.S. dollars, adjusted core EBITDA AL increased by 18.6% during the same period. The change was primarily due to the fluctuation in adjusted EBITDA AL, discussed above, excluding the change in lease revenues. In U.S. dollars, lease revenues decreased as a result of the planned shift in device financing from leasing to EIP by 20.6% in 2021.

EBITDA AL in 2021, included special factors of EUR -2.6 billion compared to EUR -0.4 billion in 2020. The change in special factors was primarily due to special factors recognized in 2020 including the EUR 1.6 billion spectrum impairment reversal and transaction fee received from SoftBank, partially offset by supplemental employee payroll, third-party commissions and cleaning-related expenses associated with the coronavirus pandemic and a postpaid billing system disposal. In addition, special factors increased due to higher Merger-related costs during 2021. Special factors include Merger-related costs associated with the Merger and acquisitions of affiliates comprised of transaction costs, including legal and professional services related to the completion of transactions; restructuring costs, including severance, store rationalization and network decommissioning; and integration costs to achieve efficiencies in network, retail, information technology and back office operations, migrate customers to the T-Mobile US' network and the impact of legal matters assumed as part of the Sprint Merger. Overall, EBITDA AL decreased by 2.8% to EUR 20.1 billion in 2021, compared to EUR 20.6 billion in 2020, primarily due to the factors described above, including special factors.

EBIT

EBIT decreased by 21.4% to EUR 7.2 billion in 2021, compared to EUR 9.2 billion in 2020. In U.S. dollars, EBIT decreased by 19.0% during the same period primarily due to higher depreciation and amortization and lower EBITDA AL. In U.S. dollars, depreciation and amortization increased by 20.7% primarily due to higher depreciation expense (excluding leased devices) from the continued build-out of our nationwide 5G network, accelerated depreciation expense on certain assets due to our Sprint Merger integration, and higher amortization from intangible assets, primarily due to a full year of amortization of intangible assets acquired in the Sprint Merger.

Cash capex

Cash capex increased to EUR 18.7 billion in 2021, compared to EUR 10.4 billion in 2020. In U.S. dollars, cash capex increased by 84.2% primarily from an increase in spectrum purchases, primarily due to USD 8.9 billion paid for spectrum licenses won at the conclusion of the C-band auction in March 2021, network integration related to the Sprint Merger and the continued build-out of our nationwide 5G network.

Europe

Customer development

thousands		Dec. 31, 2021	Dec. 31, 2020	Change	Change %	Dec. 31, 2019
Europe, total^a	Mobile customers	45,816	45,619	197	0.4	46,165
	Contract customers	26,575	26,844	(269)	(1.0)	26,245
	Prepaid customers	19,241	18,775	466	2.5	19,920
	Fixed-network lines ^b	7,802	9,084	(1,282)	(14.1)	9,105
	Of which: IP-based ^b	7,767	8,439	(672)	(8.0)	8,311
	Broadband customers ^{b, c}	6,381	6,943	(562)	(8.1)	6,672
	Television (IPTV, satellite, cable) ^{b, d}	4,019	5,046	(1,027)	(20.4)	4,945
	Unbundled local loop lines (ULLs)/ wholesale PSTN	1,932	2,246	(314)	(14.0)	2,294
	Wholesale broadband lines ^d	865	684	181	26.5	533
Greece	Mobile customers	7,045	6,914	131	1.9	7,365
	Fixed-network lines	2,624	2,589	35	1.4	2,638
	Broadband customers	2,306	2,185	121	5.5	2,033
Romania^a	Mobile customers	3,691	4,683	(992)	(21.2)	4,916
	Fixed-network lines	0	1,444	(1,444)	(100.0)	1,560
	Broadband customers	0	912	(912)	(100.0)	1,014
Hungary	Mobile customers	5,634	5,427	207	3.8	5,369
	Fixed-network lines	1,821	1,759	62	3.5	1,703
	Broadband customers ^c	1,417	1,321	96	7.3	1,231
Poland	Mobile customers	11,542	11,198	344	3.1	10,954
	Fixed-network lines ^b	29	31	(2)	(6.5)	18
	Broadband customers ^b	77	32	45	n.a.	18
Czech Republic	Mobile customers	6,297	6,178	119	1.9	6,265
	Fixed-network lines	645	606	39	6.4	533
	Broadband customers	391	368	23	6.2	320
Croatia	Mobile customers	2,276	2,253	23	1.0	2,274
	Fixed-network lines	875	885	(10)	(1.1)	908
	Broadband customers	633	625	8	1.3	621
Slovakia	Mobile customers	2,502	2,441	61	2.5	2,428
	Fixed-network lines	880	865	15	1.7	860
	Broadband customers	633	607	26	4.3	576
Austria	Mobile customers	5,258	5,074	184	3.6	5,019
	Fixed-network lines	593	569	24	4.2	549
	Broadband customers	656	635	21	3.3	612
Other^e	Mobile customers	1,572	1,451	121	8.3	1,576
	Fixed-network lines	336	335	1	0.3	335
	Broadband customers	268	259	9	3.5	249

^a The number of lines and customers in Romania decreased in the fourth quarter of 2021 due to the sale of Telekom Romania Communications, which operates the Romanian fixed-network business, effective September 30, 2021.

^b The comparatives for fixed-network lines, broadband and TV customers in Poland were adjusted retrospectively as part of the standardization of the underlying customer definition.

^c The prior-year comparatives for broadband customers in Hungary were adjusted retrospectively as part of the standardization of the underlying customer definition.

^d The comparatives for TV customers in Croatia were adjusted retrospectively as part of the standardization of the underlying customer definition.

^e "Other": national companies in North Macedonia, Montenegro, and the lines of the GTS Central Europe group in Romania.

Total

Excluding the effect from the sale of Telekom Romania Communications, the number of customers in our Europe operating segment grew once again year-on-year, exceeding our expectations to some extent. For example, we recorded fixed-network net customer additions on an organic basis. Our MagentaOne convergent product portfolio, in particular, generated growth compared with year-end 2020 of 15.5 % in FMC customers thanks to ongoing demand. We are working flat out to build out our fixed-network infrastructure with state-of-the-art optical fiber. The number of broadband customers likewise increased by 5.8 % in organic terms. On the same basis, the mobile business also recorded an increase of 2.8 % in customer numbers, with increases in both the number of high-value contract customers and the number of prepaid customers. Our build-out of the 5G network is making good progress: most of our national companies have already launched the commercial sale of 5G products and services.

Mobile communications

Our Europe operating segment had a total of 45.8 million mobile customers as of December 31, 2021, marking a stable trend compared with the end of 2020. The number of high-value contract customers decreased slightly by 1.0 %, largely as a result of the effect from the sale of Telekom Romania Communications on September 30, 2021: Romanian FMC customers, i.e., customers who use both a fixed-network line and a mobile communications service were assigned to the fixed-network business in line with our steering definition. As a result, the corresponding SIM cards were no longer included as of the end of 2021. Without this effect, the number of contract customers increased by 3.0 %. By contrast, the contract customer base grew at our other national companies, especially in Poland, Hungary, and the Czech Republic. Overall, contract customers accounted for 58.0 % of the total customer base. In parallel with pure customer development, we have successfully pursued the more-for-more principle in our product portfolio, so as to sustainably increase value per customer. In addition, thanks to our integrated network strategy our customers benefited from greater coverage with fast mobile broadband. As of December 31, 2021, we covered 98.2 % of the population in the countries of our operating segment with LTE, reaching around 109 million people in total. The footprint countries of our operating segment are also making excellent headway with 5G. As of the end of 2021, our national companies covered 28.9 % of the population (in particular in Greece, Croatia, and Austria) with 5G.

The prepaid customer base recorded growth of 2.5 % compared with the end of 2020. Growth in countries including Poland and Austria more than offset the declines reported especially in Romania. In addition, we offer our prepaid customers high-value contract plans with the resulting number of contract conversions also contributing positively to contract customer business.

Fixed network

The broadband business declined by 8.1 % compared with the end of the prior year to total 6.4 million customers. Excluding the effect from the sale of the Romanian fixed-network business, the number of customers grew by 5.8 %. This increase was mainly driven by the national companies in Greece, Hungary, and Poland. By continuing to invest in innovative fiber-optic technologies, we are systematically building out our fixed-network infrastructure. At the end of the fourth quarter of 2021, a total of around 7.0 million households (coverage of 27.9 %) were provided with the option by our national companies to subscribe to a direct connection to our high-speed fiber-optic network with speeds reaching up to 1 Gbit/s. The number of IP-based lines increased to account for 99.6 % of all fixed-network lines in the same period. The number of fixed-network lines in our Europe operating segment declined by 14.1 % overall to 7.8 million. Excluding the effect from the sale of the Romanian fixed-network business, the number of lines grew by 2.1 % year-on-year.

The TV and entertainment business had a total of 4.0 million customers as of December 31, 2021, down by 20.4 % compared with the end of the prior year. Excluding the effect from the sale of the Romanian fixed-network business, the customer base grew by 5.5 %. With both telecommunications providers and OTT players offering TV services, the TV market is already saturated in many countries of our segment.

FMC – fixed-mobile convergence

Our portfolio of convergent products, MagentaOne, was highly popular with consumers across all of our national companies. As of December 31, 2021, we had 6.3 million FMC customers; this corresponds to growth of 1.0 % compared with the end of the prior year. Excluding the effect from the sale of the Romanian fixed-network business, the customer base grew by 15.5 %. Our national companies, in particular in Greece, Hungary, Poland, the Czech Republic, and Austria, contributed to this growth. We have also seen accelerated growth in the marketing of our MagentaOne Business product to business customers.

Development of operations

millions of €					
	2021	2020	Change	Change %	2019
Total revenue	11,384	11,335	49	0.4	11,587
Greece	3,078	2,940	138	4.7	2,943
Romania	709	951	(242)	(25.4)	980
Hungary	1,769	1,734	35	2.0	1,872
Poland	1,427	1,453	(26)	(1.8)	1,486
Czech Republic	1,146	1,072	74	6.9	1,088
Croatia	908	917	(9)	(1.0)	960
Slovakia	790	773	17	2.2	785
Austria	1,351	1,302	49	3.8	1,276
Other ^a	301	283	18	6.4	298
Service revenue^b	9,638	9,630	8	0.1	n.a.
Profit (loss) from operations (EBIT)	1,814	1,278	536	41.9	1,109
EBIT margin %	15.9	11.3			9.6
Depreciation, amortization and impairment losses	(2,576)	(2,875)	299	10.4	(3,114)
EBITDA	4,390	4,153	237	5.7	4,223
Special factors affecting EBITDA	11	(188)	199	n.a.	(141)
EBITDA (adjusted for special factors)	4,380	4,341	39	0.9	4,364
EBITDA AL	4,018	3,722	296	8.0	3,769
Special factors affecting EBITDA AL	11	(188)	199	n.a.	(141)
EBITDA AL (adjusted for special factors)	4,007	3,910	97	2.5	3,910
Greece	1,265	1,199	66	5.5	1,212
Romania	147	153	(6)	(3.9)	141
Hungary	536	520	16	3.1	551
Poland	385	378	7	1.9	383
Czech Republic	471	430	41	9.5	448
Croatia	355	337	18	5.3	360
Slovakia	327	335	(8)	(2.4)	327
Austria ^c	487	496	(9)	(1.8)	467
Other ^a	34	63	(29)	(46.0)	20
EBITDA AL margin (adjusted for special factors) %	35.2	34.5			33.7
Cash capex	(1,905)	(2,216)	311	14.0	(1,816)

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 in North Macedonia, Montenegro, and the GTS Central Europe group in Romania, as well as the Europe Headquarters.

^b The definition of "service revenue" was not applied consistently Group-wide for the years prior to 2020.

^c As of January 1, 2021, the Austrian cell tower business was transferred from the Europe operating segment to the Group Development operating segment. Prior-year comparatives were not adjusted.

Total revenue, service revenue

Total revenue generated in our Europe operating segment by the end of the reporting year was EUR 11.4 billion, a year-on-year increase of 0.4 %. In organic terms – i.e., adjusted for the sale of Telekom Romania Communications, which operates the Romanian fixed-network business, on September 30, 2021, and assuming constant exchange rate effects – revenue increased by 2.4 % year-on-year. Service revenue remained stable year-on-year, growing by 2.0 % in organic terms. Regulatory intervention, in addition to the consequences of the coronavirus pandemic, continued to have a negative effect on the organic development of revenue in the reporting year.

Organic revenue growth was mainly driven by the strong performance of the mobile business, especially the increase in mobile service revenues with higher margins, slight increases in roaming and visitor revenues, and higher revenues from terminal equipment sales. Fixed-network service revenues, by contrast, developed slightly better. The strong performance of the broadband business in particular helped to offset the declines in voice telephony revenues, which were in line with expectations. Systems solutions business declined overall.

Looking at the development by country, our national companies in Greece, Hungary, Austria, and the Czech Republic recorded the best organic development of revenue.

Revenue from **Consumers** increased in organic terms by 2.5 % year-on-year, due mainly to higher mobile revenue: both service revenues and sales of mobile terminal equipment increased. In the fixed network, revenue from broadband/TV business increased thanks to our innovative TV and entertainment offerings as well as the continuous rollout of fiber-optic technology. This more than offset the decline in revenue from voice telephony. In addition, the higher number of FMC customers had a positive impact on revenue.

Revenue from **Business Customers** remained stable year-on-year in organic terms. The stable upward trend in mobile business over the course of the year offset the slight decline in demand in the fixed-network business. The number of SIM cards increased by 3 % year-on-year on the back of the development of business in Poland, Hungary, and Austria. This was a consequence of the widespread utilization of mobile working in our European companies. The strong IT revenues of the previous year could not be replicated in 2021 due to the sale of the Romanian fixed-network business and the new licensing rules in Croatia. Nevertheless, we reported sustained growth in demand and revenues in our productivity, cloud computing, smart cities, and security solution portfolios.

Adjusted EBITDA AL, EBITDA AL

Our Europe operating segment generated adjusted EBITDA AL of EUR 4.0 billion in the reporting year, up 2.5 % year-on-year. In organic terms, i.e., adjusted for the sale of the Romanian fixed-network business and the transfer of the Austrian cell tower business to the Group Development operating segment, and assuming constant exchange rates, adjusted EBITDA AL increased by 5.4 %, thus continuing to make a positive contribution to earnings. In addition to the positive revenue effects, savings in indirect costs, including due to lower personnel costs, contributed to this development.

Looking at the development by country, the increase in adjusted organic EBITDA AL was largely attributable to the positive trend at virtually all of our national companies, but in particular in Greece, Austria, Romania, Croatia, and Hungary.

EBITDA AL increased by 8.0 % year-on-year to EUR 4.0 billion. Special factors improved from EUR -188 million to EUR 11 million. The reason for this change was the reversal of other provisions for personnel costs recognized by OTE in 2010 and 2011 in connection with an additional payment of EUR 134 million to the Greek social insurance fund IKA-ETAM as a result of corresponding proceedings concluded in September 2021. The sale of Telekom Romania Communications resulted in a loss on deconsolidation of EUR 29 million, which was recognized as a special factor. In organic terms, EBITDA AL grew by 11.1 %.

Development of operations in selected countries

Greece. In Greece, revenue increased by 4.7 % year-on-year to EUR 3.1 billion. The encouraging development in mobile business is mainly attributable to the addition of new contract customers, with associated increases in both terminal equipment sales and service revenues. As travel activity increasingly returns to more normal levels, there was also a positive trend in visitor revenues. The intensive fiber-optic and vectoring build-out, together with the resulting higher numbers of customers, had an increasingly positive impact on the fixed-network business. Fixed-network revenues increased in the reporting year, mainly driven by strong growth in the broadband business. The systems solutions business also contributed to revenue growth.

In 2021, adjusted EBITDA AL in Greece stood at EUR 1.3 billion, a significant increase of 5.5 % against the prior year. This is attributable to a revenue-related increase in the net margin. Savings in indirect costs had a positive effect.

Hungary. Revenue in Hungary totaled EUR 1.8 billion in the 2021 financial year, an increase of 2.0 % despite negative exchange rate effects. In organic terms, revenue was up 4.1 % against the prior-year level. The biggest driver of this increase was mobile communications business, mainly on account of higher service revenues. In addition, growth in the number of contract customers had positive effects on terminal equipment business. Fixed-network operations also increased slightly year-on-year, with rising TV and broadband service revenues, both driven once again by larger customer bases. Systems solutions business posted a slight decline in revenue. Our MagentaOne convergence products continued to perform well, with further customer additions and corresponding revenue.

Adjusted EBITDA AL stood at EUR 536 million, up 3.1 % year-on-year. In organic terms, adjusted EBITDA AL grew by 5.1 %. This growth is attributable in particular to higher revenues, which more than offset the rise in costs.

Poland. Our revenue in Poland decreased by 1.8 % in the reporting year to EUR 1.4 billion. This decline was due to negative exchange rate effects. In organic terms, revenue increased slightly by 0.9 %, with the mobile business posting the largest increase. Growth in the number of contract customers had a positive effect on terminal equipment business. Higher roaming and visitor revenues were also recorded. Systems solutions business grew markedly in 2021. The number of FTTH customers in the fixed-network business also increased significantly, creating the basis for further broadband growth. This is reflected in higher broadband and TV service revenues, and is also thanks to our successful partnership agreements on network infrastructure.

Adjusted EBITDA AL stood at EUR 385 million in 2021, up 1.9 % year-on-year. In organic terms, adjusted EBITDA AL increased by 4.6 %, mainly on the back of the increase in revenue.

Czech Republic. In the reporting period, revenue in the Czech Republic stood at EUR 1.1 billion, up 6.9 % on the prior-year level. Organic growth was 3.6 % on account of positive exchange rate effects. Mobile revenues were a major driver of this trend, mainly on the back of increased service revenues (excluding visitor revenues) with higher margins, and higher terminal equipment revenues. In addition, broadband and TV business in the fixed network were yet again the key driver of growth in service revenues, thus bearing out our fiber-optic investment strategy. The number of broadband customers increased substantially year-on-year. We also generated additional revenue in the area of systems solutions.

Adjusted EBITDA AL increased by 9.5 % year-on-year to EUR 471 million. In organic terms, earnings grew by 6.2 % year-on-year, driven mainly by revenue.

Austria. Revenue in Austria totaled EUR 1.4 billion in the 2021 financial year. This increase of 3.8 % was mainly attributable to growth in mobile revenues, driven above all by an increase in higher-margin service revenues. The sale of mobile terminal equipment also made a positive contribution to revenue. Visitor revenues also had a modest positive effect. Service revenues in the fixed-network business also developed encouragingly. The broadband business generated substantial growth rates, due among other factors to a larger customer base and higher-value rate plans.

Adjusted EBITDA AL decreased as of December 31, 2021 by 1.8 % year-on-year to EUR 487 million. In organic terms, i.e., excluding the transfer of the Austrian cell tower business to the Group Development operating segment, adjusted EBITDA AL increased substantially by 9.7 % due to the positive revenue effect. A key contribution comes from the realization of synergies and from the expansion of convergent product offerings.

EBIT

Our Europe operating segment recorded an increase in EBIT of EUR 536 million in the reporting year. In addition to an increase in EBITDA of EUR 237 million, depreciation, amortization and impairment losses decreased by EUR 299 million, with depreciation and amortization down year-on-year. This was mainly a result of the suspension of depreciation and amortization in connection with Telekom Romania Communications due to the fact that it was held for sale until September 30, 2021. In addition, depreciation and amortization was lower on account of the transfer of the Austrian cell tower business to the Group Development operating segment. In the third quarter of the prior year, ad hoc impairment losses totaling EUR 160 million had been recognized on non-current assets of the Romanian mobile business, which is to remain in the Group. This impairment was triggered by the discontinuance of the previously existing MVNO agreements in connection with the sale of the Romanian fixed-network business, which was still being planned at that time.

Cash capex

In the 2021 financial year, the Europe operating segment reported cash capex of EUR 1.9 billion, down 14.0 % year-on-year. This decrease is due to a decline in cash outflows for the acquisition of spectrum licenses, primarily in Hungary and Greece. We continue to invest in the provision of broadband and fiber-optic technology and in 5G as part of our integrated network strategy.

Systems Solutions

Order entry

millions of €					
	2021	2020	Change	Change %	2019
Order entry	4,174	4,564	(390)	(8.5)	4,740

Development of business

The 2021 financial year continued to be dominated by the focusing of our systems solutions business on growth and future viability and the continuation of our transformation program. Under the transformation program, we continued to drive forward the alignment of our organization, workflows, and capacities, and the fine-tuning of the strategy for our portfolio. Stand-alone portfolio units assume responsibility not only for our growth areas (e.g., public cloud and security) but also for our traditional IT business.

We have defined selected industries (automotive, healthcare, public sector, and public transport), for which we have increased our offer of vertical solutions based on our expertise. In addition, we have agreed partnerships with leading cloud service providers (e.g., Amazon, Google, Microsoft), so as to be able to offer our customers an even broader and more flexible range of cloud solutions. Consistent with our efforts to implement the Group's strategy pillar "Lead in business productivity," we transferred our IoT (Internet of Things) portfolio unit to the Germany operating segment effective January 1, 2021.

Order entry in our Systems Solutions operating segment decreased year-on-year by 8.5 % in the 2021 financial year, putting it below our expectations. This development was mainly due to a decline in both traditional IT infrastructure business and SAP business, which was only partially offset by the strong upward trends in our growth areas. In addition, the prior-year figure included two major deals signed with important existing customers in late 2020.

Development of operations

millions of €					
	2021	2020	Change	Change %	2019
Total revenue	4,019	4,159	(140)	(3.4)	4,411
Of which: external revenue	3,171	3,237	(66)	(2.0)	3,418
Service revenue^a	3,893	3,903	(10)	(0.3)	n.a.
Profit (loss) from operations (EBIT)	(242)	(534)	292	54.7	(336)
Special factors affecting EBIT	(393)	(582)	189	32.5	(332)
EBIT (adjusted for special factors)	151	48	103	n.a.	(4)
EBIT margin (adjusted for special factors) %	3.8	1.2			(0.1)
Depreciation, amortization and impairment losses	(425)	(720)	295	41.0	(452)
EBITDA	183	185	(2)	(1.1)	116
Special factors affecting EBITDA	(213)	(209)	(4)	(1.9)	(304)
EBITDA (adjusted for special factors)	396	394	2	0.5	421
EBITDA AL	73	70	3	4.3	2
Special factors affecting EBITDA AL	(213)	(209)	(4)	(1.9)	(304)
EBITDA AL (adjusted for special factors)	286	279	7	2.5	307
EBITDA AL margin (adjusted for special factors) %	7.1	6.7			7.0
Cash capex	(237)	(235)	(2)	(0.9)	(324)

^a The definition of "service revenue" was not applied consistently Group-wide for the years prior to 2020.

Total revenue, service revenue

Total revenue in our Systems Solutions operating segment in the 2021 financial year amounted to EUR 4.0 billion, down 3.4 % year-on-year. Service revenue remained more or less stable year-on-year. The decrease in total revenue was mainly driven by the expected decline in traditional IT infrastructure business, due in part to deliberate business decisions such as the reduction in end-user services. Inorganic effects, including the sale of a business operation, further contributed to the decrease in revenue. By contrast, our growth areas grew significantly, especially public cloud (+19.2 %), digital solutions (+13.5 %), and road charging (+13.4 %).

Adjusted EBITDA AL, EBITDA AL

In the 2021 financial year, adjusted EBITDA AL at our Systems Solutions operating segment increased by 2.5 % year-on-year to EUR 286 million. Efficiency effects from our transformation program and effects from increased revenue in our growth areas exceeded the decline in earnings in the traditional IT infrastructure business. EBITDA AL increased by EUR 3 million compared with the prior year to EUR 73 million. Negative special factors were up EUR 4 million on the prior year at EUR 213 million, mainly due to a loss on deconsolidation in connection with the sale of a business operation and a contrasting effect of lower restructuring costs.

Adjusted EBIT, EBIT

Adjusted EBIT in our Systems Solutions operating segment in the 2021 financial year improved by EUR 103 million year-on-year, coming in at EUR 151 million, mainly as a result of declines in depreciation and amortization. EBIT increased by EUR 292 million compared with the prior year to EUR -242 million. The expense arising from special factors decreased by EUR 189 million year-on-year, to EUR 393 million. In the prior year, a non-cash impairment loss on non-current assets reduced EBIT by EUR 0.4 billion, which resulted in a reduction in the depreciation and amortization base. In the reporting year, non-cash impairment losses on non-current assets totaling EUR 0.2 billion were recorded as special factors. This was a consequence of several factors, including the ad hoc impairment testing carried out in the Systems Solutions cash-generating unit in the prior year. In addition, despite the marginal improvement in the business outlook, the increase in the cost of capital in the reporting year prompted further impairment losses to be recognized on non-current assets at the end of 2021.

Cash capex

Cash capex in the Systems Solutions operating segment stood at EUR 237 million in the 2021 financial year, which was on a par with the prior year. Going forward, we will continue to focus our investments on developing our growth business.

Group Development

Customer development

thousands

		Dec. 31, 2021	Dec. 31, 2020	Change	Change %	Dec. 31, 2019
T-Mobile Netherlands	Mobile customers	6,939	6,803	136	2.0	5,610
	Fixed-network lines	739	682	57	8.4	619
	Broadband customers	728	668	60	9.0	605

In the Netherlands, the number of mobile customers increased slightly. The number of fixed-network lines in the Netherlands contributed to the positive development of operational business and profited from the reopening of the T-Mobile shops at the end of April 2021 after the coronavirus-related lockdown, as well as from successful advertising.

Development of operations

millions of €

	2021	2020	Change	Change %	2019
Total revenue	3,165	2,883	282	9.8	2,797
Of which: T-Mobile Netherlands	2,071	1,946	125	6.4	1,910
Of which: GD Towers ^{a, b}	1,112	989	123	12.4	945
Service revenue^c	1,621	1,468	153	10.4	n.a.
Profit (loss) from operations (EBIT)	1,084	562	522	92.9	615
Depreciation, amortization and impairment losses	(706)	(780)	74	9.5	(812)
EBITDA	1,790	1,343	447	33.3	1,427
Special factors affecting EBITDA	173	(43)	216	n.a.	97
EBITDA (adjusted for special factors)	1,618	1,386	232	16.7	1,330
Of which: T-Mobile Netherlands	757	639	118	18.5	591
Of which: GD Towers ^{a, b}	894	786	108	13.7	771
EBITDA AL	1,479	1,058	421	39.8	1,130
Special factors affecting EBITDA AL	173	(43)	216	n.a.	97
EBITDA AL (adjusted for special factors)	1,307	1,101	206	18.7	1,033
Of which: T-Mobile Netherlands	668	554	114	20.6	502
Of which: GD Towers ^{a, b}	669	587	82	14.0	563
EBITDA AL margin (adjusted for special factors)	% 41.3	38.2			36.9
Cash capex	(572)	(699)	127	18.2	(452)

The contributions of T-Mobile Netherlands and GD Towers are shown excluding consolidation effects at operating segment level.

^a As of January 1, 2021, the Austrian cell tower business was transferred from the Europe operating segment to the Group Development operating segment. Prior-year comparatives were not adjusted.

^b As of June 1, 2021, the Dutch cell tower business was sold to DIV and subsequently contributed into Cellnex Netherlands.

^c The definition of "service revenue" was not applied consistently Group-wide for the years prior to 2020.

Total revenue, service revenue

Total revenue in our Group Development operating segment increased in the 2021 financial year by 9.8 % year-on-year to EUR 3.2 billion. In organic terms, i.e., adjusted for the sale of the Dutch cell tower business as of June 1, 2021, the transfer of the Austrian cell tower business as of January 1, 2021, as well as the acquisition of the Dutch MVNO and SIM provider Simpel as of December 1, 2020, revenue increased by 4.6 %. This revenue increase resulted from the operational and structural growth of our two business units T-Mobile Netherlands and GD Towers, which includes DFMG and the Austrian cell tower business. In the Netherlands, mobile operations in particular contributed to this revenue growth on the back of higher out-of-bundle revenues and higher terminal equipment sales. GD Towers also recorded an increase in revenue, driven by growth in the number of cell sites at DFMG and the transfer of the Austrian cell tower business. Service revenue rose by 10.4 % year-on-year to EUR 1.6 billion, primarily as a result of the operational growth of our T-Mobile Netherlands business unit, as well as the acquisition of the Dutch MVNO and SIM provider Simpel.

Adjusted EBITDA AL, EBITDA AL

Adjusted EBITDA AL increased by 18.7 % year-on-year to EUR 1.3 billion. This growth was attributable to the aforementioned positive revenue trend at T-Mobile Netherlands, the acquisition of Simpel, and efficient cost management at T-Mobile Netherlands. The GD Towers business posted consistent growth on the back of rising volumes and was further strengthened by the transfer of the Austrian cell tower business. An operational increase in adjusted EBITDA AL was also achieved through revenue growth and cost transformation. In organic terms, adjusted EBITDA AL grew by 13.5 %. EBITDA AL was positively influenced by net special factors of EUR 173 million, which mainly related to the gain on deconsolidation due to the sale of the Dutch cell tower business. EBITDA AL increased by EUR 421 million compared with the prior-year period to EUR 1.5 billion.

EBIT

EBIT increased by EUR 522 million year-on-year to EUR 1.1 billion, mainly as a result of the development described under EBITDA AL. Depreciation, amortization and impairment losses were down year-on-year, primarily due to lower depreciation and amortization in connection with the fact that T-Mobile Netherlands has been held for sale since September 6, 2021, and, accordingly, the related depreciation and amortization has been suspended.

Cash capex

Cash capex stood at EUR 572 million and thus below the prior-year level. The decrease is mainly due to the acquisition of mobile spectrum licenses by T-Mobile Netherlands in 2020. We continue to focus our investments on the accelerated 5G build-out and the build-out of mobile infrastructure in Germany.

Group Headquarters & Group Services

Development of operations

millions of €					
	2021	2020	Change	Change %	2019
Total revenue	2,515	2,556	(41)	(1.6)	2,627
Service revenue^a	984	970	14	1.4	n.a.
Profit (loss) from operations (EBIT)	(1,764)	(1,655)	(109)	(6.6)	(1,631)
Depreciation, amortization and impairment losses	(1,463)	(1,304)	(159)	(12.2)	(1,143)
EBITDA	(300)	(350)	50	14.3	(488)
Special factors affecting EBITDA	(182)	(277)	95	34.3	(237)
EBITDA (adjusted for special factors)	(118)	(73)	(45)	(61.6)	(251)
EBITDA AL	(622)	(707)	85	12.0	(887)
Special factors affecting EBITDA AL	(182)	(277)	95	34.3	(237)
EBITDA AL (adjusted for special factors)	(440)	(429)	(11)	(2.6)	(650)
Cash capex	(1,007)	(990)	(17)	(1.7)	(1,010)

^a The definition of "service revenue" was not applied consistently Group-wide for the years prior to 2020.

Total revenue, service revenue

Total revenue in our Group Headquarters & Group Services segment decreased in 2021 by 1.6 % year-on-year, mainly as a result of lower revenue from land and buildings due to the ongoing optimization of space. Higher intragroup service revenues at Deutsche Telekom IT from the licensing of the ERP system had an offsetting effect.

Adjusted EBITDA AL, EBITDA AL

Adjusted EBITDA AL at Group Headquarters & Group Services decreased by EUR 11 million year-on-year to EUR -440 million, largely as a result of falling revenue from land and buildings, and lower income from real estate sales. Increased service revenues at Deutsche Telekom IT from the licensing of the ERP system and from lower operating expenses at our Group Services had a positive effect.

Overall, EBITDA AL was negatively impacted in the reporting year by special factors amounting to EUR 182 million, especially for staff-related measures. This contrasts with special factors of EUR 277 million in the prior-year period, also in particular for staff-related measures.

EBIT

The year-on-year decline in EBIT of EUR 109 million to EUR -1.8 billion was largely a result of two contrasting effects: the significant increase in depreciation and amortization on the one hand, and the positive development of EBITDA AL on the other. The increase in depreciation, amortization and impairment losses is mainly attributable to the increased volume of output in connection with the introduction of agile processes and shorter project runtimes at Deutsche Telekom IT. In addition, depreciation, amortization and impairment losses increased due to higher capitalization in connection with the licensing of the ERP system. By contrast, depreciation, amortization and impairment losses from land and buildings decreased as a result of our continued optimization of the real estate portfolio. Impairment losses were also recognized by the Group Headquarters & Group Services segment in the reporting year totaling EUR 21 million on software used by the Systems Solutions operating segment. In the prior year, EUR 44 million had related to the Group Headquarters & Group Services segment in this connection.

Cash capex

Cash capex increased year-on-year by EUR 17 million. Increased investment at Group Headquarters contrasted with lower cash capex for vehicles and lower investment in technology and innovation, mainly for development activities.

Development of business at Deutsche Telekom AG

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

As the Headquarters of the Deutsche Telekom Group, we perform strategic and cross-segment management functions and provide services for other Group companies. The profits and losses of our subsidiaries and Group financing measures have a material effect on our financial position and results of operations. Total revenue in the United States operating segment increased by 11.7 % year-on-year. This increase was mainly attributable to higher service and terminal equipment revenues. In the Germany operating segment, total revenue was up 1.6 % against the prior year. This increase was primarily driven by service revenues in the fixed network and mobile business. Total revenue rose by 0.4 % compared with the previous year in the Europe operating segment. In organic terms, i.e., adjusted for the sale of the Romanian fixed-network business as of September 30, 2021 and assuming constant exchange rates, revenue increased by 2.4 % against the prior-year level. Organic growth was mainly driven by the strong performance of the mobile business. Total revenue in our Systems Solutions operating segment was down 3.4 % year-on-year. This decrease was mainly driven by the expected decline in traditional IT infrastructure business, due in part to deliberate business decisions such as the reduction in end-user services. By contrast, our growth areas grew significantly, especially Public Cloud (+19.2 %), Digital Solutions (+13.5 %), and Road Charging (+13.4 %). Total revenue in our Group Development operating segment increased by 9.8 % year-on-year. In organic terms, i.e., adjusted for the sale of the Dutch cell tower business as of June 1, 2021, the transfer of the Austrian cell tower business as of January 1, 2021, as well as the acquisition of the Dutch MVNO and SIM provider Sempel as of December 1, 2020, revenue increased by 4.6 %.

Deutsche Telekom AG reported income after taxes for the 2021 financial year of EUR 3.6 billion. Alongside the operating business, the development of business in the reporting year was affected by a large number of other factors, including a capital repayment based on fair values by T-Mobile Global Holding GmbH, Bonn, to T-Mobile Global Zwischenholding GmbH, Bonn.

Results of operations of Deutsche Telekom AG

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

millions of €

	2021	2020	Change	Change %	2019
Net revenue	2,538	2,740	(202)	(7.4)	3,423
Other own capitalized costs	9	9	0	0.0	7
Total operating performance	2,547	2,749	(202)	(7.3)	3,430
Other operating income	1,177	4,725	(3,548)	(75.1)	2,387
Goods and services purchased	(481)	(471)	(10)	(2.1)	(1,037)
Personnel costs	(2,176)	(2,291)	115	5.0	(2,326)
Depreciation, amortization and write-downs	(288)	(211)	(77)	(36.5)	(254)
Other operating expenses	(2,485)	(2,834)	349	12.3	(3,081)
Operating results	(1,706)	1,667	(3,373)	n.a.	(881)
Net financial income (expense)	5,606	1,245	4,361	n.a.	3,131
Income taxes	(278)	(380)	102	26.8	(484)
Income after income taxes	3,622	2,532	1,090	43.0	1,766
Other taxes	(17)	(17)	0	0.0	(17)
Income after taxes	3,605	2,515	1,090	43.3	1,749

The negative operating results worsened by approximately EUR 3.4 billion year-on-year, due mainly to a year-on-year decrease in other operating income of EUR 3.5 billion and a EUR 0.2 billion decline in net revenue. A decrease in other operating expenses of EUR 0.3 billion in particular had an offsetting effect.

Lower intragroup cost transfers from hiring out employees and from renting and leasing out property were the main factors contributing to the reduction in net revenue of EUR 0.2 billion.

Other operating income in the previous year had been positively impacted by several factors, including income of EUR 1.5 billion in connection with a capital repayment based on fair values, the write-up on an equity investment of EUR 0.9 billion, and the realization of hidden reserves in connection with a spin-off in the amount of EUR 0.8 billion. The decrease of EUR 3.5 billion in the reporting year was also attributable to a EUR 0.2 billion decline in income from derivatives, mainly in connection with U.S. dollar contracts, and to a EUR 0.1 billion decline in foreign currency translation gains on loans denominated in foreign currencies.

The decrease of EUR 0.3 billion in other operating expenses compared with the previous year was mainly attributable to a reduction of EUR 0.1 billion in foreign currency translation losses and a EUR 0.1 billion decline in expenses from derivatives, in particular in connection with U.S. dollar contracts. Another contributory factor was the EUR 0.1 billion decrease in other employee-related costs.

Net financial income increased by EUR 4.4 billion to EUR 5.6 billion, due primarily to an increase of EUR 2.5 billion in income related to subsidiaries, associated, and related companies and a EUR 0.5 billion decrease in net interest expense. Furthermore, net financial income in the previous year had been negatively impacted by a write-down in the amount of EUR 1.4 billion on CTA Holding GmbH, Bonn.

Income related to subsidiaries, associated, and related companies was positively affected in the reporting year in particular by profits transferred by Telekom Deutschland GmbH, Bonn, of EUR 4.3 billion (2020: EUR 3.6 billion), by T-Mobile Global Zwischenholding GmbH, Bonn, of EUR 2.1 billion (2020: EUR 0.6 thousand), by GMG Generalmietgesellschaft mbH, Cologne, of EUR 0.3 billion (2020: EUR 0.2 billion), and by DFMG Holding GmbH, Bonn, of EUR 0.1 billion (2020: EUR 0.2 billion). The transfer of the losses from Deutsche Telekom IT GmbH, Bonn, of EUR 0.7 billion (2020: EUR 0.8 billion), from T-Systems International GmbH, Frankfurt/Main, of EUR 0.2 billion (2020: EUR 0.7 billion), and from Telekom Innovation Pool GmbH, Bonn, of EUR 0.1 billion (2020: EUR 6 million) had an offsetting effect.

Income related to subsidiaries, associated and related companies was impacted in particular by the operating business of the consolidated subsidiaries. The figure for the reporting year also included the effect of a capital repayment based on fair values by T-Mobile Global Holding GmbH, Bonn, to T-Mobile Global Zwischenholding GmbH, Bonn, in the amount of EUR 2.1 billion.

The decrease in net interest expense of EUR 0.5 billion compared with the prior year was primarily the result of higher income from plan assets for pension obligations in the amount of EUR 0.2 billion and lower interest expense resulting from the decrease in long-term loans from Group companies, accounting for EUR 0.1 billion. In addition, a EUR 0.1 billion decline in expenses from interest added back to noncurrent other accruals had a positive effect on net interest expense.

Income after income taxes was particularly impacted by the aforementioned effects and increased by EUR 1.1 billion year-on-year in 2021.

Other tax expense of EUR 17 million combined with the aforementioned factors resulted in income after taxes of EUR 3,605 million in the 2021 financial year. Taking into account EUR 2,283 million in unappropriated net income carried forward, unappropriated net income totaled EUR 5,888 million.

Financial position of Deutsche Telekom AG

Balance sheet of Deutsche Telekom AG under German GAAP

millions of €

	Dec. 31, 2021	Dec. 31, 2021 %	Dec. 31, 2020	Change	Dec. 31, 2019
Assets					
Intangible assets	301	0.3	216	85	217
Property, plant and equipment	2,337	2.0	2,388	(51)	2,313
Financial assets	106,615	91.2	101,411	5,204	111,020
Noncurrent assets	109,253	93.5	104,015	5,238	113,550
Receivables	5,186	4.4	8,180	(2,994)	6,695
Other assets	1,556	1.3	964	592	1,313
Cash and cash equivalents	454	0.4	3,201	(2,747)	2,076
Current assets	7,196	6.2	12,345	(5,149)	10,084
Prepaid expenses and deferred charges	455	0.4	437	18	463
Difference between plan assets and corresponding liabilities	0	0	9	(9)	13
Total assets	116,904	100.0	116,806	98	124,110
Shareholders' equity and liabilities					
Capital stock and reserves	53,662	45.9	53,028	634	53,021
Unappropriated net income	5,888	5.0	5,129	759	5,460
Shareholders' equity	59,550	50.9	58,157	1,393	58,481
Accruals for pensions and similar obligations	3,898	3.3	3,960	(62)	3,780
Tax accruals	252	0.2	412	(160)	411
Other accruals	3,034	2.6	2,591	443	2,602
Accruals	7,184	6.1	6,963	221	6,793
Debt	10,175	8.7	10,952	(777)	10,928
Remaining liabilities	39,859	34.1	40,594	(735)	47,776
Liabilities	50,034	42.8	51,546	(1,512)	58,704
Deferred income	136	0.1	140	(4)	132
Total shareholders' equity and liabilities	116,904	100.0	116,806	98	124,110

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

The balance sheet total increased by EUR 0.1 billion year-on-year to EUR 116.9 billion.

The development of total assets was attributable in particular to the increase of EUR 5.2 billion in financial assets and the increase of EUR 0.6 billion in other assets. By contrast, receivables decreased by EUR 3.0 billion and cash and cash equivalents by EUR 2.7 billion.

Financial assets increased year-on-year by EUR 5.2 billion, due primarily to an intragroup restructuring of current receivables from cash management from Telekom Deutschland GmbH, Bonn, in the amount of EUR 5.0 billion to noncurrent loans. Other factors contributing to the increase were the acquisition of shares in T-Mobile US, Inc, Bellevue (EUR 0.6 billion), a capital increase at Digital Infrastructure Vehicle II SCSp SICAV-RAIF, Senningerberg, a fund company established in the reporting year (EUR 0.3 billion), and an increase in loans to OTE Plc, London (EUR 0.2 billion). In particular a loan repayment by T-Mobile USA, Inc., Bellevue, in the amount of EUR 0.8 billion had an offsetting effect.

The decrease in receivables of EUR 3.0 billion resulted primarily from EUR 1.8 billion lower receivables from cash management, mainly due to an intragroup restructuring of current receivables from cash management from Telekom Deutschland GmbH, Bonn, to noncurrent loan receivables. The capital repayment by T-Mobile Global Holding GmbH, Bonn, had an offsetting effect on receivables from cash management. The decrease of EUR 1.1 billion in financial receivables from affiliated companies, mainly from the repayment of short-term loans by Deutsche Telekom Europe B.V., Maastricht, further reduced receivables.

The increase of EUR 0.6 billion in other assets is primarily due to higher receivables from collateral. The change in receivables from collateral is attributable to regular fluctuation in market values.

The development of total shareholders' equity and liabilities was mainly influenced by the increase of EUR 1.4 billion in shareholders' equity. By contrast, financial liabilities decreased by EUR 0.8 billion and other liabilities by EUR 0.7 billion.

The increase in shareholders' equity of EUR 1.4 billion was primarily attributable to income after taxes of EUR 3.6 billion in the 2021 financial year as well as a capital increase of EUR 0.6 billion. The dividend payment of EUR 2.8 billion for the previous year had an offsetting effect.

Financial liabilities decreased to EUR 10.2 billion, down by EUR 0.8 billion compared to the prior year. The EUR 1.0 billion decline in liabilities to banks accounted for a large share of this decrease. Bonds issued in the reporting year had an offsetting effect of EUR 0.2 billion.

Remaining liabilities decreased by a total of EUR 0.7 billion year-on-year, due mainly to the decrease of EUR 3.7 billion in financial liabilities to affiliated companies, particularly as a result of loan repayments of EUR 2.6 billion to Deutsche Telekom International Finance B.V., Maastricht, and of EUR 1.2 billion to T-Mobile Austria Holding GmbH, Vienna. Furthermore, other liabilities decreased by EUR 0.4 billion, EUR 0.3 billion of which were attributable to liabilities from early retirement arrangements for civil servants. By contrast, current liabilities from cash management increased by EUR 3.3 billion as a result of payments received by subsidiaries that were transferred to Deutsche Telekom AG in connection with the intragroup cash management system.

Statement of cash flows of Deutsche Telekom AG under German GAAP

millions of €

	2021	2020	Change	2019
Income after taxes	3,605	2,515	1,090	1,749
Net cash provided by (used for) operating activities	8,673	(1,808)	10,481	17,760
Net cash (used for) provided by investing activities	(2,980)	11,587	(14,567)	(14,536)
Net cash (used for) provided by financing activities	(8,440)	(8,654)	214	(1,828)
Net change in cash and cash equivalents	(2,747)	1,125	(3,872)	1,396
Cash and cash equivalents, at the beginning of the year	3,201	2,076	1,125	680
Cash and cash equivalents, at the end of the year	454	3,201	(2,747)	2,076

Net cash provided by/used for operating activities changed year-on-year by EUR 10.5 billion, resulting in net cash provided by operating activities of EUR 8.7 billion. This was attributable to income after taxes of EUR 3.6 billion plus a EUR 5.1 billion increase in net debt in connection with the intragroup cash management system. The increase compared with the previous year is attributable in particular to the conversion of current receivables from cash management into long-term loans at Telekom Deutschland GmbH, Bonn, which was completed in the reporting year. In addition, the year-on-year increase was attributable in part to a repayment of liabilities from cash management in connection with a capital repayment by T-Mobile Global Zwischenholding GmbH, Bonn, in the previous year.

Net cash used for/provided by investing activities changed year-on-year by EUR 14.6 billion, resulting in net cash used for investing activities of EUR 3.0 billion. This change was primarily attributable to cash outflows of EUR 5.2 billion in the reporting period as a result of loans granted to subsidiaries, mainly due to intragroup debt restructuring measures at Telekom Deutschland GmbH, Bonn. Corporate actions at subsidiaries resulted in further cash outflows in the amount of EUR 0.4 billion. Repayments of loans by Deutsche Telekom Europe B.V., Maastricht, in the amount of EUR 1.0 billion, and by T-Mobile USA, Inc., Bellevue, in the amount of EUR 0.8 billion in particular had an offsetting effect. Net cash used for/provided by investing activities also included interest received of EUR 0.8 billion. In the previous year, the Company's investing activities had been impacted by capital and loan repayments by subsidiaries totaling EUR 11.7 billion, in particular by T-Mobile USA, Inc., Bellevue, and T-Mobile Global Zwischenholding GmbH, Bonn, as well as by cash outflows to subsidiaries in connection with loans granted and the acquisition of property totaling EUR 1.3 billion. The prior-year figure had also included interest received of EUR 1.2 billion.


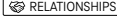


Net cash used for financing activities decreased only marginally by EUR 0.2 billion year-on-year to EUR 8.4 billion. Net cash used for financing activities in the reporting year resulted primarily from net repayments of current financial liabilities of EUR 4.5 billion, the payment of the dividend for the 2020 financial year of EUR 2.8 billion, and interest paid of EUR 1.3 billion.



In all, this resulted in a decrease in cash and cash equivalents of EUR 2,747 million in the reporting year.

Risk management in hedge accounting



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

Corporate responsibility and non-financial statement


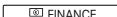


  Deutsche Telekom again contributed to the response to the coronavirus pandemic in 2021. In times of physical distancing, we made it possible for people to stay in contact, to obtain information, and to work or learn from home. Our multi-billion investments in the network infrastructure have paid off: our networks ran stably, even under high loads. We also implemented a range of other measures to help mitigate the effects of the coronavirus crisis on society. For example, in Europe we provided our customers, medical facilities, and care homes for the elderly with free internet connections and data volume. We also provided school and university students with access to technical equipment that would support them during distance learning. The Corona-Warn-App, which traces contacts between users of the app and which we developed jointly with SAP, has become one of the most important tools for individual protection during the pandemic both in Germany and abroad, with more than 34 million users.  



We often do not realize just how much we rely on mobile network and internet access in our day-to-day lives until there is a network outage. The catastrophic flooding in summer 2021 caused devastation in central Europe, including to our networks. Our employees made exceptional efforts again in this trying situation: The mobile network was restored extremely quickly, with a return to full coverage in the affected areas by the end of July 2021. We quickly came to the aid of those living in the area, distributing some 5,000 cell phones, including SIM cards, power banks, and quick-start packages, and increasing the data volume available to those affected. We are also working to rebuild the fixed network as quickly as possible. Over 96 % of the 103,000 fixed-network lines damaged in the flood disaster in Rhineland-Palatinate and North Rhine-Westphalia were fully operational again by the end of 2021. In particularly hard-hit regions, we are rebuilding telecommunications infrastructure from scratch in close cooperation with the municipalities and other utility providers. This new infrastructure comprises an FTTH network that connects some 40,000 homes and businesses directly to our network via optical fiber. To keep everyone connected during the work to rebuild the network, our technicians arranged interim solutions. For example, in Eschweiler and Stolberg, street cabinets were fitted with free Wi-Fi. We also supported our employees who live in the areas affected by flooding, for example by providing paid leave from work and emergency financial aid.  

| For further information, please refer to the section "[Employees](#)."

An international study by the World Weather Attribution initiative in cooperation with Germany's National Meteorological Service, the Deutscher Wetterdienst, indicates the strong likelihood that climate change played a role in the torrential rainfall. To mitigate climate change, in 2021 we again stepped up our climate goals considerably: We want to achieve climate neutrality for our direct and indirect emissions by 2025, and for all emissions throughout the value chain by 2040 at the latest. Deutsche Telekom has been powered exclusively by electricity from renewable energy sources since 2021 – across the entire Group. Direct procurement, guarantees of origin, and own energy production are included in this calculation. In the United States, we achieved this by means, among other things, of power purchase agreements (PPAs) with two additional wind farms that were commissioned during the reporting year. The importance of our climate goals to us is also demonstrated by our performance management and incentive system using variable remuneration for members of the Board of Management of Deutsche Telekom AG, introduced in 2021.  

| For further information, please refer to the section "[Management of the Group](#)."

We can do even more to protect our climate by helping our customers reduce their carbon footprint. In 2021, the positive CO₂ effects facilitated for our customers in Germany were 380 % higher than our own CO₂ emissions (enablement factor of 4.8 to 1).   We made major progress in other areas besides climate protection in the reporting year: All T-branded devices launched in Germany since 2021 have come in sustainable packaging, for example recycled cardboard boxes. We will expand this to the whole of Europe in 2022.  


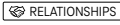
Another key priority for us in 2021 was our commitment to digital participation. We continued our #TAKEPART – No Hate Speech campaign in 2021, and also launched a new priority focus with Gaming – Where the Fun Ends. We are working with the [#equalesports](#) initiative to foster greater diversity in esports and gaming, among other things, and we support increased participation by women in professional and recreational esports.  

Creating transparency

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



| For further information, please refer to the section "[Sustainable Development Goals](#)."

Since the 2017 reporting year, we have published a non-financial statement (NFS) as part of the management report pursuant to the CSR Directive Implementation Act and in accordance with § 315c in conjunction with § 289c to 289e HGB. In selecting the content for the 2021 NFS, we took both the statutory requirements and the results of our materiality analysis into account.

  The concepts in this NFS are described on the basis of our long-standing CR reporting and in line with the Global Reporting Initiative (GRI) standards. In addition, as of the 2021 reporting year, we fulfill the obligatory reporting requirements for environmentally sustainable economic activities in accordance with Regulation (EU) 2020/852 of the European Parliament and of the Council of June 18, 2020 on the establishment of a framework to facilitate sustainable investment, and amending Regulation (EU) 2019/2088 (hereinafter EU taxonomy): In the section “Aspect 1: Environmental concerns” we provide a breakdown of what percentage of our turnover and also of our capital expenditure and operating expenditure for climate-related environmental objectives is taxonomy-eligible (where criteria already exist in our industry for this). The requirements for transparency in corporate sustainability are constantly increasing. To meet these requirements, we have followed the GRI standards for the concepts and the materiality analysis in this NFS, and our CR reporting additionally reflects other voluntary frameworks such as those of the Sustainability Accounting Standards Board (SASB) and the Task Force for Climate-related Financial Disclosures (TCFD).

| Detailed information on this will be published in our 2021 CR report.

The Supervisory Board of Deutsche Telekom AG is responsible for the review of the content of the NFS. In the reporting year, it did this with the support of PricewaterhouseCoopers GmbH Wirtschaftsprüfungsgesellschaft (external auditor) in the form of a limited assurance engagement. The two non-financial performance indicators “energy consumption” and “CO₂ emissions” are included as management-related performance indicators in the reasonable assurance engagement on Deutsche Telekom’s consolidated financial statements and the combined management report. The NFS engagement was based on the International Standard on Assurance Engagements ISAE 3000 (revised). Unless otherwise stated, all disclosures in this NFS apply in equal measure to the Group and the parent company (combined non-financial statement). To avoid repetition within the management report, we refer to further information provided in other sections wherever relevant. References to disclosures not contained in the combined management report are provided as background information; these disclosures are not part of the NFS and thus are not covered by the engagement.

Our annual CR report supplements this NFS, meeting in full the requirements from a range of different stakeholders for substantiated accountability. CR experts will find everything in the report that they need to analyze Deutsche Telekom’s sustainability performance. At the same time, the report aims to engage stakeholders in our sustainability topics. We therefore expanded the CR report in the reporting year to include interactive sustainability stories, serving the growing interest among the general public in sustainability issues. Some of the stories are also available in simplified German.  

We were ranked best in class for sustainability communication in the NetFederation’s CSR Benchmark in the reporting year. We also achieved first place in the ESG Reporting Awards 2021 in the category Best Sustainability Reporting: Technology & Telecoms. Our 2020 CR report received gold both at the German Online Communications Award in the CSR & Annual Report category, and at the 2021 PR Report Award in the category Sustainability and CSR.

Explanation of the business model



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

| For further information on our business model, please refer to the sections “[Group organization](#)” and “[Group strategy](#).”

Strategic and organizational approach to sustainability


We see ourselves as a responsible company and have made that a core element of our Group strategy. We are committed to implementing sustainability along our entire value chain – and to playing an important role in meeting today’s environmental, economic, and social challenges. We are expressly committed to the principles of the United Nations Global Compact, the German Sustainability Code, and the Code of Responsible Conduct for Business. Furthermore, we support the Sustainable Development Goals (SDGs) of the United Nations (UN), in particular contributing to the following goals: 3. Good health and well-being, 4. Quality education, 5. Gender equality, 8. Decent work and economic growth, 9. Industry, innovation and infrastructure, 11. Sustainable cities and communities, 12. Responsible consumption and production, 13. Climate action, and 16. Peace, justice and strong institutions.

The defining priorities of our CR strategy remain the same. However, our experience has shown that the three action areas of our CR strategy: “Connected life and work – enabling a sustainable lifestyle in a digital world,” “Connecting the unconnected,” and “Low-carbon and circular society” overlap in places. “Enabling a sustainable lifestyle in a digital world” in particular cannot be considered in isolation from the other two action areas. In addition, the issue of corporate digital responsibility has grown more important in recent years. We have therefore adjusted and expanded the wording of our action areas: “Climate protection & resource efficiency,” “Digital responsibility,” and “Digital participation.” Underpinned by clear governance, all three action areas help enable sustainable digitalization. The other key areas of our sustainability management remain unchanged: data security and data privacy, human rights and sustainable supply chains, sustainable finance, social commitment, and being a responsible employer. In addition, the principle of responsible corporate governance remains an important component of our sustainability activities.

During the reporting year, we brought many of our CR topics together under the headings #GreenMagenta and #GoodMagenta. Our aim is to position our commitment to sustainability more strongly in our communication with stakeholder groups such as employees and customers. We also use these two categories to label those of our products and initiatives that bring sustainability benefits. #GreenMagenta encompasses Deutsche Telekom products, services, projects, actions, and initiatives that make a positive contribution to climate protection and the more responsible use of resources. #GoodMagenta describes projects, actions, and initiatives that make a positive contribution to overcoming social challenges in the digital world. These labels help us increase the transparency of our CR communication. We also aim to increase transparency for CR experts by bringing our CR strategy in line with the ESG perspectives.  

Our Board of Management bears overall responsibility for our CR goals, discussing and making decisions on key CR-related issues. The Group Corporate Responsibility (GCR) unit develops Group-wide policies and guidelines. Its aim is to further develop our corporate culture, particularly in terms of sustainable innovation and social responsibility. The increasing importance of sustainability for Deutsche Telekom led to the decision to transfer the GCR unit from the Human Resources and Legal Affairs Board of Management department to the department of the Chairman of the Board of Management as of January 1, 2022. By taking this decision, the Supervisory Board and the Board of Management are emphasizing how seriously we take our social and environmental responsibility. The CR managers from the different business units and national companies are responsible for implementing our CR strategy and work together in the international CR Manager Network. GCR is also advised by the CR Board, which is composed of the heads of the Group’s key areas.

Our values and basic principles are anchored in our Guiding Principles, the Code of Conduct, the Code of Human Rights & Social Principles, and other subject-specific policies. The cornerstones of our sustainability management activities are formally set out in our CR Policy, which is binding for all Group units. As part of our CR controlling activities, we record environmental, social, and governance (ESG) data and performance indicators. We use this data primarily to calculate our Group-wide ESG KPIs (key performance indicators), which we use to measure and manage our CR performance. Alongside the ESG KPIs, we also report other metrics and quantitative disclosures with the aim of meeting all internal and external transparency requirements. In some cases, the KPIs and other metrics can also be linked to the SDGs to show the progress we are making in the SDG focus areas. CR controlling was included in Deutsche Telekom’s internal control system (ICS) as a strategically relevant process in the reporting year for the first time. With this in mind, specific ICS principles for CR controlling have already been drawn up and approved by those business units subject to reporting requirements. The ICS principles apply to all indicators that are currently systematically recorded locally and consolidated at Group level. Their aim is to ensure that the process delivers high-quality data, on time and transparently.



Growing numbers of investors take sustainability aspects into account in their investment decisions (Socially Responsible Investments, SRI). SRI investment products consist of securities from companies that have been reviewed based on environmental, social, and governance (ESG) criteria. The development of demand from socially responsible investors for the T-Share is an indicator we can use to assess our sustainability performance. The Socially Responsible Investment ESG KPI indicates the percentage of Deutsche Telekom AG shares held by such investors. Our commitment to greater sustainability is paying off: As of September 30, 2021, around 12 % of all T-Shares were held by investors who show at least a partial concern for environmental, social, and governance criteria, and 10 % were held by investors who manage their funds primarily in accordance with aspects of socially responsible investment (SRI).  

Listing of the T-Share in sustainability indexes/ratings

Rating agency	Indexes/ratings/ranking	2021	2020	2019	2018	2017
S&P CSA	DJSI World	✓	✓	✓	✓	✓
	DJSI Europe	✓	✓	✓	✓	✓
	S&P ESG Index Series	✓	✓	✓	—	—
CDP	STOXX Global Climate Change Leaders	✓	✓	✓	✓	✓
	Supplier Engagement A-List	✓	✓	✓	✓	✗
MSCI	ESG Universal Indexes	✓	✓	✓	✓	✓
ISS-oekom	“Prime” (Sector Leader)	✓	✓	✓	✓	✓
Bloomberg	Gender Equality Index	✓	✓	✓	✓	✗
Sustainalytics	STOXX Global ESG Leaders ^a	✓	✓	✓	✓	✓
	UN Global Compact 100	✓	✓	✓	✓	✓
FTSE Financial Times Stock Exchange	FTSE4Good	✓	✓	✓	✓	✓
V.E.	Euronext V.E. indexes	✓	✓	✓	✗	✗

✓ Listed successfully ✗ Not listed — Index did not exist in the relevant year

^a Listed in other indexes in the relevant universe.

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

Detailed information on this will be published in our 2021 CR report.

Process for determining significant topics

We use a comprehensive materiality process to determine the topics that are relevant both for the direction of our sustainability strategy and for our reporting. To this end, we perform an annual document analysis in order to analyze aspects such as existing legislation and the expectations of our stakeholders, for example, the capital markets. In the reporting year, we focused in particular on the risks and opportunities associated with sustainability. To validate the results, we held a workshop with internal experts to look closely at the risk outcomes. No major topics emerged from the 2021 materiality analysis that needed to be added to those of the previous year. Consequently, there is no need to include further matters in the NFS for 2021.

Detailed information on our approach will be published in our 2021 CR report.

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

For further information, please refer to the section “[Risk and opportunity management](#).”

Aspect 1: Environmental concerns

We are committed not only to minimizing the impact our business activities may have on the climate, but also to tapping into the opportunities for sustainable development offered by digitalization. When used properly, it can also make a valuable contribution to saving energy and thus slowing down climate change.

For further information, please refer to the section “[Deployment of ICT products to the benefit of society](#).”

In order to handle the rising tide of regulatory requirements, especially from the EU, we established an internal, cross-divisional Green Deal task force in 2020. The purpose of the task force is to ensure that necessary measures and processes can be implemented without delay and to create the necessary transparency. As a result, assessments and indications from the task force are taken into account in the Group’s different sustainability initiatives. For example, T-Systems has joined the Climate Neutral Data Centre Pact. Our holistic environmental management system is based on the international ISO 14001 standard. A Group-wide environmental guideline brings together the main voluntary commitments to which the Group as a whole is subject.

Climate protection and resource conservation 🌱 SDG 13 🌍 ENVIRONMENT

Our investments in the network build-out make us one of the biggest investors in the industry. Rising demand for faster data services with full-coverage availability must not lead to an increase in CO₂ emissions and thus accelerate global warming. We are therefore making sure that we increase energy efficiency, for example in our data centers, so that we can at least keep our energy consumption at a stable level. We also use energy from renewable sources to decouple CO₂ emissions from energy consumption. To support Deutsche Telekom's sustainability initiative in the long term, two ESG targets are to be used as components of the variable remuneration of the members of the Board of Management. Since the reporting year, the members of the Board of Management are incentivized to ensure that energy consumption remains at least stable in the medium term and that CO₂ emissions are reduced. The two non-financial performance indicators "energy consumption" and "CO₂ emissions" (Scope 1 and 2) provide the measurement base for target achievement. In the reporting year, energy consumption remained stable year-on-year at 13,323 GWh. Due in particular to the Group-wide use of electricity from renewable energy sources, CO₂ emissions fell sharply against the previous year, and are at 247 kt CO₂e.

For about the last two decades, climate protection has been steadily increasing in importance at Deutsche Telekom. Our Group-wide climate protection strategy covers the following aspects: "Emissions from the value chain," "Renewable energy sources," "Energy efficiency," and "Enablement: positive climate-protection effects on our customers." In 2019, the Group Board of Management adopted ambitious climate goals, which it stepped up again in 2021:

- a. By the end of 2021, we will use electricity that comes from 100 % renewable sources everywhere in the Group (Scope 2, market-based method). We have achieved this goal.
- b. By the end of 2025, we aim to reach climate neutrality across the Company. We will cut up to 95 % of our CO₂ emissions (Scope 1 and 2) with the transition to electricity from renewable energy sources and other measures. We will need to offset the remaining emissions through compensatory measures.
- c. By 2030, we aim to reduce the emissions created by the manufacture and use of our products by 25 % per customer (compared to 2017) (Scope 3, categories: purchased goods and services, capital goods, use of sold products, use of leased products). These emissions account for more than 98 % of our carbon footprint. We maintain a close dialog with suppliers in order to reduce the emissions generated during production and to ensure that the products we offer consume less energy during the utilization phase.
- d. We want to reach "net zero" by the end of 2040 at the latest, leaving no carbon footprint in any of the three scopes. This goal is in line with the targets set out by the European Green Digital Coalition, of which Deutsche Telekom is a founding member.

We developed our Group-wide climate goals in line with the current scientific and political conditions. The Science Based Targets initiative (SBTi) has confirmed to us that our climate protection targets contribute to compliance with the Paris Climate Agreement. The climate goals, which were tightened in 2021, will be reviewed in 2022 in line with the SBTi guidance. The SBTi also gave a positive assessment of the targets set by our subsidiaries in the United States and Hungary. The national companies are taking different steps to achieve these targets. These include power purchase agreements (PPAs) for procuring electricity from specific sustainable sources, such as wind and solar power. At the end of 2021, we were obtaining 23.1 % of our electricity through these PPAs. 🌞 SDG 7 🌍 ENVIRONMENT

We calculate our CO₂ emissions across the Group in line with the market-based method of the Greenhouse Gas (GHG) protocol. The standard distinguishes between three categories of CO₂ emissions (Scope 1, 2, and 3). We report on these each year as part of the CDP and in our CR and Annual Reports.

| Detailed information on year-on-year data trends will be published in our 2021 CR report.

The following graphic illustrates the emissions of the different scopes resulting from our business activities, shown as CO₂-equivalent emissions (CO₂e emissions).

CO₂e emissions (Scope 1–3)

Deutsche Telekom Group in 2021 in % and kilotons (kt) of CO₂e



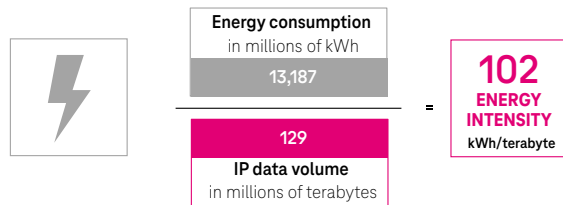
- **Scope 3 emissions from upstream activities:**
Upstream transportation and distribution, purchased goods and services, capital goods, waste generated in operations, fuel- and energy-related activities, business travel, and employee commuting
- **Scope 1 emissions from Deutsche Telekom's own activities:**
Primary energy requirements for operation of Deutsche Telekom's systems, buildings, and vehicles
- 🔌 **Scope 2 emissions from energy procured:**
Generation of electricity and district heating/cooling procured by Deutsche Telekom
- 🚚 **Scope 3 emissions from downstream activities:**
Transportation of products sold to the customer, use of sold or leased products, and disposal and recycling of sold products

The Power Usage Effectiveness (PUE) metric serves as one indicator for enhancing energy efficiency in our data centers. We determine this metric using the method recommended by the standard EN50600 for data centers, which takes the total energy consumed by data centers into account, not just that used to operate the servers. In 2021, the global PUE score for our T-Systems data centers was 1.58. Our high-availability, state-of-the-art data centers operated by T-Systems in Germany are designed with even greater efficiency in mind, and as such are capable of achieving a PUE of 1.30. From 2008 to 2021, we reduced the average PUE score for data centers in Germany from 1.85 to 1.49.

We determine the effectiveness of our climate protection measures using key performance indicators (KPIs). The KPIs Energy Intensity and Carbon Intensity for Deutsche Telekom (fixed-network and mobile entities) are shown in the following graphics. Both KPIs reflect our energy consumption and our CO₂ emissions in relation to the volume of data transmitted, thus demonstrating how our network's energy and emissions efficiency has developed in practice. The result for the Energy Intensity KPI is 102 and for the Carbon Intensity KPI, 2. For the Group entities in Germany, the Energy Intensity KPI stands at 45 and the Carbon Intensity KPI is also at 2. This means that our networks have grown continually more efficient in the course of recent years, despite rising data volumes.

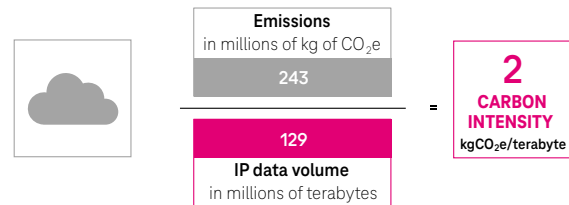
Energy Intensity ESG KPI

Deutsche Telekom Group (fixed-network and mobile entities) in 2021









Carbon Intensity ESG KPI

Deutsche Telekom Group (fixed-network and mobile entities) in 2021





Another important metric for us is the Renewable Energy KPI. It shows how much of our Company's overall electricity consumption is obtained from renewable energy sources. In 2021, this amounted to 100 % across the Group. Direct procurement, guarantees of origin, and own energy production are included in this calculation.

In order to effectively curb climate change, many relevant players must work together, which is why we participate in national and international associations and organizations, such as the Global Enabling Sustainability Initiative (GeSI) and econsense. We are also working systematically on improving climate protection throughout our supply chain. Since 2016, the CDP supplier engagement rating has assessed how well companies have integrated the topic of climate protection into their supply chains. In 2021, we were awarded an A rating by CDP and included on its Supplier Engagement Leader Board. Our CDP Supply Chain Coverage ESG KPI indicates the degree to which our procurement volume was covered by supplier participation in the CDP Supply Chain Program in 2021. In 2021, more than 70 % of the procurement volume was covered. A record 268 suppliers took part in the program in the reporting year (2020: 222).  

Last but not least, handling valuable resources efficiently also plays a vital role in a holistic approach to ecological responsibility. Our previous environmental program "We care for our Planet" was renamed the #GreenMagenta program during the reporting year. This makes it clear that the program is part of our higher-level sustainability agenda #GreenMagenta and #GoodMagenta. Whether in our Telekom shops, with our products and networks, or in terms of mobility, we have adopted an array of measures to conserve resources as part of the program.   For example, all of Deutsche Telekom's new branded products have had sustainable packaging since the end of 2020. We developed corresponding sustainability criteria precisely for this purpose. Over 60 % of the new packaging for smartphones we source from our suppliers also meets these criteria.   Our subsidiary Comfort Charge provides charging infrastructure for e-mobility in Germany. Operating rapid charging stations has allowed us to save more than 548 metric tons of CO₂. That is the equivalent of the CO₂ emissions produced by a passenger car on a journey of around three million kilometers. One of the Group's goals is to increase the proportion of electric vehicles in its fleet. Currently, around 30 % of new vehicles ordered are electric. Various measures have been agreed to significantly increase that share in the coming years and to reduce the share of vehicles with combustion engines. In addition, during the reporting year we again focused on international networking and expansion of the #GreenMagenta program. KPIs were developed for each component of the initiative, which will feed into our ESG KPIs. These KPIs help us measure our progress and also enhance public transparency of what we do.

For further information on the progress of our environmental program and on our KPIs, please refer to the 2021 CR report.

Conserving resources is also a goal of the Green Pioneers initiative launched by our employees. More than 350 employees from around 50 locations in Germany have joined the initiative thus far. Our Green Pioneers play a proactive role within the workforce, promoting awareness of resource efficiency in the workplace and providing impetus for our core business – and they do so voluntarily, on top of their professional duties. In 2021, some Green Pioneers held courses on environmental issues for their colleagues, with more than 1,500 employees in total taking part. They organized workshops as part of #GreenMagenta Week and launched a trash collection competition to mark World Clean-Up Day in September. Other Green Pioneers organized activities on sustainable mobility in the reporting year, such as Cycling to Work and Cycling at Lunchtime. Despite the high proportion of employees working from home during the pandemic, these cycling campaigns had saved more than 20,000 kg of CO₂ by the end of September 2021. The Green Pioneers also worked with Facility Management to install bicycle service stations, where employees who bike to work can quickly and easily carry out minor repairs. At international level, the CR managers in the national companies also launched relevant local activities. DT IT Solutions Russia, for example, carried out local campaigns during #GreenMagenta Week in which, as well as training options, the program also included team trash collection initiatives.  

Compliance with the EU taxonomy transparency requirements

The EU taxonomy aims to promote investment flows from the finance sector to businesses that are involved in environmentally sustainable activities. It is thus intended to help the EU implement the European Green Deal, while, at the same time, creating a common understanding of the environmental sustainability of activities and investments. The regulation also lays down corporate reporting obligations in regard to these economic activities. Criteria were set out in EU legislation in mid-2021 for the first environmental objectives of the taxonomy, Climate Change Mitigation and Climate Change Adaptation.

For Deutsche Telekom, as a company in the information and telecommunications industry, two of the economic activities currently listed in the EU taxonomy are relevant:

- Data processing, hosting and related activities (8.1. in Annex I + II of the Delegated Regulation (EU) 2021/2139)
- Data-driven solutions for GHG emissions reductions (8.2. in Annex I + II of the Delegated Regulation (EU) 2021/2139)

The relevant indicators are applicable to two environmental objectives: Climate Change Mitigation and Climate Change Adaptation. We are allocating them to the objective Climate Change Mitigation.

The EU taxonomy does not currently include criteria for the economic activity “Provision and operation of a network infrastructure for telecommunications.” This means that the key part of our business model is not yet covered by the taxonomy. As a result, we cannot describe our core business as taxonomy-eligible. Suitable EU taxonomy criteria with which we could describe our contribution to climate protection as taxonomy-aligned do not yet exist either. We therefore lobby in a range of business and industry associations for the inclusion of suitable, relevant criteria in the EU taxonomy to describe our core activities.

At the same time, the EU taxonomy does address economic activities that are relevant, e.g., for our fleet and building management activities, but that are not within Deutsche Telekom’s core business. These include the installation, maintenance and repair of energy-efficient devices, of electric vehicle charging stations, of devices for measuring, regulating and controlling the overall energy efficiency of buildings, and of renewable energy technologies. Activities in these areas largely relate to our capital expenditure and our operating expenditure. It will not be possible to gauge whether the associated turnover of the providers of these services are taxonomy-aligned until early 2023, when our business partners publish reports with the relevant information. Until then, we cannot report any capital expenditure and operating expenditure relating to the procurement of products from taxonomy-aligned economic activities as being taxonomy-eligible. We were not able to take the Draft Commission Notice published on February 2, 2022 into account. It provides further details on the interpretation of capital expenditure and operating expenditure (category c in item 1.1.2.2 and 1.1.3.2. of Annex 1 to the Delegated Act). Due to the publication date of the Notice, it will only be possible to carry out the complex and quality-assured collection and review of the necessary disclosures for the first time for the 2022 financial year.

The table below shows the taxonomy-eligibility of our economic activities for this reporting year in absolute figures and as a percentage of the Group’s total turnover, capital expenditure, and operating expenditure. As of the 2022 reporting year, we will also report the amount and the proportion of our economic activities that are taxonomy-aligned. Below, we explain our approach to the two economic activities that are currently relevant to us.

Based on the provisions of the EU taxonomy, the total figures for the Group that are relevant for this calculation in the reporting year are EUR 108.8 billion (turnover), EUR 35.7 billion (capital expenditure), and EUR 0.5 billion (operating expenditure). The definition of turnover from the EU taxonomy is equivalent to net revenue in our Group. The relevant capital expenditures were determined on the basis of the consolidated statement of financial position and are calculated by adding together the following key line items: additions and changes in the composition of the Group under property, plant and equipment, intangible assets (excluding goodwill), and right-of-use assets. The disclosures on capital expenditures do not form part of a capital expenditure plan in line with the EU taxonomy guidelines. The definition used in the EU taxonomy for calculating relevant operating expenditure encompasses costs that relate to research and development; building remediation measures; short-term leases; maintenance and repair; and any other direct expenditures relating to the day-to-day maintenance of property, plant and equipment which are presented in the consolidated income statement under other operating expenses.

The disclosures on taxonomy-eligibility in terms of turnover, capital expenditure, and operating expenditure are directly assigned at the level of product groups to either the operation of data centers in accordance with economic activity 8.1. or the provision of ICT solutions in accordance with economic activity 8.2.

The economic activity **“Data processing, hosting and related activities”** covers “Storage, manipulation, management, movement, control, display, switching, interchange, transmission or processing of data through data centers, including edge computing”, and pertains to group J.63.1.1. of the same name in the European registry of sectors. Of our Group-wide business activities, our Systems Solutions operating segment (T-Systems) falls into this sector. To evaluate whether activities are taxonomy-eligible, we consider T-Systems’ global business, including data centers operated by other companies in which we lease space (“third-party data centers”). Taxonomy-eligible turnover can be clearly and transparently assigned to specific data centers using a suitable ratio. To do so, we use the proportion that a data center makes up of the total number of T-Systems server IDs. Capital expenditure and operating expenditure can be calculated specifically for all data centers using the relevant IT systems. This analysis shows that a large proportion of the revenue from our Systems Solutions segment is taxonomy-eligible. To avoid double counting under the EU taxonomy, T-Systems’ cloud solutions are not covered and reported here; they are only included under the economic activities for data-driven solutions detailed below.

Based on the relevant total figures for the Group, the taxonomy-eligibility of our business activities for data processing and hosting stands at 1.1 % (turnover) and 0.2 % (capital expenditure). Since we classify our data centers as non-current assets, no direct expenses are incurred in this context. In order to also include a view of taxonomy-eligibility from a segment perspective, we additionally report the KPIs in respect of Systems Solutions. The taxonomy-eligible portion, determined using the same calculation logic, is 36.6 % in relation to net revenue of the segment, and 21.3 % in relation to its capital expenditure.

We apply the definition of the economic activity **“Data-driven solutions for GHG emissions reductions”** to those solutions and products in the Group that are “predominantly aimed at the provision of data and analytics enabling GHG emission reductions,” which means that they have clear potential to enable users to save CO₂. In this context, we are guided by the key levers of the established Enablement Factor ESG KPI and by other solutions with clear potential to enable users to save CO₂ within the Sustainable Revenue Share ESG KPI and the #GreenMagenta label. These include first and foremost the following services from among our Group-wide business activities: web- and video-conferencing tools, workplace and cloud solutions, and connected car. We mainly provide these services in the Germany operating segment, in our major subsidiaries in the Europe operating segment, and in the Systems Solutions operating segment. We therefore focus on the relevant companies when evaluating the taxonomy-eligibility of activities. To avoid double counting under the EU taxonomy, T-Systems’ cloud solutions are only reported under this economic activity, and not under that for data processing and hosting.

The very specific selection of economic activities for this taxonomy environmental objective means that only a small proportion of the Deutsche Telekom Group’s turnover (0.8 %) and operating expenditure (2.1 %) is taxonomy-eligible. We only disclose direct operating and capital expenditure for economic activity 8.2 in the Systems Solutions operating segment; we do not provide these figures for the other operating segments due to lack of materiality.

Even an aggregate view of the taxonomy-eligibility of both economic activities provides very low proportions in the reporting year of turnover (1.8 %), capital expenditure (0.2 %), and operating expenditure (2.1 %).

EU taxonomy KPIs – taxonomy-eligibility of the economic activities of the Deutsche Telekom Group

Deutsche Telekom Group in 2021		Turnover		Capital expenditure		Operating expenditure	
		millions of €	%	millions of €	%	millions of €	%
Relevant total figures for the Group		108,794	100.0	35,665	100.0	473	100.0
Of which: taxonomy-eligible	8.1. Data processing and hosting	1,160	1.1	70	0.2	0	0.0
	8.2. Data-driven solutions for GHG emissions reductions	836	0.8	17	0.1	10	2.1
	Total	1,996	1.8	87	0.2	10	2.1
Of which: not taxonomy-eligible		106,798	98.2	35,578	99.8	463	97.9

Aspect 2: Employee concerns

With their commitment, expertise, and high performance, our almost 217,000 employees ensure that we are always there for our customers, our network remains stable, and the Company can grow and pave the way for the digital society. They are crucial to our business success. Six Guiding Principles, representing our values, form the cornerstones for collaboration within our Company. We have defined our strategic HR priorities in line with the motto: “Supporting people. Driving performance.” We attach great importance to employee involvement and fair behavior toward colleagues, promote diversity, and engage in systematic health management.

For our Guiding Principles and further information about our HR work, please refer to the section “[Employees](#).”

Collaboration with employees’ representatives and trade unions

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

Codetermination rights play a key role in the digital transformation. Together with employees’ representatives and trade unions, we want to create the working world of the future – with an eye to the needs of our workforce and the success of our Company. As the underlying laws and contracts vary from country to country, codetermination matters are managed locally with trade unions and employees’ representatives. Group management is generally involved in issues of particular importance.

The works councils, central works councils, and Group Works Council represent the interests of Group employees in Germany. Our partner representing the employees’ interests on a European level is the European Works Council (EWC). We also have executive staff representation committees and representatives of disabled employees at unit, company, and Group level. The EWC has been one of our established key dialog partners for many years, representing the interests of our employees in countries within the European Union and the European Economic Area. The EWC has 32 seats, 29 of which are currently occupied (as at December 31, 2021). Collective bargaining plays an important role and has a long tradition at our Company, a fact made clear by the percentage of employees covered by collective agreements. As of December 31, 2021, 73 % of employees in Germany were covered by collective agreements. We record the Group-wide coverage rate every two years. As of December 31, 2020, it stood at just under 46 %. In 2021, 115 collective agreements were signed with the trade unions in Germany, which is a testament to the close cooperation with employees’ representatives.

We carefully monitored trade union matters in the United States over the course of 2021. The responsibility for national human resources management matters in the United States lies with T-Mobile US’ management, who are deeply committed to exercising this responsibility. Across the globe, Deutsche Telekom respects the rights to freedom of association and collective bargaining in accordance with national law. This naturally also applies to the United States, with all employees at T-Mobile US entitled to form or join a trade union. At the same time, employees are also free to choose not to do so. T-Mobile US will not exert any influence in this respect, neither favoring nor discriminating against employees because of a decision they have made.

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

Our employee survey, carried out every two years, is a key indicator of the relationship between our Company and its workforce. We supplement it with pulse surveys, which give us a snapshot of the mood across the Group twice a year. More than 117,000 colleagues, or 80 % of the total, took part in the employee survey in 2021. The survey dealt, among other topics, with sustainability, with considerable success: 84 % of those surveyed stated that they identified with Deutsche Telekom’s environmental and social engagement. A total of 83 % believe that Deutsche Telekom acts responsibly towards the environment and society. Both figures represent an increase of seven percentage points on the 2019 survey.

For further information about the employee survey, please refer to the section “[Employees](#).”

Diversity, equity, and inclusion SDG 10 EMPLOYEES

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

In line with the key dimensions of diversity set out by the Diversity Charter, we offer all employees – irrespective of age, ethnic origin and nationality, gender and gender identity, physical and mental abilities, religion and worldview, sexual orientation and social origin – many development opportunities. To achieve this, we use a range of measures including mentoring programs, flexible working models, child care services, advisory services for those caring for loved ones, and an action plan for inclusion. Developments in the proportion of women in leadership positions and serving on the supervisory boards are reported to and discussed by the Board of Management on an annual basis. We offer various training courses that shine a light on unconscious bias in order to reveal hidden prejudices. Last but not least, we support the many employee networks at Deutsche Telekom, e.g., in Germany Magenta Pride, Women@telekom, the Fathers' Network, and the Network for International Employees.

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

For further information about equity and diversity in our Group, please refer to the section "[Employees](#)."

Occupational health and safety SDG 3 EMPLOYEES

The coronavirus pandemic again left its mark on 2021. We kept our comprehensive hygiene plans in place and initiated many other measures to protect our employees' health. These focused among other things on offering vaccinations to our employees and on giving our employees the opportunity to work from home where there were no compelling operational or personal grounds preventing this.

For further information, please refer to the section "[Employees](#)."

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

The Board of Management bears overarching responsibility for safeguarding health, occupational safety, and the environment. We manage cross-segment measures at Group level; the Group companies have health & safety managers who are responsible for specific processes and offerings that take into account special requirements and conditions right down to company level. We systematically evaluate the measures to ensure they are effective. The health rate, for instance, is reported to the Board of Management once per quarter. In addition, we review the results of our employee survey, analyses of stress prevention measures under collective agreements, health insurance reports, and competitor benchmarks. We analyze this data each year to derive measures that exceed the statutory requirements. Raising awareness, prevention, and encouraging individual responsibility are high priorities at our Company.

Group-wide initiatives serve to promote health awareness and health literacy among our employees. On completion of the employee survey, for example, all teams across 30 countries are issued recommendations, along with measures to be implemented on the basis of their particular health index rating. In Germany, a range of services are available to employees to promote health in the workplace, including comprehensive check-ups, colon cancer screenings, and flu shots. The Betriebsärztlicher Dienst (BAD) occupational health service started vaccinating Deutsche Telekom employees against the coronavirus at 87 locations around Germany in June 2021. Assembly and meeting spaces at larger locations were turned into temporary vaccination centers. The health promotion program also includes courses on nutrition, exercise, and relaxation (stress prevention, mindfulness, etc.). Due to the coronavirus pandemic, many courses had been held online since 2020. Digital formats were offered again in 2021. In addition, with our Germany-wide employee and executive advisory service, we offer a portfolio of support services in the area of psychosocial health, but also crisis prevention and advice in the event of psychosocial crises and extreme incidents. As part of this, occupational physicians have also been available since 2020 to answer medical questions regarding coronavirus. In 2021, we expanded the options to include an advisory service for our employees who had been affected by the extreme flooding event in July.

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

A variety of key figures demonstrate the effectiveness of our corporate health management services. The health rate, including long-term illnesses, at Deutsche Telekom in Germany was 95.3 % in 2021 (prior year: 95.0 %). Excluding long-term illnesses, the health rate in 2021 stood at 96.7 % (prior year: 96.5 %). The health rate is reported to the Board of Management each quarter. Our aim for 2021 was a Group-wide health rate of 95.9 % (excluding long-term illnesses). The total number of work-related accidents continued to decline in the reporting year in comparison with the previous year. With 4.2 accidents (resulting in over three days of absence) per thousand employees, the accident rate in Germany was well below the industry average. This figure includes occupational accidents associated with the coronavirus pandemic. Without these Covid-19 cases, the accident rate in Germany was 3.7 and therefore once again down year-on-year (prior year: 3.8). The health index, which is measured every two years in a Group-wide employee survey, increased slightly in 2021 in comparison with the previous survey. The score from the 2021 employee survey for the Group health index was 69 on a scale of 0 to 100. In the 2019 survey, the index had been shown as an average on a scale from 1 to 5, with a value of 3.6. When converted to the new scale, this represents 65 points, which means the index improved by 4 points. The next survey is scheduled for 2023.





We noted one-time effects in 2020 and 2021 due to the coronavirus-induced regulations (lockdown) and hygiene measures taken to mitigate the pandemic. This led to an increase in the health rate and an improvement in the accident rate. The return to "normal" working conditions, and also to normality within society, means we must expect an increase in temporary incapacities for work due to infections and a rise in accidents on the way to work. With this in mind, we will not be changing the targets for the health rate or the accident rate.

Aspect 3: Social concerns

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

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

Deployment of ICT products to the benefit of society

During the coronavirus pandemic, the internet has enabled us to physically distance yet still stay close to others. In cooperation with SAP, we have continually improved the Corona-Warn-App that traces contact between users of the application and that was commissioned by the German government. The app now has the ability to store and display EU digital vaccination certificates. By September 2021, the app had been downloaded more than 33 million times.   We also provided specific help with a range of solutions and activities in 2021. For example, Slovak Telekom supported healthcare workers, teachers, and students by providing mobile data, technical equipment, and financial aid. In the United States, T-Mobile US continued its 10Million project, which aims to ensure school students have internet access. In Croatia and Poland, our national companies provided hardware and software to ensure that facilities for elderly people or people in need of care had internet access.  

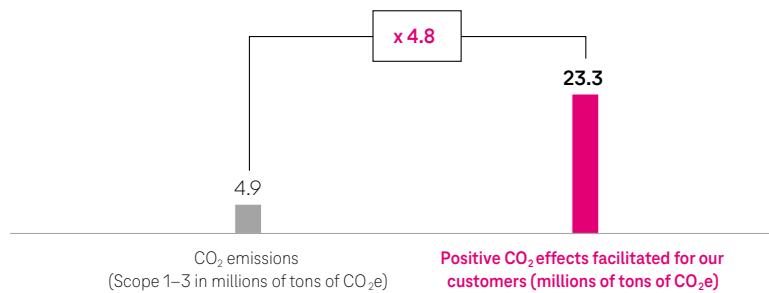
We can use our products, services, and activities to contribute to tackling many environmental and social challenges, as was made clear in a comparison with the 17 sustainability goals (SDGs) adopted by the United Nations. For instance, ICT solutions can help reduce resource consumption in agriculture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

For further information on our sustainability risks and opportunities, please refer to the section [“Risk and opportunity management – Risks and opportunities.”](#)

Using the Sustainable Revenue Share ESG KPI, we determine how much revenue we (excluding T-Mobile US) generate from products that make a contribution to sustainability. In 2021, this share amounted to just over 42 %. For the Enablement Factor ESG KPI, we also calculate the positive CO₂ effects facilitated for our customers through using selected products. Relevant emissions generated by customers are generally taken into account, with the exception of emissions caused by operating video-conferencing facilities. Rebound effects are taken into account based on studies and expert estimates, where it is possible to do so with reasonable effort. We combine this figure with our own CO₂ emissions to determine the enablement factor, which we use to measure our overall performance in relation to climate protection. According to this figure, the positive CO₂ effects facilitated for our customers in Germany were 380 % higher in 2021 than our own CO₂ emissions (enablement factor of 4.8 to 1). The decline against the prior year (enablement factor of 7.1 to 1) is due to the use of more differentiated data collection methods, as well as a reduction in the number of people using our conferencing solutions.

Enablement Factor ESG KPI

Deutsche Telekom Group in Germany in 2021



Sustainable products are another key competition factor at our Company. We work closely with manufacturers to be able to offer an increasingly sustainable product range. In Germany and Austria, we stepped up our collaboration with Fairphone – the leading manufacturer of sustainable smartphones – in the reporting year. We also entered a partnership with Samsung for increased sustainability, and aim to jointly launch a “green” smartphone on the market by the end of 2022. We also introduced the Eco Rating initiative in cooperation with four other European mobile communications operators. This rating is already in use in 26 countries. More than 150 cell phones from 15 suppliers were assessed in regard to their environmental impact throughout their entire life cycle. In this way, we can help our customers make more sustainable purchase decisions and motivate vendors to reduce the environmental footprint of their devices.


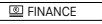
To indicate the sustainability benefits of our products to our customers, we make suitable products identifiable with recognized environmental labels. For example, several routers and mesh devices are certified with the Green Product environmental label of the TÜV Rheinland testing service provider. In addition, the majority of Telekom Deutschland’s fixed-network phones and media receivers carry the Blue Angel or Green Product seal of approval. The Blue Angel was also awarded to the joint system of Telekom Deutschland and Teqcycle for taking back cell phones.


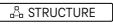
We use #GreenMagenta and #GoodMagenta to label products, services, measures, and initiatives offering ecological or social sustainability added value. We have set out some rules for awarding these two labels. There must be proven sustainability benefits. If there are clear disadvantages for society or the environment, #GreenMagenta or #GoodMagenta may not be awarded. The decision on labeling is made by a panel of experts from a range of fields. For example, we have labeled our green network in Germany, which has been operated with electricity from 100 % renewable energy sources since 2020, with #GreenMagenta. Our Speedport Smart 4 router, with a case made from 90 % recycled plastic and packaging that is entirely plastic-free, also bears the label. For further information on our #GoodMagenta label, please refer to the following two sections.

SDG 12 **ENVIRONMENT**


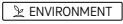
Detailed information on this will be published in our 2021 CR report.

Network access and digital responsibility

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

Demand for faster data services with full-coverage availability is growing continuously. Group-wide, we invested around EUR 18.0 billion primarily in building and operating networks, with around EUR 4.1 billion of this figure earmarked for the Germany operating segment alone. This is in addition to the investments that we make in acquiring mobile spectrum. Hence, the majority of the Group's investment volume in Germany is for the build-out of broadband networks. This build-out is based on the goals of our Europe-wide integrated network strategy, which we use to help achieve the EU Commission's network build-out targets and the Federal Government's Digital Agenda and broadband strategy. Founded on two pillars – building out mobile networks and rolling out optical fiber – our strategy sets out, among other elements, to upgrade our mobile networks with 4G/LTE technology so as to offer network coverage with fast mobile broadband. By the end of 2021, we already covered 99 % of German households with LTE. We also pushed ahead with the 5G build-out in Germany in 2021: by the end of the year, over 90 % of the population had access to the new technology. In more than 140 cities across Germany, 5G was available in the 3.6 GHz band at top speeds (as of the end of 2021). At the end of the reporting year, our fixed network provided around 36 million households with fiber-optic-based technology. We also pushed on with FTTH rollout in 2021, making fiber-optic lines available to around 1.2 million more households. In addition to the FTTH rollout, we are using other innovative products, such as our hybrid router, which combines the transmission bandwidths of fixed-network and mobile communications, thus attaining higher transmission speeds – particularly in rural areas.  

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

In general, we want to make our network infrastructure and our products as efficient, environmentally friendly, and harmless to health as possible. That is why we are committed to addressing the topic of mobile communications and health responsibly. In the context of the 5G build-out, there is public debate around the potential effects of 5G on health. We have been providing information on the scientific evidence regarding mobile communications and health for more than 20 years now. Together with Telefonía Deutschland, Vodafone, and Drillisch Netz, we also support the information platform www.informationszentrum-mobilfunk.de. This platform provides expert, evidence-based information on mobile communications topics subject to controversial public debate, such as health, research, technology, benefits, and applications. Among other initiatives, in 2021, the information platform worked with the three associations of local authorities to publish a new brochure on the topic of mobile communications and health. We adopted our Group-wide EMF Policy (EMF being short for “electro-magnetic fields”) back in 2004. It defines standard requirements – which considerably exceed the applicable national legal requirements – for addressing mobile communications and health-related matters.  

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

Responsibility for shaping the digital transformation has to be assumed by society as a whole. Our Board of Management plays an active role in this discussion, which entails looking at matters such as how we can use artificial intelligence (AI) responsibly. AI is a feature of an ever-growing number of ICT products and services that often goes unnoticed. It opens up opportunities, but also presents challenges. Back in 2018, under the auspices of Compliance Management, we were one of the first companies worldwide to adopt AI guidelines on digital ethics. These guidelines provide a framework for a responsible approach to AI. To supplement them, in 2021 we worked with experts to draw up professional ethics guidelines for all developers and product managers working with AI. The guidelines provide best practices, methods, and tips for transferring the Digital Ethics Guidelines on AI to application in development processes.

AI is used, for example, in a voice and chatbot offered by Telekom Deutschland's business customer sales unit in cooperation with technology partner Cognigy. We had this offering reviewed in 2021 according to the Federal Office for Information Security's Artificial Intelligence Cloud Service Compliance Criteria Catalogue (AIC4) in the form of an assurance engagement which confirmed compliance with the Federal Office for Information Security criteria. We were one of the first companies to conduct this assurance engagement. To ensure that in the supply chain, too, AI is developed that complies with our high ethical requirements, we expanded our Supplier Code of Conduct in 2020 to include relevant content from our AI Guidelines – here again, we are pioneers in the field.  

Connect the unconnected

To ensure equal participation for all in the information and knowledge society, the affordability of products and services is just as important as technical access. The ability to use digital media safely, responsibly, and to the benefit of all is becoming increasingly important. That is why we are working to build media literacy and democracy skills in the population. In doing so, we are guided by the aspiration embodied in our #TAKEPART campaign to keep everyone connected, namely that digital participation also includes participation in society.  

As one of Germany’s major corporate foundations, the Deutsche Telekom Foundation is dedicated to improving education in STEM subjects (science, technology, engineering, and mathematics) in the digital world. Since 2018, it has been supporting the initiative “The Future of STEM learning” and, together with five universities, developing concepts for good STEM teaching with digital media. In total, the Deutsche Telekom Foundation is investing EUR 1.6 million in this project. SDG 4 RELATIONSHIPS

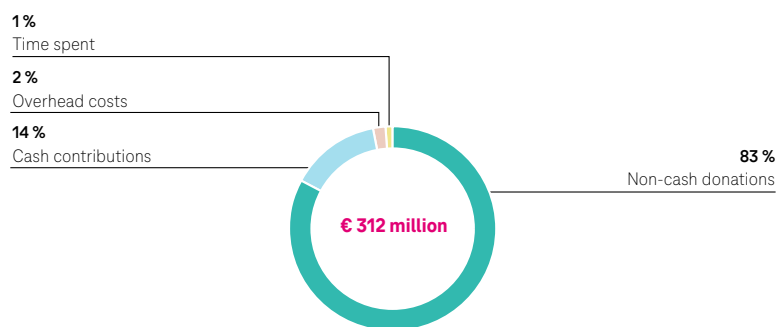
The individual national companies are responsible for implementing projects on digital participation. Examples include the youth promotion programs in Slovakia and the United States. Slovak Telekom’s national education program ENTER encourages digital education, while T-Mobile US’ Changemaker Challenge is a contest in which young people contribute ideas for better coexistence – in the categories technology, environment, and education. There was also an extra category for T-Mobile US employees and their families. A total of 16 projects were selected as winners. SDG 4 RELATIONSHIPS

All of our initiatives for greater media literacy in Germany can be found on the website “Media, sure! But secure,” where we provide information material for all target groups. Deutsche Telekom’s #TAKEPART stories – topics from the digital world for teenagers and young adults – are a practical take on digitalization issues of social relevance, translating them into a range of offers for multipliers. The aim is to raise awareness, highlight alternatives, and try out new behaviors. All modules of the #TAKEPART stories are also available in simplified German. Our multiple award-winning “Teachtoday” initiative promotes the safe and competent use of online media by children and young people. Since 2020, a toolbox has been available for multipliers and teachers. It comprises more than 120 formats that deal mainly with media literacy and democracy skills. They can be used without any specialist knowledge and have been designed for young people aged between 9 and 16. The initiative additionally publishes the interactive digital children’s magazine SCROLLER, which also provides material and background information to be used in media literacy lessons. SDG 4 RELATIONSHIPS

Together with Deutsche Telekom’s brand management, we launched the campaign #TAKEPART – No Hate Speech in 2020 and continued it throughout 2021. We also launched a new priority focus with the campaign Gaming – Where the Fun Ends. Gaming platforms are often a backdrop for hate speech and exclusion that aim to create rifts in society. Along with 44 partners such as the esports player foundation and the Amadeu Antonio Foundation, we are sending a message supporting more civil courage online and taking a stand in gaming. Thousands of people listened to our podcasts on this topic. Hate and gaming was also a topic of discussion at an international meeting of Deutsche Telekom managers and at the Equal Esports Festival. Since the campaign was launched in the second quarter of 2020, we have achieved a media reach of around 720 million contacts. We reached more than 3.8 million people directly or through multipliers such as parents and educators (e.g. in workshops). We have labeled the campaign #TAKEPART – No Hate Speech and our associated commitment with #GoodMagenta. We have also won a range of awards and prizes for the No Hate Speech campaign. The topic of data privacy is part and parcel of using digital media safely and securely. Our online guidebook [Digitally secure](#) offers practical advice on how to use digital media safely and securely. SDG 16 RELATIONSHIPS

We measure the impact of our Group’s social commitment with a set of three ESG KPIs. While in 2020, the focus of the KPIs was still media literacy, in 2021 we incorporated the aspect of digital participation as a key requirement of our CR and corporate strategy into new and/or revised KPIs. The Community Contribution ESG KPI maps our social commitment in terms of financial, human, and material resources. In 2021, this amounted to EUR 312 million. The new Reach ESG KPI shows the number of people we have reached with our communication on digital participation. In 2021, this figure was 968 million. The Beneficiaries ESG KPI shows the number of people who have benefited from our commitment to the issue of digital participation: in 2021 the figure was 28 million. The values of the 2021 ESG KPIs for the Deutsche Telekom Group in Germany were EUR 56 million (Community Contribution), 21 million people (Beneficiaries), and 873 million people (Reach). With the changes to the ESG KPIs as described above still in the process of being introduced from 2021, we do not yet have a Reach value for T-Mobile US.

Community Contribution ESG KPI



Data privacy and data security SDG 16 STRUCTURE

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

For further information, please refer to the section "[Risk and opportunity management](#)."

Our active data privacy and compliance culture, which has been built up over ten years, sets national and international standards. The data privacy-related compliance management system outlines the measures, processes, and audits we use to ensure compliance with laws, regulations, and voluntary commitments to uphold data privacy in the Group. Since 2009, the Group Board of Management has been advised by an independent Data Privacy Advisory Board comprising reputable experts from politics, the research community, business, and independent organizations.

Data privacy and data security are governed by the corresponding Group policies: the Binding Corporate Rules Privacy (BCRP) policy regulates how the Group treats personal data, while the Group Security Policy contains significant security-related principles valid within the Group, based on the international standards ISO 27001 and ISO 27701. These policies allow us to guarantee an adequately high and consistent level of data privacy and security throughout our entire Group.

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

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

Every two years, we perform a sample survey of data privacy and data security awareness across the Company. In the course of the Group Data Privacy Audit (GDPA), we survey 25,000 Deutsche Telekom employees on topics related to data privacy and data security. The results are used to calculate the Data Protection Award indicator – which quantifies the level of data protection in the units on a scale from 0 to 100 %. It is based on what the employees said they thought, did, and knew about data protection. The Data Protection Award indicator was last calculated in 2020 at 86 % (2018: 76 %), excluding T-Mobile US.

The focus of our Online Awareness Survey (OAS) is security awareness at the Company. The OAS surveys around 42,000 employees Group-wide (excluding T-Mobile US) across all levels of the hierarchy and provides data on security awareness. With academic support, we use the results from this survey to determine the Security Awareness Index (SAI). In the last survey in 2021, the index was 80.9 of a maximum of 100 points – higher than in any other benchmark company. We also have our processes and management systems as well as products and services certified by external, independent organizations such as TÜV, DQS, DEKRA, and auditing firms. The IT systems at Telekom Deutschland were most recently certified as secure in 2020 by the testing institute TÜV Informationstechnik (TÜViT) of the TÜV Nord Group.

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

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

We react to new emerging threats and continuously develop innovative processes for defending against attacks. And for good reason: cyberattacks on companies are becoming more aggressive and sophisticated across all industries. In the reporting period alone, we registered on average almost 52 million attacks per day on our honeypot systems. Of course, not all of the attacks picked up by our sensors are high-level threats. Most are automatic scanning tools seeking to exploit potential vulnerabilities. While these do not necessarily count as fully fledged attacks, they are still to be seen as relevant early-stage activities. In a shielded environment, Deutsche Telekom Security even develops its own malware and uses it to test whether new systems can reliably detect and mitigate attack vectors. In this way we ensure our own critical IT infrastructure is protected. We also offer other operators of critical infrastructure advisory services, for example energy providers.

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

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

 SDG 3  RELATIONSHIPS

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

 SDG 17  RELATIONSHIPS

Aspect 4: Respecting human rights

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

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

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

| For further information, please refer to the section “[Risk and opportunity management](#).”

As a responsible company, we have made an express commitment to upholding the UN Guiding Principles on Business and Human Rights adopted by the United Nations Human Rights Council in 2011 (Ruggie Principles). The obligation to respect human rights is anchored in our core regulations – i.e., our Guiding Principles and our Code of Human Rights & Social Principles policy statement, both of which have been approved by the Board of Management. This underscores our commitment to protecting human rights and to the goals of the German National Action Plan on Business and Human Rights adopted by the Federal Government in 2016. At the same time, the code embodies our commitment to complying with the principles laid down by the International Labour Organization (ILO), the Organisation for Economic Co-operation and Development (OECD), the Universal Declaration of Human Rights, and the UN Global Compact. In addition to these obligations, we also recognize the minimum social standards which, in line with the new EU Taxonomy Regulation, are necessary conditions for the taxonomy-alignment of economic activities. We are also in favor of the new Supply Chain Due Diligence Act (Lieferkettensorgfaltspflichtengesetz) in Germany. We have carried out regular human rights audits for years. In 2021, we analyzed these in regard to the new act and will adapt them accordingly in the future. We also require our suppliers to comply with all our guidelines related to human rights. Within the Group, the main focus of our attention is on preserving the right to collective agreements, and on ensuring diversity and equity.

| For further information, please refer to the sections “[Collaboration with employees’ representatives/trade unions](#)” and “[Diversity, equity and inclusion](#).”

| Detailed information on this will be published in our 2021 CR report.

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

We use two main instruments to review our Code of Human Rights & Social Principles in the Group: Firstly, we compile a central Human Rights & Social Performance Report each year. For 2021, all 111 of the companies surveyed declared in this report that they comply with the rules and principles of the Code of Human Rights & Social Principles. We additionally included five joint ventures in the survey for 2021. The report indicated no violations for 2021. Secondly, we have established a central point of contact for human rights issues, which can be reached via the email address “humanrights@telekom.de.” Further contact options and an anonymous whistleblower system are available on TellMe, our Group-wide whistleblower portal. We look into all tip-offs received and introduce countermeasures, provided the information is identified as plausible. In 2021, seven tip-offs relating to human rights were received via the point of contact and the whistleblower portal. Not all of these tip-offs were deemed plausible. Whenever necessary, we carry out review processes at our national companies to assess employer-employee relationships. To do so, we compile five human rights-related key performance indicators, such as employee satisfaction and the health rate, then assess these using a traffic light system.

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



In addition, we conduct an annual formal review of compliance with our Employee Relations Policy. In September 2021, an Employee Relations Policy review was conducted at OTE in Greece. After a review like this, the results are discussed with the regional managers in our national companies. If necessary, we agree measures such as a Human Rights Impact Assessment and Engagement – a process for estimating the actual and potential effects of business activities on human rights, as well as the ability of the organization to prevent, mitigate, or eliminate negative effects. In view of the coronavirus pandemic, we were unable to perform any further routine assessments abroad in 2021. The pandemic also prevented us from holding on-site training courses to raise awareness among managers and employees for human rights issues. Instead, we organized a Human Rights Risk Assessment at Group Headquarters in 2020, in the course of which we identified further Group-wide challenges as regards human rights; among other things, these will make it necessary to adjust individual policies and communications measures. The relevant measures, such as adapting our Code of Human Rights, are implemented on an ongoing basis. For example, in 2021 we set up a human rights working group and carried out a more in-depth review of the procurement process.


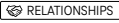
Our perception of ourselves as a company that acts in a socially and ecologically sustainable way includes assuming responsibility along our entire value chain. We have been working to improve sustainability throughout our supply chain for many years. Our strategy for sustainable procurement practices is embedded Group-wide in our procurement processes. The heads of the CR and Procurement units are jointly responsible for its implementation. On January 1, 2022, responsibility will be transferred directly to the department of the Chairman of the Board of Management. An escalation process calls for decisions to be made at Board of Management level in severe cases. The Sustainable Procurement Group, a working group that has had an international focus since the reporting year, supports our national and international procurement units in implementing the sustainability requirements. The aim is also to foster dialog among procurement employees. Our sustainability principles for procurement are set out in the Group’s Global Procurement Policy. The supplementary Procurement Practices provide specific guidelines for procurement in Germany and serve as templates for implementation in the different national companies. The section of the Procurement Practices covering sustainability gives purchasing officers an overview of the CR criteria that are to be taken into account in each stage of the procurement process. An e-learning tool is available to our employees throughout the Group providing training videos on the issue of sustainability in procurement.

Our suppliers must accept the principles of our Supplier Code of Conduct and meet the associated requirements. Nonetheless, we cannot guarantee that all of our suppliers are up to the standard. We review their compliance regularly to minimize risks and support suppliers in further developing their sustainability performance, working closely with them on these issues. Leading up to the supplier evaluation, we classify our categories as critical or non-critical based on risk and opportunity. We have defined 14 Corporate Social Responsibility (CSR) risk criteria and 4 CSR opportunity criteria on the basis of expert interviews.

For the supplier evaluation itself, we use a multi-stage approach: The Supplier Code of Conduct, for instance, is an integral part of all supplier agreements and binding for all of our suppliers. Ethical, social, and ecological principles as well as fundamental human rights are codified in this document. When selecting a supplier after issuing an invitation to tender, sustainability factors are given a weighting of 10 %. In addition, all new suppliers undergo a review by a company specializing in the analysis of published ESG risk data (excluding T-Mobile US). In this way, we can find out at an early stage if there is any increased risk with regard to specific sustainability criteria at any of our suppliers.

We are constantly working to enhance the social and ecological sustainability of our value chain. During the reporting year, we again carried out a dedicated process to review IT and network products on the basis of specific sustainability criteria, which we had already tried out in 2020 as part of a pilot project. On the basis of our findings, we worked with the telecommunications company Orange to draw up a harmonized set of criteria that was then piloted in selected invitations to tender for hardware products. As of 2022, these harmonized criteria are to be applied in all tenders for hardware products and have a weighting of 20 % when selecting suppliers.

Sustainability assessments and reviews are additionally conducted for selected suppliers of critical categories. Depending on their individual sustainability performance and risk classification, we use a range of instruments, for instance, the information system EcoVadis, mobile employee surveys, and on-site supplier audits (social audits). Our focus here is not only on our direct suppliers but also, wherever possible, on downstream suppliers. We increase the effectiveness of our audits through our cooperation with Joint Audit Cooperation (JAC), which currently consists of 17 telecommunications companies. In 2021, we completed a total of 88 social audits (71 audits and 17 mobile surveys) – 34 at our direct and 54 at our indirect suppliers. Since 2010, we have carried out 812 audits within the framework of the JAC.  

We work in close cooperation with our strategically important suppliers on improving their sustainability performance, for example, in terms of environmental protection, working hours regulations, and occupational health and safety. This is done primarily as part of the development program we initiated for suppliers. Since 2018, we have been implementing this program on the basis of a voluntary industry-wide approach known as the Sustainable Development Program (SDP). The SDP has been continued in the Joint Audit Cooperation (JAC) since 2021. Alongside Deutsche Telekom, which heads the project, Telefónica, Swisscom, and Orange are working together to refine the SDP on an ongoing basis in accordance with the JAC sustainability targets. In the reporting period, four further suppliers (two of Deutsche Telekom and two of Swisscom) were included in the SDP. Since the launch of the program in 2014, a total of 29 suppliers have completed the SDP, achieving measurable ecological, social, and economic progress. For example, one supplier was able to reduce energy consumption by 2.45 % and save 681.54 metric tons of CO₂e emissions. Another supplier has established regular employee satisfaction surveys, achieving a satisfaction rate of 80 % in the second half of 2021.  

Sustainability in procurement is measured based on the following ESG KPIs: the Procurement Volume Without CR Risk ESG KPI – for which the target is 95 % by 2025 – measures the procurement volume from direct business partners on whom an established external service provider carried out checks in the reporting period for negative reports in the media and found no irregularities. It also includes suppliers for whom irregularities were identified, but where corresponding corrective action was taken. The share of this procurement volume subjected to a risk assessment amounted to 99.7 % in 2021 (prior year: 99.6 %). The Procurement Volume Verified as Non-Critical ESG KPI – target for 2025: 60 % – by contrast, measures the share accounted for by suppliers checked for social and ecological criteria by means of dedicated reviews – e.g., through EcoVadis, the CDP, social audits, supplier visits, or our Supplier Development Program. In 2021, the share of these CR-verified suppliers was 60 % (prior year: 62 %). In each case, the calculation is based on the Group-wide procurement volume that is already uniformly mapped to a large extent (excluding the Network Capacity category and T-Mobile US), but on different levels of supplier relationships.

Detailed information on our supplier management system will be published in our 2021 CR report.

Aspect 5: Fighting corruption

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

Ethical business practices and compliance

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

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



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

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

We take many different actions and measures to prevent and fight corruption. Our compliance management system is based on the Compliance Risk Assessments (CRAs), which we use to identify and assess compliance risks and introduce suitable preventative measures. To this end, we have introduced a Group-wide process to be carried out annually. The companies that will take part in the CRAs are selected according to the level of maturity of their compliance management system (maturity-based model). In the reporting year, the CRAs included 112 entities (92 companies and 20 central units) and covered 98.1 % of the workforce (according to the headcount figures for the fully consolidated companies and central units). The individual Group companies are responsible for conducting the CRA, with support and advice given from the central compliance organization. We have our compliance management system reviewed, with particular attention paid to anti-corruption measures. In 2020, initially nine German companies were examined. A further 13 international companies were then assessed in 2021. A total of 22 companies were thus successfully reviewed in the two-year period 2020/2021. Like in 2020, the review during the reporting year focused on business processes that are subject to an increased risk of corruption, such as procurement, sales, events, donations, sponsoring, M&A, and HR.

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

Despite all precautions, we are not always able to prevent breaches of law or violations of regulations at the Company. The TellMe whistleblower portal is available to employees and external parties for reporting breaches or suspected breaches of the law or of internal policies and regulations. In 2021, 87 compliance-related tip-offs were submitted via the TellMe portal (prior year: 113 tip-offs). Over the course of the year, 47 of these were confirmed to be cases of misconduct and dealt with accordingly. Within the scope of the legal framework available to us, we systematically pursue all tip-offs, including those that reach us via other channels, and implement commensurate sanctions in compliance with the relevant statutory provisions. We have introduced a Group-wide reporting process to control and monitor these activities.

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

Employees

Supporting people. Driving performance.

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

Our priorities in 2021



1. Support our employees through crisis situations
2. Evolve our culture and design new working environments
3. Continue the long-term transformation of our workforce

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

Our HR work based on the priorities



1. Support our employees through crisis situations


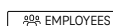
As a critical infrastructure company, Deutsche Telekom makes an important contribution to society through the reliable provision and restoration of telecommunications services. This holds particularly true in respect of the restoration of telecommunications infrastructure following the occurrence of natural disasters and crisis situations, such as the catastrophic flooding experienced across North Rhine-Westphalia and Rhineland-Palatinate in July 2021, the devastating wildfires in Greece in August 2021, as well as the maintenance of operational capability in all of our national entities during the coronavirus pandemic. Crisis situations like these call for special measures aimed at maintaining our operational capability and at protecting Deutsche Telekom employees. The Group-wide measures described below were taken in collaboration with the Group Situation Center to prevent the spread of the pandemic, inform the workforce, and intervene where necessary. The Group Situation Center forms part of Deutsche Telekom's system for managing security incidents. It is responsible for coordinating, managing, and monitoring the measures taken to tackle acute threats; it reviews and evaluates the available information, and implements countermeasures – either directly, for example, as part of Deutsche Telekom Security's master incident management system, or by delegating responsibility to employees or units with the relevant expertise.

Coronavirus pandemic.   We have been acting with the utmost care since the start of the pandemic, using every means available to protect our customers' and employees' health. Our hygiene plan undergoes ongoing revision in consultation with virologists to keep it in line with the latest developments. It contains measures ranging from reduced room occupancy and the obligation to wear a medical mask, through the provision of disinfectant and masks, to the option to work from home. In addition, we provide rapid antigen self-tests free of charge to colleagues working on site in Germany and other European countries, such as Poland and Slovakia.



In Germany, Deutsche Telekom has applied the "3G rule," which was adopted by the federal government and the states and under which only people who are vaccinated, recovered, or tested have access to the workplace since the legal regulation entered into force in November 2021. Employees must provide the required proof before they can enter the workplace. This is checked and documented by our managers. To enable our employees to submit their proof to the relevant manager immediately, Deutsche Telekom developed an app which combines a validation service developed by T-Systems International, our tried-and-tested employee app, and the access management system. The app was piloted in December 2021, followed by the start of the rollout in January 2022. The various national companies also have access rules in place. In Austria, the 3G rule also applies, and in the United States, it's 1G, which means all employees must be vaccinated.

In many of our international companies, including in Croatia, Poland, and Austria, we have been offering support in the form of vaccination campaigns for employees. During our first vaccination campaign, which ran from June to September 2021, for example, we provided employees and their family members with the COVID-19 vaccination on 87 different sites, 18 of which were exclusive Deutsche Telekom vaccination centers. A total of 45,500 appointments were arranged for first, second, and mix-and-match vaccinations. From December 2021, employees were also offered booster vaccinations.

We were for the most part able to stop the spread of the coronavirus within the Group by providing all relevant contacts at the local organizations with a daily briefing from the Group Situation Center, reporting all suspected and actual cases of illness to the latter, and putting in place a process to intervene in confirmed cases. We continued our constant efforts to inform and protect all our employees and establish rules of conduct with a personal Coronavirus Update newsletter issued by our Board of Management member for Human Resources and Legal Affairs. We also made use of our extensive network with other DAX-listed companies and the scientific community to continually refine our best practices and share them with other companies. Above and beyond this, our national companies took action to offer localized support. For example, we offered all our employees in Germany a regular opportunity to chat online via live stream with a virologist and hygiene expert from the University of Bonn. This live chat option not only provided participants with a rundown of the current situation, but also covered key topics, gave recommendations on how to behave, provided answers to employees' questions, and dealt with the consequences of the "new normal!" for working life at Deutsche Telekom.  

Catastrophic flooding.   July of the reporting year saw very extreme weather in parts of Germany. A number of cities and communities in the federal states of Rhineland-Palatinate and North Rhine-Westphalia were among those hit particularly hard. Torrential rain meant whole villages were flooded, destroying large sections of the local infrastructure. In addition to restoring the technical infrastructure, Deutsche Telekom also showed solidarity with the people concerned: our 1,319 employees who were affected could apply for paid release from work and were also given up to 5 days of paid special leave. Moreover, our welfare service (Betreuungswerk) offered emergency aid of EUR 500 per family member to the employees affected. Accommodation and furniture were also provided.

Those of our employees who were not affected also showed considerable solidarity: 250 volunteers provided support on the ground at all hours, having also been released from their duties with pay by Deutsche Telekom. 2,000 employees volunteered to collect donations during the SAT.1 fundraising gala. In addition to donations from the Company to charities such as Aktion Lichtblicke e.V. and Aktion Deutschland Hilft e.V., more than 500 colleagues also donated to our welfare service.

Employee health.   Our health management strategy is designed to maintain our employees' health and performance. We view occupational health and safety legislation as minimum requirements. Our corporate culture encourages our employees to take responsibility for their own health. The steps we took to promote employee health, including anti-infection precautions, contributed to a further improvement in the health rate in 2021, continuing the upward trend from 2020. After Deutsche Telekom AG won the Corporate Health Award, for which companies can apply every two years, in 2020, other international Deutsche Telekom subsidiaries followed with awards in the field of health and safety during the reporting year: T-Mobile US, for example, became the first mobile communications company to earn the WELL Health-Safety Rating. Above and beyond that, we supported our employees and managers by providing them with virtual formats on topics such as leadership, remote collaboration, and resilience (for instance, the online seminar "Starke Psyche (A strong psyche)") and by setting up additional IT support channels and a helpline for dealing with psychological problems.

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

Employee satisfaction. Our commitment score, which is our measure of employee satisfaction, is calculated from data collected by the Group-wide (excluding T-Mobile US) employee survey conducted every two years. The questionnaire and the measurement model were reviewed in the context of the 2021 employee survey and were updated based on feedback and the latest research findings. As part of this process, we changed the scale used for the commitment score (formerly the "commitment index") to 1 to 100, instead of the 1 to 5 we had previously used. Since the 2021 employee survey, the questions used to calculate the commitment score are now based on the categories of Mood, Employer Attractiveness, Brand Identity, and Inspiration. The 2021 employee survey showed a high commitment level of 77 points. The survey, which we carried out in November 2021, saw a participation rate of 80 %. The results in numerous areas, such as Goals (92 %), Strengths (88 %), Purpose (86 %), Digital Collaboration (86 %), and Information (86 %), were the highest ever. The question on Mood is comparable to the earlier question on Satisfaction and is at a very high level of 80 %. To allow for qualitative answers, the survey included a free-text box for the first time in which employees could suggest things that would reinforce their commitment to their work. We also conduct pulse surveys twice per year to obtain feedback from our employees. Several initiatives are in place to further enhance employee satisfaction.

T-Mobile US carried out separate employee surveys in January, June, and October of 2021. Changes were made to the employee survey in the reporting year to address a broader range of cultural aspects, so as to create an employee survey that spans the full spectrum of issues. Of T-Mobile US' over 75,000-strong workforce, 39,000 took part in the most recent employee survey, held in October 2021. The results show the high level of employee satisfaction there: 86 % of employees say their own team creates an inclusive working environment that is accepted by all colleagues. 83 % are proud to work for the company. 80 % would recommend T-Mobile US to others as an attractive employer. This is further borne out by the numerous accolades awarded to T-Mobile US over the last few years for its attractiveness as an employer. Like last year, the company was once again on the Forbes list of America's Best Employers. T-Mobile US won not one but four HR awards from Comparably: in the categories Best Company Perks & Benefits, Best Company Leadership, Best Places to Work in Seattle, and Best Company Leadership Teams. T-Mobile US is number 51 in the Fortune 100 list of Best Companies to Work For. T-Mobile US also scored 100 in the Human Rights Campaign's Corporate Equality Index for the ninth time in a row, making it the best place to work in terms of equal treatment of lesbian, gay, bisexual, and transgender people.

2. Evolve our culture and design new working environments

We are convinced that corporate culture is a key factor in a company's long-term success. Building on the strong foundation of our Guiding Principles, corporate culture must also reflect the changing needs of customers and employees. For this reason, we understand culture to be a constantly evolving process. At Deutsche Telekom, we talk about "living culture." Our purpose statement "We won't stop until everyone is connected," announced in January 2020, serves to guide all of our corporate efforts. In times of physical distancing in society and in our Company, we are constantly reminded of the importance of this shared identity.

Our Guiding Principles. We consider culture to be part of the corporate DNA. Our Guiding Principles act as our compass, leading us to reflect on our behavior on a daily basis and helping us to make the right decisions. Each year, we focus on our Guiding Principles during Living Culture Day and the Telekom Team Award. In 2021, we held our first hybrid Living Culture Day event, with the slogan "Passion for the Future." More than 20 countries took part, with over 5,000 participants watching the live stream of the event. There was a strong social media presence, with 17,000 posts, comments, and likes on both internal and external networks. The Telekom Team Award is an international intragroup award with six categories, one for each of our Guiding Principles, aimed at recognizing outstanding performance as a team. In 2021, a total of 18 winning teams were chosen from among 272 entries from 19 countries. In November and December, some 14,000 employees around the world used an online tool to vote on the final order of the winners.

Our six Guiding Principles



DELIGHT OUR CUSTOMERS



GET THINGS DONE



ACT WITH RESPECT & INTEGRITY



TEAM TOGETHER – TEAM APART



I AM T – COUNT ON ME



STAY CURIOUS & GROW

Practicing diversity. We support a work environment in which all employees can achieve their full potential. Promoting diversity, equity, and inclusion in terms of gender, age, and cultural identity is intrinsic to how we see ourselves. We firmly believe that this also increases our corporate success, because we consider diverse teams to be a driver of innovation. Our goal of increasing the percentage of women in management positions to 30 % across the Group (excluding T-Mobile US) by 2025 still applies. With women occupying 45 % of positions on the Supervisory Board and 37.5 % of positions on the Board of Management of Deutsche Telekom AG, we have already exceeded this target in these boards. Across the Group, the proportion of women in middle and upper management stood at 27.3 % at the end of 2021. To ensure we also reach our target in these management levels, we have worked with the different business segments to draw up concrete implementation plans (excluding T-Mobile US). Specific measures are to be agreed aimed at increasing diversity in management teams regarding gender, age, and the international dimension on the basis of the starting point of the segment in question. T-Mobile US is equally committed to maintaining and further enhancing the diversity of its workforce in terms of gender, age, and internationality.

We have a range of measures and products in place to support and monitor our efforts to increase diversity in the Company. Continually refining and implementing these measures and products promotes diversity in the Group. Among other actions, a revised Group Policy on Diversity, Equity and Inclusion (DE&I) was implemented globally in the reporting year. The policy is intended as a binding written commitment that will ensure our values are reflected in every decision and action at every level of the Group. The launch of the new policy is accompanied by a broad-based communication campaign – Connected as One. The campaign focuses on individual differences while emphasizing that we are nonetheless united when it comes to promoting diversity, equal opportunities, and inclusion in every sense. T-Mobile US, too, demonstrates its commitment to diversity with a range of initiatives, including the Women & Allies Network (WAN), Women in Tech, and the McKinsey Black Leadership Program.



The successful launch of the Talent Hub in 2021 promotes the targeted placing of talents within our succession management process, ensuring diversity in all aspects, e.g., gender, age, and cultural background. We also raise employee awareness through tailored training courses on topics such as hidden prejudices, racism, and transgender issues, and we encourage employees to reflect on these.

New Work. Also in this year, the coronavirus pandemic was key to shaping the way we work together. The related guardrails adopted by the Board of Management in 2020 proved effective once again in the reporting year:

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

Deutsche Telekom has no centralized provisions or one-size-fits-all solutions, as the nature of work differs greatly throughout our Company. It is up to our managers to shape the new way of working with their teams.


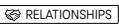
We successfully built on our experience in recent months and put proactive measures in place that have been reflected, once again, in extremely high employee satisfaction and a consistently high level of employer attractiveness. We were able to implement the guardrails step by step: we pressed forward with making our offices places of encounter and identification, while at the same time introducing Group-wide collaboration tools, simplifying and optimizing hybrid cooperation. In agreement with the Group Works Council, we are currently running a pilot project in Germany on working close to home, aimed at testing another instrument to increase workplace flexibility. We made good use of the time between the periods when government recommended to work from home to hold a variety of events with our customers, business partners, and employees, strengthening relationships and giving new momentum to creativity.

Shares2You.   Deutsche Telekom AG launched the employee share program Shares2You in 2021. Through the program, once per year employees can acquire shares in Deutsche Telekom AG up to an amount of EUR 1,000. For every two shares they purchase, they receive another share at no cost. All shares acquired in this way must be kept for a minimum of four years. The program was launched in 2021 in the participating German Group companies, and is to be extended step by step in the coming years to Group companies outside of Germany. In the reporting year, 36,290 employees took advantage of the program. A total of 3,055,071 shares were transferred in this way from Deutsche Telekom AG to these participants.

3. Continue the long-term transformation of our workforce

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

Major transformation initiatives. In the reporting year, we again succeeded in transforming individual business areas of the Group, e.g., DT IT, T-Systems, and the business customer and service units at Telekom Deutschland. Restructuring is being implemented in a socially responsible manner. To support our managers, we focused strongly on offering training courses in 2021 aimed at building skills in leadership during change processes.

Systematic skills development.   Our employees' in-depth expertise and forward-looking skills are among our Company's most important resources and are thus crucial to our business success. Deutsche Telekom values future-proof digital skills particularly highly: by 2024, the Group's need for digital experts will increase to 17 %. It is therefore up to us to provide an environment in which employee skills can be transformed. With the introduction of the Global Job Architecture (GJA) and specific Group works agreements on strategic qualitative personnel planning (SQP) and on skill management, the trade union ver.di, the Group Works Council, and Deutsche Telekom have worked together to lay the foundations for the necessary skills transformation. The GJA simplifies existing function structures and consolidates them in future-proof job profiles. Our SQP takes changing market conditions into account to plot the right course for targeted investment in the skills that will be needed going forward. Personal development meetings in conjunction with a digital tool help pinpoint where individual skills are lacking, while development plans can be continuously adapted by means of tailored training programs. Around 30,000 employees successfully went through the skill management process in 2021. "We grow," our modern performance management system that enables ongoing dialog between managers and employees, also focuses on our employees' individual development. This combination of strategic HR instruments – job architecture, strategic personnel planning, and the identification of personal training needs – forms the basis for targeted upskilling/reskilling for our employees.

Upskilling and reskilling programs with a focus on digital skills.   With the goal of equipping as many employees as possible with the skills that will be needed in the future and guaranteeing their employability in the best way possible, we offered more "Explorer journeys" again in 2021, programs which address specific innovation topics. Around 6,000 employees signed up in 2021 for multiple-week digital training programs on topics such as big data, digital marketing, artificial intelligence, and software development. We also instated academies with the aim of offering both reskilling and large-scale upskilling for digital experts, e.g., in the fields of software engineering, DevOps, artificial intelligence, and data analytics. In our Technology and Innovation unit alone, 1,650 employees completed specialized training in 2021 – alongside the many other standard training measures we continue to offer year after year.



Learning initiatives and offerings. Developing skills for the future and reinforcing our learning culture are top priorities for us, and are reflected in our Guiding Principle “Stay curious and grow.” With our Youlearn initiative – aimed at entrenching self-paced learning in our everyday working life – we have significantly enhanced our employees’ options for upgrading their skills. Employees in Germany and our European national companies devoted almost 4 million hours of their time to learning in the reporting year – that was 4.6 working days per employee, on average. After a decrease in learning hours in 2020 (caused by the lack of in-person courses due to the coronavirus restrictions), 83 % of the Group’s learning portfolio was systematically moved online in 2021 (excluding T-Mobile US). Deutsche Telekom has established a high-quality training service for employees by rolling out Percipio, an intelligent learning platform also dubbed the “Netflix of learning,” and integrating Coursera as a provider of digital further-training courses offered by top-ranking universities. The more than 180,000 Percipio registrations since the third quarter of 2019 show that our efforts have been worthwhile. The employee initiative Learning from Experts (LEX), launched in 2018, is another model of autonomous, self-organized and digital learning, in which experts from the Group pass on their knowledge to colleagues via different channels. The highlight are open digital courses known as LEX sessions. More than 5,000 options had been made available with this type of content at the end of 2021, with 140,000 colleagues having taken part. Today, with 20,000 active members, LEX is the fastest-growing community in the Group. Acceptance of digital learning has thus become stronger, as is reflected in the increase in the digital learning rate to 90 % and a rise in satisfaction with learning offerings (+4 %) compared with 2020. The Top Learner Award for outstanding commitment to learning was awarded for the first time in 2021, with four employees receiving the award. Youlearn Day, a day of digital learning for all employees, reached a new participation record in comparison with the previous year, with some 5,000 registered participants from 30 countries. Employees of T-Mobile US completed 5.4 million hours of learning via a learning management tool. In addition, the Magenta University at T-Mobile US acts as a central support hub, empowering employees to make the most of their abilities, take advantage of career opportunities, expand their leadership skills, and strengthen their commitment to diversity, equity, and inclusion.

Recruiting and onboarding. We want to shape the digital world of tomorrow. Even amid the ongoing coronavirus pandemic, we succeeded in recruiting around 8,280 new employees across the Group (excluding T-Mobile US). T-Mobile US recruited over 16,000 new employees in 2021. Given the growing prominence of technical and IT profiles in the international labor market, we closely orient our employer marketing activities to these highly relevant areas. We welcomed 2,076 new trainees and dual students in Germany, a high percentage of whom in the area of technology/IT. In 2021, Capital magazine validated our keen efforts to advance young employees working at our Company and offer them opportunities for success by ranking us “Germany’s best training provider” in the categories “Vocational training” and “Dual studies.” Our entire recruitment strategy is digital, but at the same time with a personal touch. Our international [careers website](#) is a platform offering job-seekers transparent information, for example introducing employees and providing a glimpse into the world of work. It also facilitates digital recruitment and supports international standards in our selection processes (e.g., virtual job interviews and assessment centers). Notwithstanding the digital transformation, we still value direct and personal contact, so we continue to attend careers fairs, networking sessions, and other events. By addressing specific target groups, our recruiting strategy also aims to encourage more talented women to join our Company. 2020 marked the eighth time that female students of STEM subjects (science, technology, engineering, mathematics) from all over the world were able to compete for our Women’s STEM Award. We are also involved in Femtec, a career program for female STEM students, and in the Global Digital Women network. We have shown that digital recruitment is a crucial success factor when it comes to responding rapidly to changing requirements and continuing to secure employees with critical profiles for the Company.

Particularly during the pandemic, we relied on our motto “Stronger together” to reinvent our onboarding process at international level. We now use an onboarding app so that new employees can get to know Deutsche Telekom before their first day on the job and can benefit from the best possible onboarding experience to prepare them for their tasks when they start work. This includes introductions to the tools they will use, to Deutsche Telekom’s strategy, and to the training options available (excluding T-Mobile US). The onboarding app also helps managers with the onboarding process, for example by providing checklists. In the context of this process, we held a virtual global welcome event for our new employees, the “New Unstoppables,” in May and November 2021, with 689 new employees in attendance (excluding T-Mobile US).

In the second half of 2021, T-Mobile US introduced its new Being Un-carrier onboarding program for back-office employees to offer new employees a consistent experience across the board. Prior to this, the approaches to onboarding had differed in each business segment. A company-wide platform was created to centralize the suggested onboarding activities and make them available to all employees and their managers to use as needed. Two-part virtual live and interactive orientation sessions are offered on a weekly basis as an opportunity for back-office employees to get to know other colleagues from outside their team.

Employer brand. Digitalization, automation, scope for development, new ways of working, and self-realization are priorities for applicants, shaping the way they look for jobs. Job security and a flexible working environment that allows for a good balance between personal and professional challenges are key criteria when selecting a future employer. In the IT & Tech industry in particular, the “war for talent” grew fiercer, with these target groups more sought after than ever. Our recruitment communication addressed our target groups’ needs at an early stage to strengthen our employer brand, advertising Deutsche Telekom’s digital application processes, agile workflows, flexible working, and working-from-home options. Another key component of our communication is to personally address the talents and to create a sense of community and proximity in a digital world, because the notion of belonging is front and center in 2021. Our new employer campaign “We are IT!” shines a spotlight on the people behind the IT-specific jobs with their wide-ranging interests. By means of a unique external and internal IT survey we examined what is important to IT professionals outside of and within Deutsche Telekom, and what brings them together. We use target group-specific messages, authentic communication, and a finely tuned content strategy to remind IT experts of what technology means to them and what opportunities exist for them at Deutsche Telekom. A strong employer brand pays off: in the reporting year, Magenta Telekom in Austria was awarded the Leading Employer Award, among other things.

Offerings for managers.   In the age of digitalization, managers must possess skills and methods that differ greatly from those needed in the analog world. That is why, since the start of the reporting year, we have been supporting not just our executives with levelUP!, an innovative digital further-training service; but we have extended the offering of training for successful leadership in the digital age to all managers worldwide. levelUP! comprises modules that can be combined as required. Knowledge is shared primarily via interactive, digital learning formats in combination with classroom training. levelUP! is also the central information hub for intragroup and segment-specific leadership topics. Training offered in 2021 included modules on Leading in Transformation and Leading into the Future. The success of this new approach is reflected in both user numbers and satisfaction, with a record figure of 1,300 managers using levelUP!. A satisfaction index of 8.7 shows the very high level of acceptance of the program.

Following the success of the levelUP!NextGeneration program in the previous year, we offered the program again in digital format in 2021: 500 employees worldwide, from 45 companies and 18 countries, took part in this four-month development program, which features digital learning and imparts innovative, inspiring, and concrete leadership topics and skills such as ambidexterity, mindfulness, and agility. Optional modules chosen by the individual help meet development needs. levelUP!NextGeneration also helps us strengthen and encourage intragroup and cross-segment collaboration.

We value highly an environment in which our managers feel part of a leadership team. This drives us to invest not only in the transfer of skills and the teaching of methodologies, but also in strengthening our leadership communities. In summer 2021, we seized the opportunity to deliberately return to an in-person approach. Over a period of just under one week in July, our 47 business leaders joined the Board of Management on a learning journey in Estonia. The focal topic was digitalization and the event offered all participants a platform for dialog with established companies, start-ups, and government authorities. For our Telekom Transformation Team (T3), which is made up of almost 250 managers and top talents, the central topic for 2021 was courage, especially in transformation processes. The joint T3 event took place in Croatia in summer.

T-Mobile US has a range of career and leadership development programs in place to support employees with defining career success on their own terms and achieving their career goals. They are supported by a portfolio spanning coaching, self-study courses, and other development programs (including CareerTraX and Magenta9).

Headcount development

The Group’s headcount fell by 4.3 % compared with the end of the prior year. The number of employees in our Germany operating segment decreased by 9.3 % against year-end 2020, mainly as a result of the reassignment of employees to the Group Headquarters & Group Services segment in connection with reorganization measures at Deutsche Telekom IT. Employees also continued to take up socially responsible instruments as part of staff restructuring activities, such as dedicated retirement and phased retirement. The total number of employees in our United States operating segment remained stable compared with December 31, 2020. In our Europe operating segment, the headcount was down 14.4 % compared with the end of the prior year, with staff levels decreasing in Romania in particular, mainly due to the sale of the fixed-network business. The headcount in our Systems Solutions operating segment was down 1.2 % against year-end 2020. The effect on headcount of our global efficiency enhancement measures was offset by increased staff requirements in our growth areas. The decline in numbers was due to the sale of a business operation and the reassignment of parts of the business within the Group (-2.0 %). The takeover of external service providers in Mexico had an offsetting effect (+0.9 %). In the Group Development operating segment, the headcount remained at the 2020 year-end level. The number of employees in the Group Headquarters & Group Services segment was up 17.6 % compared with the end of 2020, mainly due to the aforementioned reassignment of employees from the Germany operating segment.

Workforce statistics

Headcount development

	Dec. 31, 2021	Dec. 31, 2020	Change	Change %	Dec. 31, 2019
FTEs in the Group	216,528	226,291	(9,763)	(4.3)	210,533
Of which: Deutsche Telekom AG	13,897	15,374	(1,477)	(9.6)	17,461
Of which: civil servants (in Germany, with an active service relationship)	9,653	10,583	(930)	(8.8)	12,153
Germany operating segment ^a	60,189	66,348	(6,159)	(9.3)	69,117
United States operating segment	71,094	71,303	(209)	(0.3)	47,312
Europe operating segment	35,319	41,272	(5,953)	(14.4)	44,410
Systems Solutions operating segment	27,754	28,098	(344)	(1.2)	29,800
Group Development operating segment	2,674	2,684	(10)	(0.4)	2,603
Group Headquarters & Group Services ^a	19,498	16,585	2,913	17.6	17,292
Breakdown by geographic area					
Germany	85,160	89,032	(3,872)	(4.3)	94,111
International	131,368	137,258	(5,890)	(4.3)	116,422
Of which: other EU member states	50,005	55,816	(5,811)	(10.4)	58,743
Of which: rest of Europe	2,066	2,168	(102)	(4.7)	2,055
Of which: North America	71,337	71,617	(280)	(0.4)	47,652
Of which: rest of world	7,960	7,658	302	3.9	7,971
Natural attrition	% 5.2	% 3.9	% 1.3	% 33.3	% 5.3
Of which: Germany	% 2.1	% 2.0	% 0.1	% 6.1	% 2.3
Of which: international	% 9.3	% 6.6	% 2.7	% 40.9	% 9.5
Productivity trend^b					
Net revenue per employee	thousands of € 493	452	41	9.1	378

^a As part of reorganization measures at Deutsche Telekom IT, around 3.7 thousand employees were reassigned from the Germany operating segment to the Technology and Innovation unit in the Group Headquarters & Group Services segment effective January 1, 2021. Prior-year comparatives were not adjusted.

^b Based on the average number of employees.

Personnel costs

millions of €	2021	2020	Change	Change %	2019
Personnel costs in the Group	18,463	18,853	(390)	(2.1)	16,723
Of which: Germany	8,461	8,764	(303)	(3.5)	8,699
Of which: international	10,002	10,089	(87)	(0.9)	8,024
Special factors ^a	906	1,836	(930)	(50.7)	1,037
Personnel costs in the Group (adjusted for special factors)	17,556	17,017	539	3.2	15,686
Net revenue	108,794	100,999	7,795	7.7	80,531
Adjusted personnel cost ratio	% 16.1	% 16.8	% (115)	% (5.0)	% 19.5
Personnel costs at Deutsche Telekom AG under German GAAP	2,176	2,291	(115)	(5.0)	2,326

^a Expenses for staff-related measures.

Technology and innovation

T&I strategy: digital transformation and human centricity

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

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

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

- **Delivery Innovation:** Technology and Innovation is a supplier and service provider for the Group. As such, it is particularly important that we consistently meet our obligations. That means conscientiously delivering our services, leveraging the synergies offered by centralized production, and working cost efficiently. At the same time, we can also shape the future, e.g., by promoting agile working methods to make our production future-proof.
- **Experience Innovation:** We are Deutsche Telekom's central innovation unit. Constantly pursuing innovations that benefit our customers, the Group, and all other stakeholders is our task and our obligation – but we also consider it an expression of the freedom we enjoy. Our technological innovations form the underpinnings for this. We work in close cooperation with the segments and with external partner companies in order to meet our customers' requirements and to create the innovations this calls for.
- **Capability Innovation:** Continuing to turn Deutsche Telekom into a software-based company entails transforming our capabilities on an ongoing basis. We want to recognize the need for future changes in our Company and to be able to handle them as they arise. Changes become entrenched especially when accompanied by cultural innovation in the shape of skills transformation and the systematic retraining and further training of our employees as software engineers, AI experts, and network architects. By the end of 2021, we had given 1,650 of our employees intensive training in topics relevant for the future, such as software development, artificial intelligence (AI), cloud technologies, and agile methods, in 15 Skill Academies.

Innovation priorities

Innovations can be produced everywhere. That is why it is important to ensure we pursue our innovation activities at an intragroup level and that they are aligned with our strategy. Our interconnected innovation areas provide a holistic, Group-wide framework for this. In the reporting year, we continued to hone our innovation priorities in close coordination with the operating segments, building on our activities in 2020:

- **Connectivity:** We are developing our router operating system for the digital future – with enhanced cloud-based connectivity management and service quality, a superior customer experience and standardized operation via app, PC, or television, and value-added applications such as child protection functions, home security, predictive maintenance, and troubleshooting. This new router generation is based on a globally scalable reference system (Reference Design Kit, RDK), which we are constantly fine-tuning together with other leading telecommunications providers. We began an initial, very promising pilot for beta users in Hungary in the reporting year, and are planning the market launch there for 2022, alongside further applications and prototypes in Germany, Croatia, Greece, and North Macedonia. A core element of connectivity management is the home-network check software feature, which was introduced in 2021 both in service apps in Germany such as MeinMagenta and via the TV interface, and which provides for new, context-based customer interaction to optimize service and troubleshoot problems in home networks.
- **Smart home:** We began cloudifying our smart home offerings in 2019 and continue to refine them, with the aim of making the ecosystem future-proof. A key component is the cloud-based MagentaZuhause app, which was launched in September 2021 for beta users. The app integrates every connected household device and enables personalized use by every member of the household. The focus is on developing software-based entry-level applications for users of a suitable Deutsche Telekom router.
- **Service orchestration in the connected home:** We want to improve the customer experience at home by ensuring the easy, seamless, uniform, uncomplicated interaction of all Deutsche Telekom's services and devices, and by enabling services from selected partners. We are doing this on the basis of the Magenta HomeOS orchestration platform, which has been developed by Deutsche Telekom. The platform bundles our various services, creating unique customer experiences. The MagentaZuhause TV app, which was launched on the market in December 2021, is the first customer touchpoint to use the HomeOS platform. The app, which combines television, smart home, router management, MagentaCloud, and voice control, is available to more than 3.5 million households in Germany. The launch of the MagentaZuhause mobile app is planned for February 2022.
- **Magenta Voice:** With smart voice control (also known as voicification), we want to further enhance the way our customers experience our services, and to simplify interaction with technology and devices. To achieve this, we are constantly evolving our voice platform, winning over new partners, and integrating voice control into numerous additional products and services such as television, smart home, and the MeinMagenta app, with the aim of offering our customers a comprehensive convergent application space. Ongoing functionality enhancements have resulted in rising customer usage and satisfaction levels. In parallel, we are pushing forward with B2B solutions. Some examples of this are a scheduling assistant for business customers and voice recognition for authentication and personalization.

- **Campus networks:** Campus networks for corporate customers are one of the core applications for 5G technology. Campus networks combine dedicated mobile connectivity with edge computing and integrated digital applications from the fields of production, automation, and logistics, enhancing options to automate production and achieve stability and flexibility in industry. In the reporting year, we rounded out our campus portfolio with standalone and hybrid solutions, and attracted further key anchor customers. In the reporting year, Deutsche Telekom was named best mobile network operator for 5G enterprise offerings from among 20 telecommunications providers listed in an international study published by ABI Research. 5G-supported positioning solutions in production, which can log and locate factory objects and autonomous devices in real time using ultra-wideband (UWB) technology with a precision of up to 30 cm, are additional vertical solutions that complement campus networks.
- **Network differentiation:** In this innovation program, we are working on developments to disaggregate, cloudify, and automate our network production. This new approach will both improve customer experience considerably and increase flexibility and scalability, while simultaneously lowering costs. We will achieve this with software solutions for automated analysis and with error correction based on artificial intelligence and machine learning, among other things. In addition, our multi-vendor strategy serves to strengthen our independence from individual suppliers and enables us to maintain our technology leadership. We are also opening up new options for direct monetization of the network, for example through network APIs. Leading network operators have joined forces in the O-RAN Alliance to pursue a standard for a vendor-agnostic, modular, Open Radio Access Network and to work with other partners to develop the associated hardware and software components. In the reporting year, Deutsche Telekom successfully brought online Europe's first model network for Open RAN, including massive Multiple Input Multiple Output (MIMO), in Neubrandenburg, Germany. In the Open Test & Integration Center (OTIC) in Berlin, start-ups, suppliers, operators, and systems integrators can test out how new components interact with mobile networks.
- **Standalone 5G:** Up to now, Deutsche Telekom has used 5G non-standalone (5G NSA) in which the existing 4G network continues to provide the technical backbone. True to its role as a technology leader, in the reporting year Deutsche Telekom commissioned its first site for 5G standalone (5G SA) in Garching, near Munich, Germany. The 5G radio access network is integrated with the new 5G core network at the location. This core network is the source of the crucial innovations and benefits, because it removes the need for terminal devices to connect to the 4G and 5G networks in parallel. The 5G core network is based on cloudified, virtualized hardware and software, which will enable new applications such as network slicing. Network slices are discrete logical networks with individual, application-specific characteristics such as bandwidth, latency or capacity, which are created on the same shared physical infrastructure. They allow applications always to be made available specifically for the appropriate (virtual) network, thus improving the customer experience. Network slices could therefore be used, for example, for applications where bandwidth and latency are critical, such as augmented/virtual reality; for communication among authorities where security is critical; or for secure, high-availability applications for business customers. In the reporting year, Deutsche Telekom, together with its partners, became the first network operator in the world to demonstrate the benefits of network slicing for a gaming app on a commercial smartphone. Actively controlling performance parameters in line with the different requirements was also successfully tested for 5G network slicing via a network API.
- **AI One Conversation:** By integrating artificial intelligence, we will ensure that our products and services remain competitive into the future. The focus of our activities in the reporting year was on scaling up our AI-based Frag Magenta digital assistants for chat and telephone. The aim of these digital assistants is to further personalize all customer interactions across all points of contact. In November 2021, German computer magazine Computer Bild and market statistics company Statista named our Frag Magenta chatbot the best chatbot by a German telecommunications provider for 2022. We also continue to personalize our marketing and sales activities so as to be able to offer our customers tailored solutions that are based on our previous interactions with them.
- **Big Data & AI:** This is an innovation area in which we are driving the implementation of Group-wide principles for data processing and analytics. Our uniform data model will enhance our data analysis and enable us to easily transpose successful applications to new markets and countries using cloud-based deployment architecture. As the privacy and integrity of our customers' data is our top priority, customer and network data remain with the relevant national companies.   Dozens of use cases for data processing, analysis, and quality have been tested in eight of our national companies and have been scaled up within the Group.
- **Sustainable Telco:** Our newest innovation area is devoted to making the telecommunications industry more sustainable. Currently, the main focus is on energy-optimized dynamic network production and the resource-efficient design of products and services. The reporting year saw successful prototypes and tests for AI-based, smart energy management in the mobile network and for decentralized production of renewable energy such as hybrid solar and wind power and hydrogen-based fuel cells.  

Three-pronged innovation strategy

We set ourselves apart from the competition and generate growth in three ways:

1. In-house developments

In 2021, we continued to pursue our current innovation topics and optimized our delivery process, developed new products, and simultaneously ramped up our transformation into a more agile company.

- **Delivery Innovation:** Artificial intelligence drives internal digitalization, e.g., in campaign management or with our award-winning Frag Magenta chatbot. Dynamic spectrum sharing helped us build on our leadership position. This new antenna technology enables the parallel use of LTE and 5G in the same frequency band.
- **Experience Innovation:** In the consumer area, we commercially launched the linking of a range of Magenta services at home via app and television through home orchestration. Industrial campus networks also reached the market.
- **Capability Innovation:** In the wake of our transformation into an agile company, more than 95 % of our employees now work in an agile set-up, which is also having a positive impact on IT delivery. For example, around two-thirds of our IT deployments now take place outside of the traditional waterfall development model.

T-Labs is the research and development unit of Deutsche Telekom, focusing on translating new technology trends into tangible results for Deutsche Telekom's innovation portfolio. Co-research is the key mission for the team, with the vision of achieving a superior customer experience and exploring disruptive technologies for future telecommunications infrastructures. From our base in Berlin, we cooperate with multiple universities in Germany, Europe, Israel, and around the world.

Active cooperation with universities and academia in general has the goal of turning ideas into action and has been at the heart of T-Labs' mission from the outset. As a trusted interface between academia and business, we provide fast access to scientific innovation and R&D, enabling various co-creation formations. The **T-Challenge** is a new innovation format to attract a global research community. Recently, Deutsche Telekom and T-Mobile US launched a T-Challenge for 5G XR (extended reality) in retail. In a worldwide competition for start-ups, developers, scientists, and designers we are looking for research into and solutions for using 5G networks and extended reality technology to transform the shopping experience throughout the different retail channels. The T-Challenge is designed to fuel new innovations in how consumers shop, using immersive XR experiences in stores, at home, and on the go. SDG 9 RELATIONSHIPS

Together with Deutsche Telekom's HR team, T-Labs' active promotion of cooperation with universities also serves a Group-wide function, by also attracting talents and strengthening brand awareness of the company in the R&D community.

Our current research areas are future networks & AI, spatial computing, and decentralized systems.

Future networks & AI. SDG 9 FINANCE Telecommunications networks belong to the most complex structures in modern industrial societies. The techno-economic evolution of these networks follows the principles of decentralization, disaggregation, and automation. Consequently, we research data-driven algorithmic approaches for optimized operation and preemptive cybersecurity in telecommunications systems. T-Labs' new research activities focus on Open RAN, cybersecurity, quantum technology, and next-generation (6G) radio network technology. In particular, the next generation of digital communication (6G) represents the evolutionary development of current technology and fundamental advances from in-depth research.

Spatial computing. Spatial computing is focused on enabling advanced user interaction at higher standards for various customer segments by using next-generation XR technologies and human-computer interfaces. Our activities in smart media will provide a seamless and consistent experience when using future Deutsche Telekom products and services. Our mission as innovators, researchers, and developers is to create an exciting, immersive world for our customers. A concrete example is the 5G Cloud VR project, which is enabling photorealistic VR (virtual reality) services based on advanced 5G network capabilities, such as rendering 3D graphics on a cloud-based infrastructure. As part of another recent project with our national company Hrvatski Telekom, we conducted a field trial testing live-streamed sport channels with low latency.

Decentralized systems. This research area deals with the distribution of authority over data among multiple players with the aim of making intermediaries obsolete. Corporations and individuals alike have recognized the immense potential of distributed ledger technologies. These enable the decentralization, transparency, and integrity of data, while significantly increasing efficiency at the same time. The goal is to enable trust without dependence on single trusted parties. Some applied use cases within this area are digital identities, digital business processes, digital asset management, and crypto-economics. The latest results were shown by NOMAD, which is a blockchain network for inter-operator transactions in wholesale roaming, conceived and built together with the GSMA and other industry partners.

2. Partnerships

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

- Like many other experts, Deutsche Telekom is convinced that extended reality (XR), in which the real and virtual worlds merge, heralds the next major technological revolution. We want to foster this development, which is why we support the **Qualcomm** open XR developer platform Snapdragon Spaces, which will further boost XR. Exciting applications, ever-improving hardware and, first and foremost, 5G, with its low latency, will be the technological basis for the triumph of XR. In spring 2022, Deutsche Telekom's hubraum tech incubator and the T-Mobile Accelerator will both launch new XR programs, giving start-ups, creatives, and developers the chance to work with mentors from the Group to develop and test solutions on Snapdragon Spaces.
- Deutsche Telekom is declaring war on paperwork. For legally sound digital processes, the Group now provides small and medium-sized companies with electronic signatures using **Adobe Sign**. The solution has been available in the Telekom Cloud portal since December 2021. Customers can use Adobe Sign from anywhere and any device to manage, send, and archive legally valid signed documents, replacing time-consuming paper-based processes. As Adobe Sign is a service from the cloud, customers are always safe in the knowledge they have the latest version with all of the relevant performance features. It can be integrated easily into existing IT systems, for example Microsoft 365, using standardized connectors.

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- The unified communications and video conferencing provider **Zoom** and Deutsche Telekom are stepping up their partnership. The coronavirus pandemic has given a global boost to hybrid working models, which call for innovative communications and collaboration solutions tailored to businesses of all sizes. We provide a range of solutions for communications from a single source in Germany and in other European national companies. Both companies are also working on new and future innovative solutions for the B2C and above all for the B2B segment.
- In addition, the partnership with **SoftBank**, which was agreed in September 2021, became operational. This furthers the expansion of exclusive digital partnership offerings as part of the Magenta Advantage strategic area of operation. We have already had the opportunity to offer our customers in certain European markets selected partner offerings based on a range of models for cooperation with start-ups and small businesses from the SoftBank portfolio (e.g., discounted e-mobility through the supplier TIER Mobility), and our intention is to expand this option in the future.

3. Start-up funding SDG 9 RELATIONSHIPS

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

Since founding hubraum in 2012, we have established a strategic investment portfolio of over 30 companies and worked together closely with around another 350 start-ups from Europe and Israel in areas such as the real-time gigabit society (e.g., 5G and edge cloud), the smart data economy (e.g., AI and process automation), and the Internet of Things (e.g., NB-IoT and Industry 4.0). With one of Europe's first 5G networks and edge cloud infrastructure, the hubraum campus in Berlin offers start-ups not only co-working office space, but also exclusive access to our Group's networks, product platforms, and test data to help them build up their businesses faster. The hubraum 5G prototyping initiative was continued in 2021 with more specific programs:

- **Campus Networks:** Two start-ups were selected in 2021 which, similar to the previous year, will work with hubraum and T-Systems to develop applications for 5G campus networks.
- **iOS AR Innovation Program:** Augmented reality has been a focus area for our start-up incubator since 2019. The Berlin team is now aiming to cooperate for the first time with developers creating iOS-based applications, focusing on a range of industries such as gaming, education, and communication. In late November 2021, nine start-ups from the United States and Finland presented their results in Berlin.

The hubraum 5G prototyping initiative was also accompanied by other programs and initiatives in 2021:

- **Network Sustainability Award:** hubraum created this award in 2020 with the aim of making our telecommunications networks more energy efficient. The award was presented again in 2021. The judges sifted through a total of 221 entries, finally selecting 4 winners. Tests are currently underway to ascertain the efficiency of the sustainable solutions and to assess their benefit before they are rolled out. Renowned partners like Microsoft, Orange, and South Korean Telecom were involved in the awards process. At Technology and Innovation, the topic comes under the TESLA program (Telco Energy Efficiency, Sustainability & Leveraging Assets).

SDG 13
ENVIRONMENT
- **Residency Program for IoT Creators:** With a total of some 150 desks in Berlin and Krakow, hubraum launched its first structured program to provide office space, including mentoring, in the reporting year. A total of seven start-ups have moved onto our premises and are currently working on their applications with the help of the infrastructure and mentors provided. The final presentation will take place in late February 2022. There is a strong focus on IoT, which is why the IoT engineers (Deutsche Telekom IoT GmbH) have an essential role to play as partners.

- **Developer Relations:** Developers currently have difficulty integrating telecommunications services into their applications, as the current network architecture does not support it. To overcome this problem, hubraum is currently developing a portal for access to Deutsche Telekom APIs and creating a community for this topic. The ultimate aim is to enable businesses to offer their products and services, including telecommunications services, easily.
- **Accuracy Unlocked:** The aim of this program is to investigate how precise positioning using a cloud-based solution can be implemented to optimize existing satellite navigation and to offer applications in both the B2C and the B2B segment. In August 2021, 13 start-ups selected by hubraum and Swift Navigation demonstrated their solutions in areas such as robotics, shared mobility, and the automotive industry.
- **hub4industry:** The hub4industry consortium was founded in 2019 with funds from the Polish Ministry of Economic Development and Technology. hubraum is establishing the factory of the future on site, with a 4G/5G campus network based on typical single RAN architecture and an EPC network. It provides a showroom for the many customers and partners who are interested in Industry 4.0.

The following start-ups received investment funding from Deutsche Telekom in the reporting year:

- **MonoLets** has developed a particularly energy-efficient, scalable IoT system solution for logistics and supply, enabling real-time monitoring of a range of parameters at item level.
- **PHYTunes** solves the problem of poor 5G coverage indoors. It has developed a new process for transmitting 5G signals that bypasses obstacles such as windows, walls, plants, etc.

hubraum will be ten years old in 2022, making it the oldest start-up incubator in Berlin and therefore unparalleled in the European start-up world. A range of further innovation programs, some building on existing programs, is also planned. The programs again focus on topics such as sustainability, augmented reality, and 5G.

Innovation governance

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

Portfolio and Innovation Board

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

Corporate Innovation Fund

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

T&I Investment Committee

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

DTCP

Deutsche Telekom's investment management group DTCP, established in early 2015, manages around USD 1.0 billion for Deutsche Telekom and other institutional investors, and has a portfolio of more than 60 businesses. DTCP pursues two investment strategies: growth equity in Europe, the United States, and Asia, and investments in digital infrastructure in Europe. The prime motive for DTCP's investments is financial. For example, it acquires shares in companies still in the growth phase and aids those companies' further growth, with a view to selling its stake for a profit later on. DTCP also plays an active role in establishing business relations between the innovative portfolio companies and Deutsche Telekom and other partner corporations, in order to add value for both sides.

In the growth equity field, the focus on cloud-based software-as-a-service (SaaS) solutions for companies resulted in a positive development similar to the previous years, not least due to the rising number of people working from home and the growing acceptance of this mode of working, and to increasing digitalization. New additions to the growth equity portfolio are Axonius (cybersecurity asset management), Iterable (a cross-channel marketing platform), One Store (a South Korean app store), Neo4j (a graph database management system), and Figment (infrastructure for Web3 staking). In addition, DTCP increased its stakes in the successful portfolio companies AppsFlyer (marketing analysis), Aircall (call center software), and Arctic Wolf Networks (corporate network security). The former portfolio company Signavio, a provider of software for business processes, was taken over by SAP. In addition, the single sign-on systems company Auth0 was acquired by Okta. The portfolio company Epsagon (application monitoring) was acquired by Cisco, and the portfolio company Guardicore (network segmenting for cybersecurity) was taken over by Akamai. The merger with a private equity-financed competitor meant that DTCP could sell part of its stake in Dynamic Signal, a corporate communications platform provider.

The strategic investment fund Telekom Innovation Pool (TIP) is available for investments that are mainly strategically motivated. Advised by DTCP, Deutsche Telekom invests in and promotes business start-ups through TIP that have a strategic focus and that support the Group's long-term targets through collaboration with the different business areas. TIP actively pursues long-term innovations for the Deutsche Telekom Group, particularly in the fields of software-defined networking (SDN), decentralized and cloud-based applications, and the digitalization of business operations. TIP made four new corporate investments in 2021: Celo (decentralized financial systems and tools for smartphones), Signalwire (communications platforms as a service, CPaaS), Teridion (software-defined wide area network, SD-WAN), and GoStudent (digital tutoring, online learning).

Patent portfolio

Patents are gaining more and more significance in the telecommunications industry. Our patent strategy has to keep pace with the constant evolution of market players and fields of activity. On the one hand, our Group's scope for action must be maintained. On the other, we want to protect the results of our own research and development, and to use these in cooperation and partnership with other companies. National and international patent rights are vital for these types of activity. We are therefore strongly dedicated to generating and maintaining our own patents. In the reporting year, Deutsche Telekom held a total of around 8,800 patent rights. We are firmly committed to expanding our patent portfolio, taking relevant current and future technologies into account. This will secure the value of our innovations in a dynamic world and bolster the Group's competitiveness.

Investment in research and development

Research and development (R&D) expenditure includes pre-production research and development, such as the search for alternative products, processes, systems, and services. By contrast, we do not class as R&D expenditure the costs of developing system and user software which is designed to improve productivity and make our business processes more effective. R&D expenditure in the Deutsche Telekom Group amounted to EUR 33 million in 2021 (2020: EUR 33 million). In 2021, our Group's investments in internally generated intangible assets to be capitalized were up year-on-year at EUR 612 million compared with EUR 448 million for the previous year. These investments predominantly relate to internally developed software, mainly in our Group Headquarters & Group Services segment and our Systems Solutions operating segment.

Forecast^a

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

We successfully continued our growth course on both sides of the Atlantic again in 2021. We want to surpass the strong development of the last few years and lead the Group into the future with sustainable growth. We presented our medium-term strategy and the financial outlook at our Capital Markets Day in May 2021. We have already passed key milestones to secure control of T-Mobile US in the long term and, on this side of the Atlantic too, significant transactions have been closed and reorganizations completed. We want to use this strong starting position going forwards to underpin our success with solid financial growth rates, further extend our technology leadership with the best state-of-the-art networks, and thereby implement our Leading Digital Telco strategy.

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

This ties in with our financial targets for the period through 2024, which we communicated at our [Capital Markets Day](#) in May 2021. From 2020 through 2024, we aim to achieve the following compound annual growth rates (CAGR) or targets for our key financial performance indicators:

- **Net revenue** is expected to increase by an average of 1 to 2 %; **service revenue** by an average of 3 to 4 %.
- **Adjusted EBITDA AL** is expected to increase by 3 to 5 % on average; adjusted core EBITDA AL, i.e., adjusted EBITDA AL excluding revenues from terminal equipment leases in the United States, is expected to increase by 5 to 6 % on average.
- **Free cash flow AL** (before dividend payments and spectrum investment) is expected to increase steadily, exceeding EUR 18 billion in 2024.
- **Earnings per share** (adjusted for special factors) is expected to exceed EUR 1.75 in 2024.

For 2022, we expect to post the following year-on-year trends, assuming a comparable consolidated group and constant exchange rates:

- **Net revenue** is initially likely to remain stable in 2022. We expect **service revenue** to increase slightly.
- **Adjusted EBITDA AL** is expected to be around EUR 36.5 billion in 2022. In the reporting year, adjusted EBITDA AL came in at EUR 37.3 billion; on a like-for-like basis, i.e., adjusted for comparability with the adjusted EBITDA AL forecast for 2022, adjusted EBITDA AL stood at EUR 36.5 billion. We expect adjusted core EBITDA AL to increase by around 5 % in 2022.
- **Free cash flow AL** is expected to grow to around EUR 10 billion in 2022. Free cash flow AL in 2021 was EUR 8.8 billion; on a like-for-like basis, i.e., adjusted for comparability with the free cash flow AL forecast for 2022, free cash flow AL stood at EUR 8.4 billion.
- We expect a slight increase for **earnings per share** (adjusted for special factors) in 2022.

Economic outlook

In its economic forecast from January 2022, the International Monetary Fund (IMF) expects global economic growth of 4.4 % in 2022. We also expect the economic recovery to continue in our core markets. The delivery and capacity bottlenecks are expected to gradually ease in 2022 and to decline in importance. Inflation rates are likely to slow down in 2022, when key special factors such as the rise in prices for raw materials and energy are no longer included in the year-on-year comparison. Eastern European countries in particular are also set to benefit in 2022 from the first disbursements from the Recovery and Resilience Facility, the central pillar of the NextGenerationEU recovery fund.

Forecast on the development of GDP and the unemployment/non-employment rates in our core markets for 2022 and 2023

%				
	GDP for 2022 compared with 2021	GDP for 2023 compared with 2022	Unemployment/non-employment rate in 2022	Unemployment/non-employment rate in 2023
Germany	3.8	2.5	5.2	5.0
United States	4.0	2.6	4.2	4.0
Greece	5.2	3.6	15.0	14.5
Romania	5.1	5.2	4.8	4.5
Hungary	5.4	3.2	3.1	2.9
Poland	4.6	3.7	3.1	3.0
Czech Republic	4.4	3.2	2.6	2.4
Croatia	5.6	3.4	6.2	5.8
Slovakia	5.3	4.3	6.4	5.6
Austria	4.9	1.9	4.6	4.5

Source: International Monetary Fund, European Commission, HSBC; last revised: January 2022.

The unemployment rate for Germany and the non-employment rates for the other countries are presented in conformance with ILO standards.

Expectations for the Group

Expectations up to 2023. We expect profitable growth to continue over the next two years. This will provide a sound basis for achieving our financial ambitions – as communicated at our [Capital Markets Day](#) in May 2021.

We expect our **financial performance indicators** to develop as follows in 2022 and 2023:

- **Net revenue** is projected to remain stable year-on-year in 2022 and to increase slightly in 2023. This trend will be influenced in particular by the United States operating segment, which is also expected to report a stable trend in 2022 and a slight increase in 2023. In the United States, the forecast period will be negatively impacted by the withdrawal from the business model of terminal equipment leases and lower revenue in the wholesale business. In the Germany operating segment, revenue is expected to increase slightly in 2022 and to increase in 2023.
- **Service revenue** is projected to slightly increase year-on-year in both 2022 and 2023. In the United States operating segment, after an increase in 2022, this metric is expected to increase slightly in 2023.

- **Adjusted EBITDA AL** is expected to come in at around EUR 36.5 billion in 2022 and to increase in 2023. In the next two years, adjusted EBITDA AL will also be negatively affected by the gradual exit from the business model of terminal equipment leases in the United States, with revenues from terminal equipment leases being offset primarily by the depreciation of the capitalized terminal devices on the expenses side. Terminal equipment leases were a major pillar, in particular, at Sprint. In its place, marketing activities are set to shift increasingly toward terminal equipment sold under installment plans.
- We expect **adjusted core EBITDA AL** to increase year-on-year in 2022 and then again in 2023. Adjusted core EBITDA AL is distinguished by excluding revenue from terminal equipment leases in the United States from adjusted EBITDA AL, thereby presenting operational development undistorted by the withdrawal from the terminal equipment lease business. For this reason, we are adding adjusted core EBITDA AL to our financial performance indicators for the years of the withdrawal from the business model of terminal equipment leases in the United States for explanatory purposes.
- **EBIT** is expected to increase sharply year-on-year in 2022 and 2023. This is based on the positive development of adjusted core EBITDA AL. While 2022 will additionally benefit from income relating to the sale of T-Mobile Netherlands, 2023 will include effects from the reduction in integration costs in connection with the business combination of T-Mobile US and Sprint.
- **ROCE** is expected to increase slightly in 2022 and significantly in 2023. Hence, we expect to achieve our target for ROCE to be higher than the expected weighted average cost of capital (WACC) again in 2023, following a briefly increased burden until 2022 from the integration costs arising from the business combination of T-Mobile US and Sprint.
- Our investments – measured in terms of **cash capex** (before spectrum investment) – are expected to amount to around EUR 19.3 billion in 2022 and include higher investments for the accelerated 5G build-out in the United States operating segment. In 2023, cash capex (before spectrum investment) is expected to decrease substantially. We want to continue investing heavily in building out our network infrastructure in Germany, the United States, and Europe in order to safeguard our technology leadership in the long term.
- **Free cash flow AL** (before dividend payments and spectrum investment) is expected to reach around EUR 10 billion in 2022. We also expect a strong increase in free cash flow AL in 2023 due to good operational development. For business outside of the United States, we expect free cash flow AL of EUR 3.7 billion for 2022. Free cash flow AL outside of the United States in 2021 was EUR 3.9 billion; on a like-for-like basis, i.e., adjusted for comparability with the forecast for free cash flow AL outside of the United States for 2022, it stood at EUR 3.5 billion.
- At the end of 2021, we had the following **ratings**: BBB with a stable outlook (Standard & Poor's – S&P); BBB+ with a stable outlook (Fitch); and Baa1 with a stable outlook (Moody's). Maintaining an investment grade rating within the A– to BBB range will enable us to retain access to the international capital markets and is thus a key component of our finance strategy.
- We expect a slight increase for our **earnings per share** (adjusted for special factors) in 2022. We expect to see adjusted earnings per share increase sharply in 2023.

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

Bonds and loans in the total amount of EUR 7.0 billion and EUR 7.8 billion will fall due for repayment in 2022 and 2023, respectively. A number of T-Mobile US bonds include issuer termination rights. If the premature termination and refinancing of these bonds result in economic gains, this could give rise to further refinancing requirements. We plan to issue new bonds in various currencies. The exact financing transactions will depend on developments in the international finance markets. We also intend to cover part of our liquidity requirements by issuing commercial paper.

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

Our expectations for the period until 2023 for the Group and the operating segments as regards our financial and non-financial performance indicators are shown in the following tables. They assume a comparable consolidated group and constant exchange rates. If the economic situation should deteriorate or any unforeseen state or regulatory interventions arise, the expectations expressed here may change accordingly. Given the level of macroeconomic uncertainty, for instance in the context of the continuation of the coronavirus pandemic, we cannot rule out the possibility of deviations either. All trends denote year-on-year changes. To indicate the intensity and trends of our forecasts, we apply the following assessment matrix: strong decrease, decrease, slight decrease, stable trend, slight increase, increase, strong increase.

Financial performance indicators

		Results in 2021	Pro forma in 2021 ^a	Expectations for 2022 ^b	Expectations for 2023 ^b
Net revenue					
Group	billions of €	108.8	106.5	stable trend	slight increase
Germany	billions of €	24.2	24.2	slight increase	increase
United States (in local currency)	billions of \$	80.8	81.0	stable trend	slight increase
Europe	billions of €	11.4	11.0	slight increase	stable trend
Systems Solutions	billions of €	4.0	4.0	stable trend	slight increase
Group Development	billions of €	3.2	1.1	increase	increase
Service revenue					
Group	billions of €	84.1	82.1	slight increase	slight increase
United States (in local currency)	billions of \$	57.8	57.8	increase	slight increase
Profit (loss) from operations (EBIT)					
	billions of €	13.1	12.5	strong increase	strong increase
EBITDA AL					
	billions of €	33.9	33.0	increase	strong increase
EBITDA AL (adjusted for special factors)					
Group	billions of €	37.3	36.5	around 36.5	increase
Germany	billions of €	9.5	9.5	9.8	slight increase
United States (in local currency)	billions of \$	26.9	26.8	26.4	increase
Europe	billions of €	4.0	3.9	4.0	slight increase
Systems Solutions	billions of €	0.3	0.3	0.3	increase
Group Development	billions of €	1.3	0.6	0.6	increase
Core EBITDA AL (adjusted for special factors)^c					
Group	billions of €	34.5	33.7	increase	increase
United States (in local currency)	billions of \$	23.6	23.6	increase	strong increase
ROCE					
	%	4.1		slight increase	strong increase
Cash capex (before spectrum investment)					
Group	billions of €	18.0	17.7	19.3	strong decrease
Germany	billions of €	4.1	4.1	increase	increase
United States (in local currency)	billions of \$	12.2	12.2	strong increase	strong decrease
Europe	billions of €	1.8	1.7	stable trend	stable trend
Systems Solutions	billions of €	0.2	0.2	stable trend	stable trend
Group Development	billions of €	0.6	0.3	strong increase	stable trend
Free cash flow AL (before dividend payments and spectrum investment)					
	billions of €	8.8	8.4	around 10.0	strong increase
Rating					
Standard & Poor's, Fitch		BBB, BBB+		from A- to BBB	from A- to BBB
Moody's		Baa1		from A3 to Baa2	from A3 to Baa2
Other					
Dividend per share ^{d, e}	€	0.64		Dividend payout ratio of 40 to 60 % of EPS (adjusted for special factors), minimum € 0.60	Dividend payout ratio of 40 to 60 % of EPS (adjusted for special factors), minimum € 0.60
Earnings per share (adjusted for special factors)	€	1.22		slight increase	strong increase
Equity ratio	%	28.9		25 to 35	25 to 35
Relative debt		3.06x ^f		> 2.75x ^f	> 2.75x ^f

^a Including changes in the organizational structure and in the composition of the Group up to the date of preparation of the consolidated financial statements and the combined management report (including the sale of T-Mobile Netherlands – exclusion of 12 months for pro forma 2021 and expectations, the sale of Telekom Romania Communications, the acquisition of Shentel, the combination of the cell tower business in the Netherlands, and set-up of an infrastructure fund).

^b On a comparable basis.

^c Adjusted core EBITDA AL is distinguished by excluding revenue from terminal equipment leases in the United States from adjusted EBITDA AL, thereby presenting operational development without distortion. For this reason, we are adding adjusted core EBITDA AL to our financial performance indicators for the years of the withdrawal from the business model of terminal equipment leases in the United States for explanatory purposes.

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

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

^f Deviation from the target range of 2.25–2.75x for a short period due to the business combination of T-Mobile US and Sprint until year-end 2024.

Non-financial performance indicators

		Results in 2021	Pro forma in 2021 ^a	Expectations for 2022	Expectations for 2023
Group					
Customer satisfaction (TRI*M index)		73.4		slight increase	slight increase
Employee satisfaction (commitment score)		77		stable trend	stable trend
Energy consumption ^b	GWh	13,323		stable trend	stable trend
CO ₂ emissions (Scope 1 and 2) ^c	kt CO ₂ e	247		slight decrease	slight decrease
Fixed-network and mobile customers					
Germany					
Mobile customers	millions	53.2	53.2	increase	increase
Fixed-network lines	millions	17.5	17.5	stable trend	stable trend
Retail broadband lines	millions	14.5	14.5	slight increase	slight increase
Television (IPTV, satellite)	millions	4.0	4.0	increase	strong increase
United States					
Postpaid customers	millions	87.7	87.7	increase	strong increase
Prepaid customers	millions	21.1	21.1	slight increase	slight increase
Europe					
Mobile customers	millions	45.8	45.8	slight increase	slight increase
Fixed-network lines	millions	7.8	7.8	slight decrease	stable trend
Broadband customers	millions	6.4	6.4	increase	increase
Television (IPTV, satellite, cable)	millions	4.0	4.0	increase	increase
Systems Solutions					
Order entry	billions of €	4.2	4.2	slight increase	slight increase

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

^b Energy consumption, mainly: electricity, fuel, other fossil fuels, district heating for buildings.

^c Calculated according to the market-based method of the Greenhouse Gas Protocol.

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

In both 2022 and 2023, we intend to achieve a moderate improvement in **customer loyalty/satisfaction** – which is measured using the **TRI*M index** performance indicator.

Having achieved a high level of 77 points – on a scale of 0 to 100 – on the **commitment score** in the 2021 employee survey, and in view of the results of the pulse surveys conducted in 2021, we expect the positive response of our employees regarding our Company to remain stable in the next pulse surveys in 2022 and 2023.

We plan to maintain **energy consumption** at a stable level in 2022 and 2023. We expect **CO₂ emissions** (Scope 1 and 2) to decline slightly over the next two years, since the energy consumption of all Group units has been covered entirely by electricity from renewable energy sources since 2021 and, as such, the majority of emissions have already been eliminated.

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

Our planning is based on the following exchange rates:

Currency		Exchange rate
Croatian kuna	HRK	7.53
Polish zloty	PLN	4.57
Czech koruna	CZK	25.65
Hungarian forint	HUF	358.54
U.S. dollar	USD	1.18

Expectations for Deutsche Telekom AG. The development of business at Deutsche Telekom AG, the Group’s parent company, is reflected particularly in its service relationships with its subsidiaries, the results of the subsidiaries’ domestic reporting units, and other income from subsidiaries, and from associated and related companies. In other words, our subsidiaries’ results from operations and the opportunities and challenges they face are key factors shaping the future development of Deutsche Telekom AG’s figures. Accordingly, in addition to our expectations for the Group, the expectations described on the following pages concerning the operating segments’ revenue and earnings – such as strong competition, regulatory intervention, market and economic expectations, etc. – have an impact on our expectations concerning the development of Deutsche Telekom AG’s future income after taxes.

For the 2021 financial year, we will propose a dividend of EUR 0.64 for each dividend-bearing share. Since 2021, subject to approval by the relevant bodies and the fulfillment of other legal requirements, the amount of the dividend is based on a dividend payout ratio of 40 to 60 % of adjusted earnings per share, with a lower limit fixed at EUR 0.60 per dividend-bearing share.

Expectations for the operating segments

Below, we explain the market expectations and the expectations for the financial and non-financial performance indicators of our operating segments. We assume a comparable consolidated group and constant exchange rates for the development of our performance indicators.

We presented more detailed information at our [Capital Markets Day](#) in May 2021.

Germany

Following an increase in revenue from telecommunications services in Germany in the reporting year compared with the prior year, further revenue growth is expected for 2022. The negative impact of the coronavirus pandemic on revenue in the mobile market will decline. Negative regulatory effects from reduced mobile termination rates (MTR) and the decline in traditional fixed-network telephony will be more than offset by still growing demand for mobile data volumes and faster connectivity in the consumer and business customer area. In the German mobile market, revenue is expected to increase by 0.9 % in 2022. In the fixed-network business, the number of broadband lines will continue to grow. Revenue is expected to grow by 1.2 % (source: Analysys Mason).

Innovative, attractive rate plans and supplementary services – such as TV and streaming options, and smart-home services – are becoming increasingly important for our competitive position with consumers, while cloud services, security applications, and solutions for Industry 4.0 are gaining in significance with business customers. We set ourselves apart from other providers with technology leadership and our broad range of products and services. Rate plan innovations like our convergent offering MagentaEINS Unlimited or innovative fixed-network products like the 5G hybrid router, are just two examples of our commitment to staying at the cutting edge. We are the first telecommunications company in Germany to have tackled the topic of sustainability head on in the form of our two sustainability labels, #GreenMagenta and #GoodMagenta, which we launched to improve the transparency of our products.

The mobile communications market in Germany is currently dominated by three providers, each with its own network infrastructure, deploying 4G/LTE and 5G technology to ensure that the majority of the population has access to high-speed mobile internet. In 2019, Drillisch Netz AG, a subsidiary of United Internet AG, acquired mobile spectrum and has announced its intention to set up a fourth mobile network. On May 21, 2021, Drillisch Netz AG signed a national roaming agreement with Telefónica, which Drillisch will use to serve its customers until it has set up its own mobile network. This will further increase infrastructure competition.

In mobile communications, we are keeping our promise to build out the network and are therefore the leader in terms of network coverage, speeds, and customer experience. In total, as of the end of 2021, more than 90 % of the population in Germany can use the state-of-the-art mobile technology on the Telekom network. The 5G network is being built out with a combination of two spectrum bands. The 2.1 GHz band, which has wide reach, will provide high mobile bandwidths in rural areas in particular. The 3.6 GHz band offers high-speed 5G in densely populated areas like big cities. In addition, our multi-brand strategy in mobile communications allows us to address the entire customer spectrum – from smart shoppers through to premium customers. We impress our business customers with our Business Mobile rate plans, which already include the new 5G standard and can be expanded with additional options catering exclusively to this target group.

By contrast, the fixed-network broadband market hosts a large number of players with differing infrastructures – from national through to regional providers. We are assuming that competition from cable network operators will remain intense and that the number of providers who have their own fiber-optic networks will increase.

In the fixed network, we want to offer fiber-optic-based products to more and more customers, creating the best customer experience for them. Our Germany-wide IP-based network achieves high transmission bandwidths of up to one gigabit per second. In order to always offer our customers competitive high-speed lines, we increasingly invest in digital infrastructure. Over the next years, we plan to roll out fiber to the home (FTTH) to up to 2.5 million households per year, such that by 2024, we can provide around 10 million households and business locations with fiber-optic lines. We already doubled our FTTH rollout in the reporting year and enabled 1.2 million households to directly connect to our fiber-optic network. Our build-out will benefit both people in towns and cities and those in rural areas. Partnerships are a key component of our fiber-optic build-out. In addition to established partnerships, the fiber-optic build-out entity GlasfaserPlus GmbH was set up in 2021, in which IFM Global Infrastructure Fund will hold a 50 % stake. The joint venture is to build out an additional four million gigabit-capable FTTH lines in (subsidized) rural and development areas by 2028. With our wide-ranging partnership models, we aim to set standards for sustainable broadband infrastructure. In the process, we ensure capacity utilization of our platform through our own retail business as well as by extending long-term partnerships with wholesale providers in broadband marketing.

We want to continue growing in the TV market, with a focus on our entertainment and exclusive streaming offers on MagentaTV, i.e., providing a wide array of entertainment from a single platform. In order to offer our customers the best possible user experience, we are engaging in strong partnerships, for example with RTL+, Disney+, Netflix, Prime Video, Sky, DAZN, and AppleTV+. In this way, MagentaTV combines multiple entertainment worlds in one.

In our Germany operating segment, we are accelerating our comprehensive transformation program and are aiming to secure our market position as the leading integrated telecommunications provider in Germany by means of innovative, competitive offers. To this end, we aim to further reduce the complexity of our products and processes through automation and digitalization initiatives. Our goal is to deliver the best customer experience with perfect service. To this end, we continue to invest systematically in our networks and the brand experience. We improve the service and shopping experience through our digital channels by creating more opportunities to offer customized and contextualized products and services. For our business customers, we position ourselves as the preferred partner for digitalization. We offer integrated portfolios for both small and large business customers as well as multinational corporations. From fixed network and mobile communications through to IT, we offer one-stop integrated solutions professionally and fast to provide our customers with optimum, sustainable support in a digital world.

We want to remain the market leader in Germany in terms of revenue over the coming years and extend our lead through rising service revenues. We are responding to our customers' constantly growing demand for bandwidth and continuing to invest extensively in broadband networks, digital transformation, and outstanding customer service. In our broadband business, revenues are constantly growing and customer satisfaction levels rising, and we want to continue this growth trend again in 2022. We will improve customer satisfaction by actively evolving our mobile services (e.g., MeinMagenta app) and ensuring seamless service across all channels (e.g., web, hotline, shop).

In our Germany operating segment, we expect slight revenue growth in 2022 and an increase in revenue in 2023. Our value drivers are growing mobile and broadband revenues (a result of the increased attractiveness of our own mobile brand), rising numbers of customers with high-speed lines, and B2B revenue growth, for example, thanks to the positive trend in IT and cloud business. We want to continue expanding our fiber-optic services, both by means of business models with wholesale products (such as the commitment agreements) and through further partnerships.

We also anticipate that our growth initiatives in Germany will offset the volume-driven decline in revenue from traditional fixed-network business and that we will continue consolidating our position as market leader in mobile and fixed-network communications. Thanks to our outstanding network quality and the progress we are making with fiber-optic build-out, we expect to see an increase in the next two years in the number of mobile customers as well as growth in our broadband products, fueled by demand for TV and high-speed lines. Our initiatives to digitalize IT solutions business for our business customers will continue enhancing revenues from IT and cloud services, and from M2M/IoT business. In wholesale business, we expect sales volumes to fall overall, mainly due to the fact that our wholesale customers are migrating their retail customers to alternative cable and fiber-optic-based infrastructure. We nevertheless expect demand to remain high as a result of our commitment agreements.

In each of the next two years, we expect to post year-on-year increases in earnings in our Germany operating segment. For 2022, we expect adjusted EBITDA AL to increase to around EUR 9.8 billion, driven in particular by high-value revenue growth and a simultaneous reduction in indirect costs, mainly through digitalization and automation. Our adjusted EBITDA AL is likely to rise again slightly in 2023. We are forecasting a stable adjusted EBITDA AL margin through 2023.

Our course is set for innovation and growth: While we will continue to consistently promote investments in new technologies with great intensity in the future, we will wind down legacy systems, cutting costs in the process. Over the coming years, we will focus our investments on building out a forward-looking fixed-network and mobile infrastructure (e.g., FTTH and 5G). Our aim here will be to close gaps in the network in rural areas and provide urban centers with the high bandwidth they require. We want to continue this rollout efficiently and, to this end, are participating in funding programs. We expect our cash capex to increase year-on-year in 2022 and then again in 2023.

United States

The overall U.S. ICT market swung back upward in 2021, after having declined in 2020. Growth returned to nearly all ICT sectors, including IT equipment and services, and total telecommunications infrastructure and services. Mobile voice and data services showed strong increase over 2020 levels, and total market growth, as well as individual sector growth, is expected at a steady clip through 2026.

Overall mobile revenues are expected to increase annually with continued subscriber growth, data consumption increases, and growth in the device market. Plan rates remain competitive. As anticipated, the MVNO offerings from cable companies Altice, Charter, and Comcast increased in competitive prominence in 2021, with the latter two growing to over three million subs each. Cable can present an even greater competitive threat if they are able to leverage its mid-band spectrum won in 2020. DISH has yet to make a concerted push with its Boost Mobile prepaid asset.

Leading industry associations such as GSMA expect the United States to lead global migration to 5G. The United States' 5G is expected to accelerate in 2022 and beyond, with providers expanding their capacity and coverage in complementary bands. The Federal Communications Commission conducted an auction in the 3.45 GHz band in 2021, is planning rules for the 2.5 GHz band auction, and is working to deploy C-band spectrum, all in support of 5G. GSMA expects almost half of all mobile connections to be running on 5G networks by 2025, and Ericsson forecasts 90 % by 2027. T-Mobile US expanded its 5G network leadership, by reaching 310 million people, utilizing the 600 MHz spectrum holdings, and covering over 210 million people with Ultra Capacity 5G by the end of 2021, utilizing the 2.5 GHz spectrum holdings it acquired in the merger with Sprint.

T-Mobile US delivered several company-best results in 2021, and built further momentum in its growth initiatives and network leadership that positions the company for another strong year in 2022. T-Mobile US will continue to focus on creating shareholder value and providing the best value proposition on the best 5G network with award-winning experiences in the U.S. wireless industry. Key elements of the company's focus include continuing to consistently and profitably outgrow the competition, unlocking the value of synergies faster and bigger than anticipated, and making the necessary investments in the near term to position the company for long term success. T-Mobile US continues to keep this winning formula through providing this best value proposition in the market, while providing winning customer service married with its leading 5G network to deliver significant and sustainable long-term growth and margin implications.

T-Mobile US expects continued increases in postpaid and prepaid customers in 2022 and 2023 (albeit with more of a slight increase in prepaid customers) with expansion in underpenetrated growth vectors such as smaller markets and rural areas and enterprise to fuel future growth. Military, 55+, family plans, and previous greenfield retail expansion have all helped fuel industry-leading growth over the last few years while allowing T-Mobile US to deliver great financial returns along with industry-leading subscriber growth. In addition, continued growth of the upper and lower age demographics as well as new product category growth of the high-speed internet base is expected in the U.S. wireless market. However, competitive pressures and unforeseen changes in the wireless communications industry in the United States may significantly affect the expected ability to attract and retain branded postpaid and prepaid customers.

T-Mobile US expects a stable growth trend in total revenues in U.S. dollars in 2022 and a slight increase in 2023 driven by slightly increasing service revenue growth expected in 2022 and further increased growth in 2023 primarily from postpaid account and ARPA growth. Further adoption of 5G devices is anticipated to lead to equipment revenue growth and increases in installment device financing, but partially offset by lower lease revenues from a declining lease base and lower revenues in the wholesale business.

For 2022, T-Mobile US expects adjusted EBITDA AL of USD 26.4 billion and an increase in 2023. The development of adjusted EBITDA AL will be affected by the continued exit from handset leasing in the upcoming years. Sprint had a higher focus on handset leasing, which is being replaced by an increased focus on equipment installment plans. Revenue growth is expected to outpace increases in expense as T-Mobile US is focused on customer growth and delivering synergies of the merger with Sprint by driving operating cost efficiencies and site decommissioning as the network is integrated and customers are migrated to the destination network. However, investments to unlock growth vectors such as the growth in digitalization and supporting smaller markets and rural areas as well as enterprise growth; coupled with the expectation of increased switching activity from network migrations will impact adjusted EBITDA AL. Adjusted core EBITDA AL, i.e., adjusted EBITDA AL excluding revenues from handset leasing, is expected to increase in 2022 and to increase strongly in 2023.

Excluding expenditures relating to spectrum, T-Mobile US expects a strong increase in cash capex in 2022 in U.S. dollars as capex remains elevated and the company accelerates network integration and the rapid pace of deployments to continue building out the 5G network that then results in a strong decrease in capex in 2023.

Europe

In 2021, the coronavirus pandemic again had a substantial negative impact on economic development in the countries of our Europe operating segment, although the economy did substantially recover from the downturn in the prior year. Private consumption gained significant momentum over the course of 2021. In 2022, real GDP will rise in our segment's footprint countries by between 4.4 and 5.6 % per annum. However, the ongoing economic uncertainty could have a negative impact on household and business expenditure for telecommunications services and thus reduce in particular revenues from business customer operations, roaming, and the prepaid segment. Analysys Mason forecasts total revenue growth for telecommunications services of 1.4 % for the countries of our Europe operating segment for 2022; for 2023 growth will be more modest. Customer demand for a fast and reliable broadband connection is also expected to lead to growth in broadband revenues of around 3 % for the next two years. The trend towards increased data usage will also continue, especially in households that have not previously had a sufficiently fast broadband line. Demand has also grown as a result of the coronavirus-induced shift towards working from home. On top of this, the fiber-optic build-out is being accelerated. In most Central and Eastern European countries, there is still the possibility of increasing broadband network coverage. Additional regulatory-induced measures will likely further boost investments in network infrastructure. This growth is being bolstered by the growing number of companies offering convergent products. According to Analysys Mason, TV revenues will also increase in traditional pay TV business over the next two years, by around 3 % in both 2022 and 2023. Mobile revenues will increase again slightly in 2022 according to the Analysys Mason forecast. The analysts rather expect revenue to again develop stably in 2023.

We aspire to become Europe's leading digital telecommunications provider in the coming years. We firmly believe that we can only generate long-term and sustainable growth if we put our customers at the heart of everything we do. In the consumer segment, we want, for example, to create the best customer experience by offering our FMC product portfolio to customers across all national companies in a segment-specific way. We are able to do this because we use our network infrastructure intelligently based on different technologies. With our fast fiber-optic networks and the accelerated rollout of 5G, we are making huge strides in digitalization and we want to serve private households, business customers, and municipalities with our fully integrated products.

The Europe operating segment is distinguished by its strong investment portfolio: All of our national companies, except for Romania, are integrated providers of telecommunications services and, as well as having a high brand recognition value, are substantially relevant in their respective home markets. In Romania, we have transformed ourselves from an integrated to a mobile-only provider through the sale of our stake in Telekom Romania Communications. Our strong international positioning in the Europe operating segment gives us the advantage of synergies: The national companies support each other through training and knowledge sharing. In particular this transnational cooperation gives us an edge over regional providers in the challenges posed by digitalization and cloudification.

Our successful convergent product portfolio, MagentaOne, means we offer strong, integrated fixed-network and mobile offerings for our customers with which we have successfully shaped developments on the European markets. In the reporting year, we made further significant strides: On the one hand, our national companies continue to generate strong growth, such that the majority of our customers often have signed corresponding bundle contracts and we were therefore able to increase FMC revenues as a percentage of total revenues. On the other, we profit from a resulting increase in customer satisfaction combined with a lower churn rate. Over the next few years, we will further develop our convergent bundled products to address specific target groups, thereby continuously increasing the value per household. With MagentaOne, we are creating an outstanding connection, in particular for families, for at home and on the move, combined with attractive add-on services. Our goal remains to deliver the best integrated customer experience.

Our TV business remains key to the success of FMC. The basis for this is the combination of excellent network, an outstanding customer experience, and a wide array of content (super aggregation). In terms of content, we continue to attach importance to high-quality and – where it makes sense – exclusive proprietary content. Going forward, we will continue negotiations, depending on local market conditions, to acquire (co-)exclusive rights to broadcast sports events, such as the UEFA Champions League and the Europa League, or the rights to TV movies/series. However, we also still believe high-quality local content to be very relevant in our markets. This is why we would like to offer our customers a wide range of such content. By implementing a new TV platform, we can improve the customer experience on the one hand, and rapidly roll out new services and content on the other. We are also working together with what are known as OTT players, like Netflix or Prime Video, and gradually expanding our range of OTT services – both national and international – to all screens – especially to our Android-TV-based terminals. Overall, we expect to continue growing our revenues from TV business over the next two years.

In order to bring us a step closer to achieving the best customer experience, we want to focus even more rigorously on our customers and their needs. In particular, we are looking at the end-to-end customer experience across all channels. Digitalization can make a major contribution in this regard. We will further expand digital interaction with our customers, meaning we can meet customer needs in a more personalized and efficient way, and position products and innovative services in the market more quickly. At the same time, we want to continue to ensure that, in addition to digital contact, human contact also remains a key factor in our interaction with customers. Thus, we believe we can achieve first place in customer satisfaction rankings of telecommunications companies in the respective national companies by 2024, as measured by the TRI*M index which is based on empirical research.

The broadband build-out will remain a key focus of activities in the coming years. Our state-of-the-art network infrastructure supports the digital transformation and enables us to leverage our technology leadership. The 5G rollout is gaining further momentum following the successful spectrum auctions. As of the end of 2021, our national companies covered 28.9 % of the population in our European footprint with 5G. In Greece, Croatia, and Austria, at least 50 % of the population and in some cases even more benefit from the advantages of the 5G technology. LTE remains the backbone for mobile data services and with network coverage of almost 98.2 %, it is becoming the new standard technology. We have begun decommissioning of the 3G technology in some countries. In all our footprint countries, we will gradually re-use the technology that is currently still used for 3G and reform the released spectrum to increase LTE and 5G capacity. The build-out of fiber-optic technology also progresses further. In the reporting year, we accelerated our build-out again, making fiber-optic lines available to another 1.4 million households. By 2023, we will add around 2 million more households, increasing fiber-optic coverage from the current level of 7.0 million households (27.9 % coverage) to a level of 36 % network coverage. In addition to the fiber-optic build-out, we have launched the first pilots in the fixed network for decommissioning the legacy copper infrastructure. We will systematically continue this process over the next few years.

With our service app, we have successfully revolutionized our digital approach in recent years. We produce the app centrally, on award-winning architecture, for all national companies as a state-of-the-art digital tool for interacting with our customers. More than two thirds of our customers use the service app and we make use of this for monetization (up- and cross-selling) and to cut costs by significantly reducing customer service cases through self-service and predictive maintenance. This production model is so successful that it is now being used for more and more products. The current focus is on a centralized OneShop (already live in four markets), centrally produced TV products (two markets with newly developed TV app are currently in the final stages of development), and centrally developed broadband and router products. In addition, this centralized digitalization approach offers numerous possibilities for customer experience across products, e.g., managing your router in the service app.

When it comes to the success of their business, our business customers in Europe will have a strong and reliable partner by their side in Deutsche Telekom over the coming years. We have made ourselves faster and more precise than ever in order to offer solutions for productivity, digitalization, and continuity from a single source. After all, the ongoing coronavirus pandemic and the ever more complex requirements in the digital economy continue to place additional pressure to act on small companies, big companies, and the public sector alike. We have understood this remit, and we will combine our 5G network and our fiber-optic offering with productivity solutions from strong, proven partners such as Microsoft and Cisco, but also from younger companies like Zoom, to support hybrid working. We also include here state-of-the-art cloud data storage solutions with automatic back-up functions. In addition, our business customers can further strengthen their digital business with us and our partners. And ultimately, security remains one of our major focal areas. In this regard, in several markets, we have already secured the data traffic on our mobile and fixed networks for business customers, entirely automatically and without the need for installations on the part of customers. We will continue to expand these features, as well as to constantly add to our portfolio for all sizes of business and optimize our consultancy approach with teams of experts (e.g., live demonstrations of attacks on companies from the internet, or live hacking events).

In our Europe operating segment, we expect a positive customer trend in the next two years, primarily thanks to the stronger focus on the convergence brand MagentaOne. We expect the number of TV and broadband customers to increase in both 2022 and 2023. We expect the number of mobile customers to increase slightly in 2022 and again in 2023. We expect the number of fixed-network lines to decline slightly in 2022 and remain stable in 2023.

Despite the negative impact of decisions made by regulators, we expect revenues for our Europe operating segment to increase slightly in 2022 and then remain stable in 2023 – measured on a like-for-like basis, i.e., at constant exchange rates and market conditions, and given an unchanged organizational structure. Looking at the future development of service revenues, we expect them to grow slightly in 2022 followed by a stable trend in 2023.

Vigorous competition in the markets of our operating segment could potentially put pressure on our margins. In order to be prepared for such a trend, we realize cost-cutting potential and intend to increase our productivity and exploit the benefits of digitalization, for instance by automating processes. Accordingly, we anticipate adjusted EBITDA AL to develop positively. We expect adjusted EBITDA AL to increase to around EUR 4.0 billion in 2022 and then to increase slightly in 2023.

To maintain our technology leadership, we continue to invest in our integrated networks and plan to maintain the high overall level of investments over the next few years. We expect a stable trend for cash capex in 2022 and 2023.

Systems Solutions

Overall, growth in the IT market is expected to continue apace over the next two years, while cost pressure and intense competition are likely to persist. The impact of the coronavirus pandemic has accelerated digitalization in many areas. For this reason, we expect further growth in demand for solutions from the areas of cloud services, big data, and digitalization of business processes, as well as IT security (cybersecurity).

The market for IT services is expected to continue growing over the coming years. At the same time, this market is undergoing a radical transformation, e.g., due to ongoing standardization and automation, demand for smart services, and the changes being wrought by cloud services in outsourcing business. Further challenges have arisen in the shape of digitalization, the growing importance of cybersecurity, big data, and increasing mobility. Traditional IT business will continue to decline, while cloud services, mobility, and cybersecurity may achieve double-digit growth rates. In view of all this, our plan is to continue investing increasingly in growth markets – especially in digitalization (e.g., edge computing, artificial intelligence (AI), and blockchain), multi- and hybrid cloud services, and cybersecurity.

Part of our Group strategy is the ambition to be a leading partner for business productivity. We give our customers help and guidance in implementing digital business models with our offerings for consulting, cloud services, and digitalization solutions, including data sovereignty and security, as well as through our strategic partnerships.

Under the program to transform our systems solutions business, we realigned our organization and workflows on a portfolio basis, thereby creating the basis for business transparency and dedicated portfolio management and strategy. We are continuing to drive forward expansion of the growth business (e.g., public cloud, sovereign cloud, cloud migration) while at the same time stabilizing and making further cost savings in established IT business (e.g., infrastructure solutions), with the aim of bringing about a significant shift in the revenue mix towards our growth areas.

In terms of revenue and market share, we are among the top providers in the European IT market and are market leader in Germany. Our very high levels of customer satisfaction – with a TRI*M score of 90 – are a core element in maintaining this position in the long term as well as in playing a leading role in digitalization.

Overall, we forecast slight year-on-year growth in order entry for the Systems Solutions operating segment in 2022 and again in 2023. Revenue is projected to initially remain stable in 2022 and to increase slightly in 2023. Revenue primarily comprises service revenue. The trend in service revenue thus essentially mirrors that of total revenue. Adjusted EBITDA AL is expected to increase in 2022, reaching around EUR 0.3 billion. We expect adjusted EBITDA AL to increase again in 2023. With ongoing investments in growth areas, we expect cash capex to remain stable in 2022 and 2023.

Group Development

The development of the financial performance indicators for our Group Development operating segment will in future be driven primarily by the cell towers operated as part of GD Towers.

GD Towers comprises the equity investments Deutsche Funkturm (DFMG) and Magenta Telekom Infra (MTI). With some 33,600 sites, DFMG is the biggest provider of passive wireless infrastructure for mobile communications and broadcasting in Germany. We expect demand for cell sites to rise steadily over the next few years, given that network operators plan both to close gaps in coverage and to increase the density of mobile networks to meet the growing demand for mobile data services. MTI, which bundles the Austrian cell tower business, is the second largest provider of passive wireless infrastructure for mobile communications and broadcasting in Austria, operating around 7,000 sites. Demand for cell sites is expected to rise here too over the next few years, which is why the first 5G upgrades were carried out in 2021. The pace of these upgrades will be stepped up going forward and more new sites will be built, too.

We expect the revenues of our Group Development operating segment to increase in 2022, as well as in 2023. Adjusted EBITDA AL is set to increase in 2022 to around EUR 0.6 billion and we expect to see a further increase in 2023. The positive revenue trend is mainly driven by the continued build-out of sites at DFMG and the 5G upgrades by MTI. The positive development of adjusted EBITDA AL and the EBITDA AL margin is driven by revenue growth and cost efficiencies.

We expect investments in our Group Development operating segment to grow strongly in 2022, with a stable development projected for 2023. This is primarily down to the further build-out of cell sites, the build-out of 5G, and modernization measures undertaken by DFMG in Germany, as well as the 700 MHz rollout in Austria.

Group Headquarters & Group Services

At Group Headquarters & Group Services, we will stay focused over the next two years on our ongoing efficiency enhancement measures, with which we are further optimizing our structures, especially within Group Services. We will also continue to focus on implementing our cost-cutting measures. This will primarily involve reallocating human resources, bundling standardized processes for the Group, and enhancing the value of our real estate portfolio by means of innovative space and workplace concepts. In this context, we are constantly working to optimize office space and capacities in the Group, benefiting from existing technical solutions that make it easier for our employees to organize their own place of work flexibly between home or the office. In this way, the same desks can be used by multiple employees at different times. In addition, this flexibility has also worked in our favor throughout the current pandemic, where the situation with workstations has had to be adapted frequently and at short notice. As these cost cuts will put us in a position to offer our services more cost-effectively, the operating segments stand to benefit from them as well.



In the coming years, too, our Board of Management department Technology and Innovation will drive not only the development of innovative technologies, products, and services, but also IT standardization and the ongoing establishment of centralized production platforms. Major areas of capital expenditure in the years 2022 and 2023 will include technology development, the implementation of our IT strategy, and security. We expect this to reduce overheads and capital expenditure, driven by IT operating costs and by the ongoing standardization of IT infrastructure and platforms, mainly through cloudification, automation, and retiring.

In the long term, these savings will help the Group finance its innovation endeavors. We are focusing innovation topics, such as network slicing, Open Radio Access Network (O-RAN), applications based on the new 5G mobile communications standard, evolution of a proprietary smart system for the voice control of Deutsche Telekom products and services, and introduction of a uniform operating system for routers marketed by the Group. Technological innovations will serve to safeguard the network and technology leadership of our Germany and Europe operating segments in the long term and to evolve the campus networks, which are designed to improve the integrated automation of our international industrial customers' production processes. Ultimately, every one of our investment projects revolves around enhancing the customer experience.

Risk and opportunity management

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

The assessment of the aggregate risk position is the outcome of the consolidated analysis of all material risk categories or individual risks. The aggregate risk position in 2021 was largely stable compared with the previous year. Our major challenges particularly include the regulatory factors, economic uncertainties, and intense competition and the associated price pressure in the telecommunications business, as well as the pressure to change arising from new technologies and strategic transformation. As it stands today, Deutsche Telekom AG's Board of Management sees no risk to the Group's continued existence as a going concern. As of the reporting date and the time of preparing the financial statements, there were no risks that jeopardize Deutsche Telekom AG's and key Group companies' continued existence as a going concern.

We are convinced that we will also be able to master challenges and exploit opportunities in the future without having to take on any unacceptably high risks either for our business or for society and the environment. We strive to achieve a good overall balance between opportunities and risks, with the aim of increasing added value for our stakeholders by analyzing and seizing new market opportunities.  

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



Risk and opportunity management system

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

A risk and opportunity management system of this kind is not only necessary from a business point of view; it is also required by laws and regulations, in particular § 91(2) and (3) of the German Stock Corporation Act (Aktiengesetz – AktG). Deutsche Telekom AG's Audit Committee monitors the effectiveness of the internal control system and the risk management system as required by § 107(3) sentence 2 AktG.

Our risk and opportunity management system is based on the globally applicable risk management standard of the International Standards Organization (ISO). ISO standard 31000 "Risk management – Principles and guidelines" is regarded as a guideline for internationally recognized risk management systems.

The new IDW Auditing Standard 340 on the audit of the risk early detection system came into effect on January 1, 2021. We have brought our risk and opportunity management system in line with the methodology of the new standard. The main changes are the implementation of a risk-bearing capacity concept, improvements to risk aggregation (e.g., through greater quantification of risks), as well as the renaming and in some cases reassignment of risks and opportunities to the various categories. So, for example, risks previously assigned to the category “Risks relating to innovations (substitution)” have been reassigned to the category “Market environment” according to their segment. Furthermore, the category “Risks relating to existing and future IT infrastructure, United States” have been incorporated into the category “Technology, United States.” Regarding “regulatory risks,” we have switched from a purely qualitative to a quantitative risk assessment. In addition, we have now added the category “Compliance risks.”

  Any changes to the content of the risk categories are explained in the relevant sections of the report.

Our Internal Audit unit reviews the functionality and effectiveness of elements of our risk management system at regular intervals. Under § 317 (4) of the German Commercial Code (Handelsgesetzbuch – HGB), the auditor of listed companies should assess whether the board of management has taken the measures incumbent upon it under § 91 (2) AktG in a suitable form, and whether the monitoring system stipulated by this paragraph is calculated to meet its objectives, including the early detection of developments that could put the continued existence of the company at risk. Our system complies with the statutory requirements for a risk early detection system.

In addition, our Group Controlling unit specifies a series of Group guidelines and processes for the planning, budgeting, financial management, and reporting of investments and projects. These guidelines and processes are intended to guarantee both the necessary transparency during the investment process and the consistency of investment planning and decisions in our Group and operating segments. They also provide the Board of Management with support in reaching its decisions. This process also includes the systematic identification of strategic risks and opportunities.

Organization of the risk and opportunity management system

The Group Risk Governance unit defines the methods for the risk and opportunity management system that is applied Group-wide and for the associated reporting system, in particular the Group risk report. All operating segments as well as the Group Headquarters & Group Services segment are connected to the central risk and opportunity management system of the Group via their own risk and opportunity management. The relevant owners in each of the segments are responsible for identifying, assessing, and continuously monitoring risks. Management takes potential opportunities into account in the annual planning process and continuously develops them further during business operations.

Our Group-wide risk and opportunity management system covers strategic, operational, regulatory, legal, compliance, and financial risks and opportunities for our consolidated and major non-consolidated entities. The standard process described below provides a framework. The starting point for the identification of risks and opportunities is the deviation from a planned value or company target. Once risks and opportunities have been identified, we move on to analyze and assess them in more detail. We then decide on the specific course of action to be taken, for example, in order to reduce risks or seize opportunities. The respective risk owner evaluates, implements, and monitors the associated measures. The risks are summarized in the risk reporting, which is submitted to the decision-makers in the company and/or the relevant supervisory body. This also enables transparent monitoring of the development of individual risks, as well as of the overall risk situation, including the mitigation measures taken. Our risk culture, the manner in which we deal with risks, is a key component and is embedded in all parts of the Company.

The risks and opportunity management process is described below using five elements. For purposes of simplification, “risks” is used in the following, instead of referring to “opportunities and risks” in each case. The document nonetheless focuses on both positive and negative deviations from the planned value. Risk management is therefore always a matter of opportunity and risk management.

The risk and opportunity management system



Risk culture

Our risk culture includes the basic attitudes in relation to risks and forms the basis and the framework for everyday business, for being able to make risk-oriented decisions. The risk culture is closely interlinked with Deutsche Telekom’s corporate culture, which requires risks and opportunities to be dealt with in a positive and transparent way. At the core of our risk culture is the motto “Everyone is a risk manager,” which means that, in principle, every employee takes responsibility for their risks, and handles them in accordance with the defined process.

Corporate targets

The corporate targets (or targets for the relevant individual unit derived from these) serve as the starting point for the identification of risks as deviations from planned values. These include both quantitative and qualitative targets. In order to assess the threat to the continued existence of the Company, we implemented the concept of risk-bearing capacity. Risk-bearing capacity encompasses the assets for covering possible losses. These assets are defined through equity and liquidity.

Risk analysis

Risk identification. Each segment produces a quarterly risk report or risk notification in accordance with the standards laid down by the central risk management and based on specific materiality thresholds. These reports or notifications 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. Qualitative factors affecting our strategic positioning and reputation are taken into account. We base our assessment of risks on a period of two years. This is also the length of our forecast period. If significant risks exist beyond the forecast period, these are monitored on an ongoing basis. In addition, on an annual basis, we consider “emerging risks,” which are primarily derived from external studies. These are risks and opportunities that are developing at considerable pace, and in some cases are difficult to assess. Risks and opportunities like these are triggered primarily by technological developments (e.g., digitalization), environment (e.g., climate change), or threats (e.g., cyberattacks).

Risk assessment. Individual risks are assessed on the basis of “probability of occurrence” and “risk extent.” The following assessment yardsticks apply:

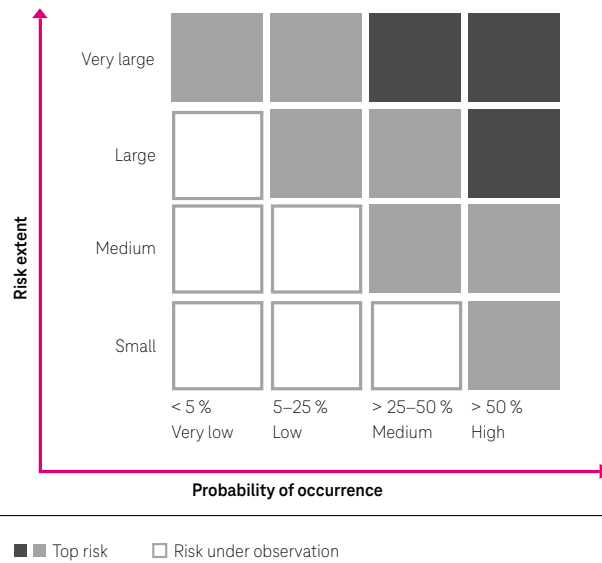
Probability of occurrence	Description
< 5 %	Very low
5 to 25 %	Low
> 25 to 50 %	Medium
> 50 %	High

Risk extent	Description
Small	Limited negative effects on business activities, results of operations, financial position, and reputation; individual EBITDA AL risk < € 200 million
Medium	Negative effects on business activities, results of operations, financial position, and reputation; individual EBITDA AL risk ≥ € 200 million
Large	Significant effects on business activities, results of operations, financial position, and reputation; individual EBITDA AL risk ≥ € 500 million, and/or affects more than one Group entity
Very large	Damaging negative effects on business activities, results of operations, financial position, and reputation; individual EBITDA AL risk ≥ € 1.0 billion, and/or affects more than one Group entity

Risk extent is primarily assessed based on EBITDA AL. However, it can also be assessed using other indicators, e.g., financial risks based on cash flow, which can also be used to assess the categories of risk. The parameters for classifying risk extent were adjusted in the 2021 financial year following a significant rise in Deutsche Telekom’s EBITDA AL on the back of organic corporate growth and the business combination of T-Mobile US and Sprint. These adjustments affect the presentation and assessment of the risks and opportunities to some extent and are shown in the table “Corporate risks.”

On the basis of our assessment using the criteria described above, we categorize the individual risks in our risk and opportunity management process as “top risks” or “risks under observation,” as shown in the graphic below.

Risk portfolio



We generally report the top risks (gray and dark ray shading) Exceptions are possible, for example, risks from prior years that we continue to list for the sake of reporting continuity although they are classified as “risk under observation” (white shading) in the current reporting period.

It should be noted that risks with an extent currently assessed as being small may in the future have a stronger impact than risks currently assessed as having a larger extent. This may be due to uncertainties that cannot be assessed at present and over which we have no influence.

For the aggregate disclosure of an overall risk position, central risk management performs an “EBITDA AL at risk” calculation for Deutsche Telekom. This states that, with a particular probability of occurrence, the risk extent ascertained using the simulation will not be exceeded. This risk aggregation is carried out using a Monte Carlo simulation, in which a large number of risk-related potential future scenarios are considered. The overall risk position is set in relation to the assets for covering possible losses.

Identification and assessment of opportunities in the annual planning process. The systematic management of risks is one side of the coin; securing the Company’s long-term success by means of integrated opportunities management is the other. That is why identifying opportunities and subjecting them to a strategic and financial assessment is an essential part of our annual planning process. It allows us to factor those opportunities into our forecasts for financial and non-financial performance indicators.

The short-term monitoring of results and the medium-term planning process help our operating segments and Group Headquarters identify and seize the opportunities in our business throughout the year. While short-term monitoring of results mainly targets opportunities for the current financial year, the medium-term planning process focuses on opportunities that are strategically important for our Group. In this context we distinguish between two types of opportunity:



- External opportunities, i.e., those with causes over which we have no influence, for example, the revocation of additional taxes in Europe.
- Internal opportunities, i.e., those that arise within the Company, for example by focusing our organizational structure on innovation and growth areas and products, or through business partnerships and collaborations from which we expect to reap synergies.

We are constantly enhancing the efficiency of our planning process so as to gain greater scope for action. The preliminary plans of our operating segments form the basis for a concentrated planning phase during which members of the Board of Management, business leaders, senior executives, and experts from all business areas intensively discuss the strategic and financial focus of the Group and its operating segments, and from all of which they ultimately produce an overall picture. The identification of opportunities from innovation and their strategic and financial assessment play a major role throughout this process. This “brainstorming” may result in opportunities being taken and transferred to the organization, or rejected and passed back to the respective working groups for revision.

Risk handling

Group insurance management. To the extent possible and economically viable, we take out adequate Group-wide insurance cover for insurable risks. DeTeAssekuranz – a subsidiary of Deutsche Telekom AG – acts as an insurance broker for group insurance management. It develops and implements solutions for the Group's operational risks using insurance and insurance-related tools and places them on the national and international insurance markets.

Taking out insurance cover is an essential option for our external risk transfer. The coverage of risks in our Group insurance programs requires the transfer of risk for the purpose of protecting the Group's financial position. That means that the possible extent of the risk must have reached a volume "relevant for the Group" or the risks have to be bundled and managed at Group level to protect the Group's interests (opportune reasons/cost optimization/risk reduction).

Business continuity management (BCM). BCM is a process within operational security and risk management that helps protect business processes from the consequences of damaging incidents and disruptions. It ensures the continuation of business processes through ongoing analysis, assessment, and management of relevant risks for people, technology, infrastructure, supply and service relationships, and information. The aim is to identify potential threats at an early stage and to keep the impact and duration of a disruption of critical business processes to an acceptable minimum by ensuring appropriate resilience in the organization plus the ability to effectively cope with threats.  

To this end, BCM identifies critical business processes and business processes requiring protection, including any supporting processes, process steps, and assets (people, technology, infrastructure, information, and supply and service relationships). Appropriate precautionary measures are also defined. In particular, security management works in coordination with the relevant units and process owners to analyze the possible consequences of external and internal threats with relevance for security, such as natural disasters, vandalism, or sabotage. Once the extent of potential losses and probability of occurrence have been assessed, preventive measures can be put in place and contingency plans developed.

Risk containment measures. The risk owners initiate and execute further measures to mitigate the risks. A wide range of measures are available, depending on the risk type. A few examples of these measures are:

- We tackle risks from the market environment with comprehensive sales controlling and intensive customer management.
- We deal with risks arising from brand and reputation by continuously analyzing the market and communications.
- We also take a whole array of measures to deal with operational risks: for example, we constantly implement operational and infrastructural measures in order to improve our networks, and offer our employees systematic training and development programs.
- We deal with risks from the political and regulatory environment through an intensive, constructive dialog with policymakers and the authorities.
- We minimize legal risks by ensuring suitable support for proceedings and by designing contracts appropriately in the first place.
- We manage interest and currency risks by means of systematic risk management and hedge them using derivative and non-derivative financial instruments.
- The Group Tax unit identifies potential tax-related risks at an early stage and systematically records, assesses, and monitors them. It takes any measures necessary to minimize tax-related risks and coordinates them with the Group companies affected. The unit also draws up and communicates policies for avoiding tax risks.

Risk monitoring

The Group risk report, which presents the main risks, is prepared for the Board of Management on a quarterly basis. The Audit Committee of the Supervisory Board of Deutsche Telekom AG also examines this report at its meetings. Furthermore, the Board of Management informs the Supervisory Board. In addition, the emerging risks are presented once a year as part of the risk report. Among other benefits, the Group risk report ensures transparent monitoring of the development of individual risks, as well as of the overall risk situation. This is supported by the new Group-wide risk management tool. If any unforeseen risks arise, they are reported ad hoc (even outside of regular reporting). We inform the Audit Committee about all of the latest developments and/or changes in the risk management system at a special meeting held annually.

Risks and opportunities

In the following section, we present all risks and opportunities of significance to the Group – including emerging risks – that, as things currently stand, could affect the results of operations, financial position, and/or reputation of Deutsche Telekom and, via the subsidiaries' results, the results of operations, financial position, and/or reputation of Deutsche Telekom AG. We only consider risks after the mitigation measures taken (net assessment). If risks and opportunities can be clearly allocated to an operating segment, this is presented accordingly in the following.

In order to make it easier to understand and see their effects, we have assigned the individually assessed risks to the following categories. Where multiple individual risks are assigned to one risk category, we calculate the risk significance on the basis of risk aggregation carried out using a Monte Carlo simulation, in which we consider the individual risks along with their individual extent and probability of occurrence. The outcome, or risk significance, is the “value at risk.” This states that, with a particular probability of occurrence, the risk extent ascertained using the simulation will not be exceeded. An expert assessment is used for risk categories that have not been quantified.

The resulting risk significance for the risk categories is broken down into four levels:

Risk significance	Description
Low	< € 200 million value at risk
Medium	≥ € 200 million value at risk
High	≥ € 500 million value at risk
Very high	≥ € 1.0 billion value at risk

This representation of risks was applied for the first time in the reporting year and reflects the stronger focus placed on quantifying risks and their aggregation. To further increase transparency we have introduced the risk significance levels described above.

Corporate risks

	Risk significance	Change against prior year ^a
Strategic risks		
Macroeconomic environment, Germany	Low	Improved ^b
Macroeconomic environment, United States	Low	Improved ^b
Macroeconomic environment, Europe	Low	Improved ^b
Market environment, Germany	Low	Improved ^b
Market environment, United States	Very high	Unchanged
Market environment, Europe	Low	Improved ^b
Strategic implementation and integration	High	Improved
Brand and reputation	Low	Unchanged
Sustainability and social responsibility	Medium	Unchanged
Health	Low	Improved ^b
Operational risks		
Technology, Germany	Low	Improved ^b
Technology, United States	High	Unchanged
Technology, Europe	Low	Improved ^b
Procurement and suppliers	Low	Unchanged
Data privacy and data security	Medium	Unchanged
Other operational risks	Low	Unchanged
Regulatory risks	Medium	-
Litigation and anti-trust proceedings	See Litigation	
Compliance risks	See Compliance risks	
Financial risks	High	Deteriorated ^b

^a The risk extent from the 2020 Annual Report is used as a comparative yardstick.

^b The change in risk significance compared with the prior year results entirely from the adjustment in the method for ascertaining risk extent.

Strategic risks and opportunities

Risks and opportunities relating to the macroeconomic environment. As an international corporation, we operate in a large number of countries, using a range of currencies. A substantial economic downturn could generally reduce the purchasing power of our customers and adversely affect our access to the capital markets. Exchange rate fluctuations could impact on our earnings.

The global economy recovered from the coronavirus crisis in 2021, however, economic development continues to be impacted by its aftermath. Leading institutes and organizations expect the recovery to continue in 2022. Overall, the general growth outlooks for Germany and Europe are positive. In January 2022, the International Monetary Fund (IMF) forecast a 3.9 % expansion of the eurozone economy for 2022 (Germany +3.8 %). Many countries in Eastern Europe saw relatively robust economic growth in 2021, and are expected to perform above the EU average again in 2022. The economic recovery is also likely to continue in the United States. Extensive relief and infrastructure packages were passed in the United States in 2021, which could, however, also entail higher U.S. corporate income tax rates and/or a minimum tax going forward, potentially increasing the tax burden for our Group company T-Mobile US. In January 2022, the International Monetary Fund (IMF) forecast a 4.0 % expansion of the U.S. economy for 2022. Economic activity in the United States returned to pre-pandemic levels in mid-2021.

However, wide-ranging supply-side bottlenecks are disrupting global value chains and, combined with ongoing pandemic-related restrictions, are slowing growth. Rising raw materials and energy prices as well as delivery and capacity bottlenecks have ramped up inflationary pressures worldwide. And this is only likely to let up slightly in 2022, with no expectation of a rapid return to the pre-pandemic very low rates of inflation.

As such, economic development is subject to not insignificant risks going forwards. New, wide-reaching pandemic-related restrictions or longstanding delivery and capacity bottlenecks could impede recovery to a greater extent than expected. Further risks result from potential geopolitical conflicts and uncertainties from international trade conflicts.

These risks are counterbalanced by opportunities, especially if the coronavirus pandemic can be effectively contained. Based on experience so far, the coronavirus pandemic is expected to have only a limited impact on Deutsche Telekom's business. If delivery and capacity bottlenecks are resolved faster than expected, this would open up the opportunity for pent-up consumer and investment demand to drive a dynamic upturn.

Risks from the market environment. The main market risks we face include the steadily falling price level for voice and data services in the fixed network and in mobile communications. In addition to price reductions imposed by regulatory authorities, this is primarily attributable to ongoing intense competition in the telecommunications industry.

Competitive pressure is expected to continue, especially in the fixed network in Germany and the countries of our Europe operating segment. In the broadband market, the trend of disproportionate growth in the market shares of regional network operators and supra-regional specialist FTTH providers, particularly in Germany, continues to establish itself. They build out their own infrastructure and thus increase their market coverage. Increasingly this is done with fiber-optic infrastructure, thereby increasing their customer numbers and expanding their own value added. There is still strong competition to gain new customers by cutting prices and offering introductory discounts.

We expect ongoing price pressure for mobile voice telephony and mobile data services, which could adversely affect our mobile service revenue. Among the main reasons for this price pressure are data-centric, aggressively priced offers. Providers that do not have their own infrastructure (MVNOs) market such offers over the internet, for instance, while there is also the risk that smaller competitors will take unforeseen, aggressive pricing measures. Technological innovations such as the use of pure eSIMs in smartphones could put further pressure on prices by increasing the willingness of customers to switch providers.


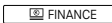
Another competitive risk lies in the fact that, both in the fixed network and in mobile communications, we are increasingly faced with competitors who are not part of the telecommunications sector as such, but are increasingly moving into the traditional telecommunications markets. This mainly relates to major players in the internet and consumer electronics industries. As a result, we are exposed to the risk of a further loss of share of value added and falling margins due to increasingly losing direct customer contact to competitors.

T-Mobile US is active in a market environment that is characterized by intensive, increasing competition. Alongside traditional telecommunications providers that deliver bundled offerings including content and mobile video services, there is additional competition, for example, Big Cable in mobile, as the mobile, fixed-network, and satellite industries increasingly converge. In addition, strategic partnerships and MVNO relationships, such as between DISH and AT&T, are being built. Potential market saturation in the United States may cause the wireless industry's customer growth rate to decline in comparison with previous years, as competition further intensifies. Although T-Mobile US has an advantage in spectrum licenses, it must push on with the network build-out, particularly in smaller markets with limited coverage and in rural areas, if it is to maintain its claim of market leadership with the best network. T-Mobile US must continue to successfully refine and implement its market strategy as Value Leader, Customer Service Leader and 5G Network Leader to maintain customer additions and retention. Should consumer behavior or customer requirements change, it could be difficult in the future to achieve targets in terms of business, financial and operational, and operating results.



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 can lead to lower prices and revenues in relation to the services offered, such as telephony, news, internet access, smart home, or television – right through to full substitution by new, global providers. These substitution risks could impact our revenue and earnings. We deal with the impact of substitution risks by, for example, offering integrated solutions with hyper-personalization and contextualization (e.g., Magenta HomeOS) in order to “turn customers into fans” and thereby secure their loyalty. The expansion of the new 5G mobile standard as a technological innovation entails uncertainties in the form of public discussions on security, safety, and electromagnetic compatibility, and the limited number of telecommunications hardware providers we include in planning scenarios.

Our Systems Solutions operating segment also faces challenges. Continued strong competition and persistent cost pressure are adversely affecting traditional IT business. In addition, the technological shift toward cloud solutions and digitalization in the IT sector is prompting new, strongly capitalized, competitors to enter the market. This may lead to revenue losses and declining margins at T-Systems.

Opportunities from the market environment. The telecommunications and IT market is extremely dynamic and highly competitive. The economic and competition conditions as well as customers' changing wants and needs affect our actions and impact on our Company indicators. We generally expect the situation to develop as described in the section “Forecast.”

In addition to the risks described, ever-shorter innovation cycles enable us to drive the digital transformation of our society and to provide our consumers and business customers with innovative products and solutions. That is why, with growing convergence of networks, IT, and products, our innovation and technology activities are decisive when it comes to identifying opportunities and making the most of them in an increasingly competitive environment. Hence, our Technology and Innovation Board of Management department has joined all relevant functions under a common leadership to ensure a close integration of innovation, network, IT, and security.   By doing so, we are putting the development of human-centered solutions and outstanding, seamless customer experiences front and center, and in the reporting year we won multiple awards, for example, for our digital assistant Frag Magenta and the product Magenta SmartHome.

For further information on our innovation activities, please refer to the section [“Technology and innovation.”](#)


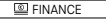
The substantial increase in capacity, bandwidth, and availability, and the lower latencies provided by the 5G mobile standard currently being rolled out offer greater reliability, security, and guaranteed service quality, for example, for industrial use cases. 5G thus offers not only the immediate opportunity of managing rapidly increasing demands in existing business models more cost-effectively going forward, but also opportunities for further business models by marketing network capabilities (e.g., network access, localization, security, identity, storage location, temporary storage, real-time processing) to relevant partners. We have already implemented the first use cases such as 5G campus networks and mobile edge computing, in which data is processed in a decentralized manner (at the edges of the network). Together with other technologies like the NarrowBand Internet of Things (NB-IoT) and artificial intelligence (AI), 5G and edge computing provide the underpinnings for the further digital transformation of society. To develop the next, sixth mobile generation, we are working with researchers on a standard that aims to address a number of current challenges facing telecommunications networks: the connection between all people, sustainability, and carbon neutrality, and the further underpinning of data privacy, trust, and security.  

Furthermore, opportunities for new project business are arising in our Systems Solutions business from innovation areas such as artificial intelligence (AI) and industrial IoT.

Risks relating to strategic implementation and integration. We are in a continuous process of strategic adjustments and cost-cutting initiatives. If we are unable to implement these projects as planned, we will be exposed to certain risks. In other words, the benefit of the measures could be less than originally estimated, take effect later than expected, or not at all. Each of these factors, individually or in combination, could have a negative impact on our business situation, financial position, and results of operations.

The business combination of T-Mobile US and Sprint was consummated on April 1, 2020. Implementing the business combination poses complex challenges for T-Mobile US, which must be successfully overcome in order to continue realizing the predicted synergies and to meet the conditions imposed by the authorities. The combination of the two companies to form the new T-Mobile US affects all operational areas. For instance, the integration of the mobile networks and the IT and technology environments, customer management, sales, HR management, logistics, and the control environment. At the same time, it will be necessary to fulfill multiple conditions, including those agreed with the antitrust and regulatory authorities such as the Federal Communications Commission (FCC), the U.S. Department of Justice (DoJ), the supervisory authorities in various U.S. states, and the Committee on Foreign Investment in the United States (CFIUS). There are numerous obligations, in particular in relation to network construction and the support of DISH in setting up an independent network. Almost a year after the merger with Sprint, T-Mobile US gave a progress update on the status of the business integration at its Analyst Day in March 2021, and stated that T-Mobile US was at that point already ahead of schedule in implementing the synergies from the business combination, as communicated at the announcement of the transaction in April 2018.

Collaboration with Chinese suppliers is being impeded by the enduring trade conflict between the United States and China. Since 2020, the United States has restricted the use of U.S. technology for and by Chinese suppliers on account of security concerns. They also put pressure on other countries to do the same. In Germany, the legislator has put an end to many years of intensive discussion concerning the security of critical infrastructure with the new Second Act to Increase the Security of Information Technology Systems, or the IT Security Act 2.0 (IT-Sicherheitsgesetz 2.0). A positive outcome is that a number of long-disputed requirements for critical infrastructure (KRITIS) have now been laid down. Deutsche Telekom itself has long been scrutinizing security-critical components prior to installation and on an ongoing basis once in operation. We therefore assume that the assessment by the authorities will also be compatible with rapid network build-out and will not lead to any long-term delays. The IT Security Act 2.0 does not include any ban on individual manufacturers. The Federal Ministry of the Interior, Building and Community is currently drafting the necessary rules (on the certification of critical components, manufacturer declarations of trustworthiness, among others) for the practical application of the IT Security Act 2.0. The requirements laid down in the security catalog, drawn up by the Bundesnetzagentur and the Federal Office for Information Security in accordance with the Telecommunications Act and published in early August 2021, will be relevant to any critical components that could potentially be affected. In respect of the certification obligation for components that have already been installed, the catalog stipulates a transition period expiring on December 31, 2025. This is why the affected components can largely be considered to be grandfathered until that point in time. The risk of a retrospective order to remove components already installed in the network is low under current legislation. However, we cannot rule out the possibility that critical components from certain manufacturers currently in use may not be deployed from January 1, 2026 onwards. Several network operators have taken steps to file official objection proceedings to clarify the ambiguous legal terminology and scope of application of the security catalog. Irrespective of this, the hurdles for retrospective orders to remove components already approved will be high. In other countries, such as Austria and Poland, it is still possible that suppliers in critical infrastructure will have to be replaced within specific deadlines. The extent of potential loss has been reduced in particular by the IT Security Act 2.0 adopted in Germany. Thanks to the improved risk situation in the implementation of synergies in the United States and in collaboration with Chinese suppliers, we have lowered the risk significance of the risk category "Strategic implementation and integration" to "high."

Opportunities relating to strategic implementation and integration.   Partnerships provide opportunities, among other benefits, to increase revenue and strengthen customer loyalty. For example, thanks to the inclusion of the new strategic area of operation Magenta Advantage in our Group strategy and the associated program, portfolio companies will receive access to digital customer interfaces and sales points from SoftBank, and thereby innovatively expand our range of services.

The logical network that has resulted from the completed IP transformation (all IP) speaks one language and, in technical terms, functions largely independently of the services transmitted. This will enable efficiency gains, e.g., by reducing the complexity of maintenance and operation, switching off service-specific legacy platforms, and saving energy. In addition, all IP will generate growth potential in the short to medium term by improving the customer experience of existing services (e.g., better voice quality, more customer self-service, greater configuration flexibility) and, in the medium to long term, by providing an indispensable basis for convergence products and the Internet of Things (IoT), and by shortening the time to market for new products.

One of the key benefits of the all-IP network is that it also acts as a foundation for the future cloud- and software-based production of networks and services. It creates opportunities to increase efficiency, accelerate the provision of new services and features, improve quality, and tap into new revenue potential, while at the same time increasing automation.

The disaggregation of the access networks (in mobile communications: Open Radio Access Network, O-RAN; in the fixed-network: Access 4.0) and core networks (e.g., the 5G core network) as part of our network differentiation strategy offers the opportunities of expanding the supplier ecosystem and, as a result, increasing competition, flexibility, and innovation. As we simultaneously drive forward automation and cloudification, we also expect a reduction in total costs and an increase in agility and speed in the provision of new services and features.

We are driving forward the transformation of our IT using agile development, decoupling, and cloudification. These approaches enable us to tap into new possibilities for accelerating developments and increasing the efficiency of IT production, by providing modular components, known as microservices, and APIs and producing them in a scalable cloud with state-of-the-art technology. Furthermore, agile and decoupled development makes it possible to reduce big bang risks in the delivery of major software releases by means of smaller, flexible software releases.

Risks and opportunities arising from brand and reputation. An unforeseeable negative media report on our products and services or our corporate activities and responsibilities can have a huge impact on the reputation of our Company and our brand image. Social networks have made it possible that such information and opinions can spread much faster and more widely. Ultimately, negative reports can impact on our revenue and our brand value. In order to avoid this, we engage in a constant, intensive, and constructive dialog, in particular with our customers, the media, and the financial world. For us, the top priority is to take as balanced a view as possible of the interests of all stakeholders and thereby uphold our reputation as a reliable partner.

Risks and opportunities relating to sustainability and social responsibility. For us, comprehensive risk and opportunity management also means considering the opportunities and risks arising from ecological or social aspects or from the management of our Company. To this end, we actively and systematically involve all relevant stakeholders in the process so as to identify current and potential risks and opportunities. In parallel with our ongoing monitoring of ecological, social, and governance issues, we systematically determine our stakeholders' positions on these issues. The key tools we use here are: our stakeholder survey; a document analysis, covering legal texts, studies, and media publications, amongst other things; our involvement in working groups and committees of national and international business associations and social organizations, e.g., GeSI, ETNO, BDI, Bitkom, Econsense, and BAGSO; stakeholder dialog formats organized by us; and our various publications, such as the press review and newsletter. We also integrate the biggest sustainability risks in our internal compliance assessment, thereby recording the associated positioning and development of measures in the various business areas.

For further information on sustainability, please refer to the section [“Corporate responsibility and non-financial statement.”](#)

We have identified the following as our main sustainability management issues:

- **Reputation.** How we deal with sustainability issues also entails both opportunities and risks for our reputation. A high level of service quality is one of the most important factors for improving customer perception. Customer satisfaction has been embedded in our Group management as a non-financial performance indicator to underline the importance of this issue. Transparency and reporting help to promote the trust of other external stakeholders in our Group. Our annual and CR reports also serve this purpose. However, issues such as business practices, data privacy, and work standards in the supply chain, conduct in relation to human rights, and ethical conduct in relation to and use of artificial intelligence also entail reputational risks: if our brands, products, or services are connected with such issues in negative media reports, this can cause substantial damage to our reputation. As part of our sustainability management activities, we continuously review such potential risks and take measures to minimize them. This includes systematically incorporating them in the Group's internal compliance management system, so as to determine the relevance of the risks in relation to sustainability issues and their effect on reputation across units. We also ascertain how our products and services make a positive contribution to sustainability in order to enhance our reputation.
- **Climate protection.** We pursue an integrated climate strategy, which means focusing not only on the risks that climate change poses for us and our stakeholders, but also on the opportunities it presents. By 2030, ICT products and services will have the potential to save up to seven times as much in CO₂ emissions in other industries as the ICT sector itself generates, even taking into account the expected rebound effects (according to the GeSI Digital for Purpose study). Taking an optimistic view, this could mean a 9% reduction in global CO₂ emissions by 2030. In addition, investments of around USD 3 trillion in innovative solutions are expected by 2030, which will not only expand the business, but will also support the SDGs. We are supporting this trend by evaluating our product portfolio to identify sustainability benefits. In addition, we want to continuously improve the ratio of the emissions that our products and services save to those generated by our own value chain.

Climate change risks are already visible in the form of increasingly extreme weather conditions. Such storm events can damage our infrastructure and disrupt network operation. This has a direct effect on our stakeholders, e.g., our customers, suppliers, and employees and can result in revenue losses or lower customer satisfaction. The risk is assessed in relation to the continuation of operations as part of risk management and is managed at an operational level in the business units. Deutsche Telekom welcomes the targets behind the Task Force on Climate-related Financial Disclosures (TCFD) and is actively working to implement them. In a first step, we conducted a gap analysis on the coverage of TCFD recommendations. In a number of workshops with relevant players from technology, procurement, strategy, and risk management, we defined Deutsche Telekom AG's key climate-related opportunities and risks and gave them an initial weighting. As a next step, we conducted a location analysis, with the example of Germany, of the physical climate risks in various scenarios (business as usual/4-degree scenario), which is now to be internationalized as part of a transnational project. In addition to the physical risks, transitory risks (threats arising from sudden adaptations to climate change made by economic sectors) are now also being analyzed in detail.

Detailed information on this will be published in our 2021 CR report.

We can take further preventive action in this area by also reducing our own CO₂ emissions. For this reason, in 2021 we set ourselves the ambitious target of cutting our CO₂ emissions across the Group (Scope 1 and 2) to net zero by 2025. Up to 95% of these emissions will be actually cut. Any remaining emissions will be offset through compensatory measures. Climate protection also carries financial risks, whether from the introduction of levies on CO₂ emissions or increased energy costs, as well as stricter requirements for products, for example in relation to energy efficiency. The measures we are taking to counter these risks include measuring our own energy efficiency and finding ways to improve it. Our new ESG targets agreed for 2021 for Board of Management remuneration in relation to the respective annual energy consumption as well as the planned annual CO₂ emissions for Scope 1 and 2 also contribute to achieving the climate targets and energy efficiency measures. We have a Group-wide program to specifically address our supply chain and we are working to optimize our products and their packaging. Since 2021, the Group has covered 100% of its electricity requirement with renewable energy. This is achieved through power purchase agreements (PPAs) and other forms of direct purchase, also by other means, such as through guarantees of origin.

For further information, please refer to the section [“Corporate responsibility and non-financial statement.”](#)

■ **Suppliers.** SDG 8 RELATIONSHIPS We see more sustainability in our supply chain as an opportunity – for our reputation and our business success. Apart from the general risks associated with our global procurement activities, we can be exposed to country- and supplier-specific risks. These include, for example, the use of child labor, the conscious acceptance of environmental damage, or inadequate local working and safety conditions. We systematically review our processes, including in terms of upcoming requirements (e.g., the German Supply Chain Due Diligence Act (Lieferkettensorgfaltspflichtengesetz)), and the same applies for our suppliers. In this way, we minimize risks. We conduct corresponding audits within the scope of the Joint Audit Corporation (JAC). The aim of the JAC is to reduce sustainability risks in our supply chain and to improve ecological and social aspects, including the issue of human rights. As such, the audit is compliant with internationally recognized guidelines and standards, such as the ILO Core Labor Standards, the UN Guiding Principles on Business and Human Rights, and the OECD Guidelines for Multinational Enterprises. Our partnerships with suppliers that comply with international sustainability standards ensure a high level of product quality and reliable procurement. We have a special development program in place to help strategic suppliers introduce business practices that are both socially and ecologically acceptable while remaining economically efficient. This program showed measurable successes again in the reporting period and has three major advantages: It has a positive impact on our suppliers' working conditions, enhances their profitability, and makes the economic relevance of sustainability clear for both sides, i.e., for our suppliers and for the Group alike. For instance, better working conditions at our suppliers reduces the number of work-related accidents as well as the attrition rate. That, in turn, ensures high product quality and increases productivity, while at the same time lowering costs for recruitment and training. Thus, not only are we strengthening our suppliers' profitability and CR performance, we are also significantly reducing identified risks.

Health. Mobile communications, or the electromagnetic fields used in mobile communications, regularly give rise to concerns among the general population about potential health risks. This issue continues to be the subject of public, political, and scientific debate. Acceptance problems among the general public mostly concern mobile communications networks and occasionally the use of mobile terminals such as smartphones, tablets, and laptops. The discussion has intensified repercussions for the build-out of the mobile infrastructure. In the fixed network, this can affect the use of traditional IP and DECT (digital cordless) phones, and devices that use Wi-Fi technology. There is a risk of regulatory interventions, such as tightened thresholds for electromagnetic fields or the implementation of precautionary measures in mobile communications, e.g., amendments to building law, or also the risk of a labeling requirement for handsets.

Over the past few years, recognized expert organizations such as the World Health Organization (WHO) and the International Commission on Non-Ionizing Radiation Protection (ICNIRP) have repeatedly reviewed the current thresholds for mobile communications and confirmed that – if these values are complied with – the use of mobile technology is safe based on current scientific knowledge. National and international expert organizations will continue to regularly review the recommended thresholds.

We are convinced that mobile communications technology is safe if specific threshold values are complied with. We are supported in this conviction by the assessment of the recognized bodies. Our responsible approach to this issue finds expression in our Group-wide EMF Policy, with which we commit ourselves to more transparency, information, participation, and support of independent mobile communications research, far beyond that which is stipulated by legal requirements. We aim to overcome concerns among the general public by pursuing an objective, scientifically well-founded, and transparent information policy. We thus continue to see it as our duty to continue our trust-based dialog with local authorities and to ensure its successful progress. This particularly applies since our long-standing collaboration with municipalities to expand the mobile network was enshrined in law in 2013. Previously, this collaboration was based on voluntary self-commitments by the network operators. SDG 3 RELATIONSHIPS

Operational risks and opportunities



Risks arising from technology. 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. The ongoing convergence of IT and NT harbors risks. In order to counter these holistically, our network, innovation, and IT activities are combined under the Board of Management department for Technology and Innovation.

Risks could arise in this area relating to all IT/NT systems and products that require internet access. For instance, faults between newly developed and existing IT/NT systems could cause interruptions to business processes, products, and services, such as smartphones and MagentaTV, or to connectivity for business customers. In order to avoid the risk of outages, e.g., due to natural disasters or fires, we use technical early warning systems and redundant IT/NT systems. The Computer Emergency Response Team (CERT) at Deutsche Telekom Security is in charge of protecting our business customers' servers. In cloud computing, all data and applications are stored at a data center. Our European data centers have security certification and meet strict data protection provisions and the EU regulations. All data relating to companies and private persons is protected from external access. Constant maintenance and automatic updates keep the security precautions up to date at all times. On the basis of a standardized Group-wide business continuity management (BCM) process, we also take organizational and technical measures to prevent damage from occurring or, if we cannot, to mitigate the subsequent effects. We also have insurance cover for insurable risks. SDG 9 FINANCE

T-Mobile US relies upon its own systems and networks and the systems and networks of other providers and suppliers, to provide and support services. T-Mobile US' business, like that of most retailers and wireless companies, involves the receipt, storage, and transmission of customers' confidential information, including sensitive personal information, payment card information, and confidential information about their employees and suppliers, as well as other sensitive information about T-Mobile US, such as business plans, transactions, and intellectual property. Cyberattacks, such as denial of service and other malicious attacks, could disrupt T-Mobile US' internal systems, networks, and applications, impair its ability to provide services to customers, and have other adverse effects on its business.

In order to grow and remain competitive with new and evolving technologies in the industry, T-Mobile US will need to adapt to future changes in technology, continually invest in its network, increase network capacity, enhance existing offerings, and introduce new offerings to address its current and potential customers' changing demands. If T-Mobile US is unable to take advantage of technological developments on a timely basis, then it may experience a decline in demand for its services or face challenges in implementing or evolving its business strategy. Following the business combination with Sprint, T-Mobile US operates and maintains several customer billing systems and will continue to run them until all of Sprint's legacy customers have been successfully migrated to T-Mobile US' existing billing systems. Unexpected difficulties or delays could cause major system or business disruptions.

Opportunities arising from technology. The utilization of large data volumes (big data) from our networks can improve and speed up decision-making processes by enhancing transparency. It does so by shifting the basis for decisions from hypotheses to facts and, for example, enabling correlations to be recognized.

Our Systems Solutions operating segment covers innovative business areas in the digital transformation of business processes, such as cloud computing, edge computing, and cybersecurity. These business areas could develop faster than expected. As a pioneer of the digital transformation, we have an opportunity not only to participate in, but also actively shape, the market trend through a variety of projects in the fields of healthcare and mobility solutions. In the ramp-up phase of these new business models based on M2M communication and big data, our partner-oriented approach is a highly promising way of contributing our core competencies – in cloud computing, edge computing, and cybersecurity – to various projects. In addition, we have references regarding strategic engagements in our focal sectors Automotive, Public, Health, and Public Transport. We also see potential for development in the sovereign clouds environment.  

As a technology and development partner for toll collection business in Europe, we already have a strong competitive position. We have earned valuable references in European toll collection projects in Belgium and Austria and through the launch of a Europe-wide toll collection system (Toll4Europe). This will help to give us an edge over our competitors.

Procurement and supply risks. Deutsche Telekom cooperates with a variety of suppliers of technical (information and communication technology) and non-technical products and services. Products and services that might involve a higher risk include software and hardware, network technology components, and all products and services provided directly to end customers.

Supply risks cannot be entirely ruled out. Pandemics, other delivery bottlenecks, price increases, changes in the prevailing economic or political conditions, or suppliers' product strategies may have a negative impact on our business processes and our results. Additional risks may also result from the dependence on individual suppliers or from individual suppliers defaulting. This is especially true for Chinese telecommunications suppliers. We employ organizational, contractual, and procurement strategy measures to counteract such risks. For example, in early 2021, the Chip Shortage Task Force was set up to assess Deutsche Telekom's risk situation at regular intervals and, where necessary, take relevant mitigating measures, and monitor their implementation.

Risks and opportunities arising from data privacy and data security

Since the introduction of the General Data Protection Regulation (GDPR), data privacy law has been largely harmonized in Europe. As a Group with its focus in Europe, Deutsche Telekom has benefited substantially from this. In the recent past, European institutions have further strengthened data protection. On July 16, 2020, the European Court of Justice (ECJ) issued a landmark judgment on Schrems II. With this ruling, Europe's highest court addressed the concerns on the level of data protection in the United States and declared the adequacy decision of the EU Commission for the United States (Privacy Shield) void. Group Privacy is working with all affected Group units to implement the requirements arising from the ruling and the publications of the European Data Protection Board. All companies in the EU, but also their contractual partners around the globe, must rise to the significant challenges of this ruling in order to be able to ensure data continues to be processed in compliance with data protection regulations going forwards.

The new requirements also affect the Group's Privacy and Security Assessment (PSA) process, which was established 12 years ago. This process, which is now fully digital, meets the requirements of the GDPR with regard to carrying out a Privacy Impact Assessment for evaluating and documenting the risks posed by data processing. For example, a Transfer Impact Assessment was integrated in the PSA process. In all new processes with a third-country dimension, all requirements from the Schrems II ruling are taken into account and documented right from development. Existing agreed standard contractual clauses, however, can still be used until the end of 2022. However, extensive inspection obligations apply for the contracting parties and the data protection authorities to verify that the data protection level is in fact adequate. Extensive technical and legal checks must be carried out for all third-country transfers and, if necessary, adjustments must be made.

The Schrems II ruling impacts on the implementation of Deutsche Telekom's cloudification activities. Prior to the relocation of workloads or applications, for example, in a cloud solution from a third country, a detailed risk analysis is carried out, both on the transfer and its potential impacts on the business, and on the ability to recall the workload or application. If it were no longer possible to use the cloud solutions in third countries, this would result in significant losses of efficiency and additional costs.

In addition, we have carefully examined technical developments and digital transformation projects to verify if they are in line with the Group strategy. Take, for example, the service app, which our customers can use to manage their Telekom products and contracts. In 2021, this standardized technical and data privacy-compliant solution was also launched in Germany. Another example is the German Corona-Warn-App and the subsequent European solution, which we continue to further develop together with the Robert Koch Institute, SAP, and other partners. Deutsche Telekom played a decisive role in the data privacy concept throughout the development of the app and coordinated between the partners, the Federal Government, and other parties involved. We were, and are, thus able to make a substantial contribution to fighting the coronavirus pandemic in Germany and Europe.

T-Systems is a signatory of the EU Cloud Code of Conduct (EU Cloud CoC). After all, the EU Cloud is synonymous with something essential, namely, nothing less than the digital sovereignty of Europe in cloud services. This refers to the complete control of stored and processed data and independent decision-making on who can access the data. This requires clear rules and requirements, which is what the EU Cloud CoC offers. The European data protection authorities authorized this Code of Conduct. By becoming a signatory, the Company and hence also T-Systems undertakes to continue to increase the data protection level for cloud services in the interests of customers and European data protection. In this way they provide proof that data is processed in accordance with the requirements of the GDPR. Compliance with the rules is reviewed by an independent body.

However, since the ePrivacy Regulation has still not yet been adopted, there is yet another sector-specific regulatory challenge for the telecommunications sector in the EU. As telecommunications providers' data processing options are substantially restricted compared with what is possible under the GDPR, innovative big data and artificial intelligence applications in the field of telecommunications cannot realize the same kind of potential as those of companies that are only subject to the GDPR.

IT security continues to pose major challenges. In addition to preventive measures such as integrated security in business processes and measures to raise security awareness among employees, we counter these challenges with increased focus on the analysis of threats and cyber risks. This is where our early warning system comes in: It detects new sources and types of cyberattack, analyzes the behavior of the attackers while maintaining strict data privacy, and identifies new trends in the field of security. Along with the honeypot systems, which simulate vulnerabilities in IT systems, our early warning system includes alerts and analytical tools for spam mails, viruses, and Trojans. We exchange the information we obtain from all these systems with public and private bodies to detect new attack patterns and develop new protection systems.

Cybercrime and industrial espionage are on the rise and are becoming ever more complex due to rapidly advancing technologies and attack methods. As a result, we face constant challenges and adjustments to protect our customer and business partner data, as well as our networks, technologies, products, and services against these attacks. Such incidents can lead, among other things, to business disruptions, embezzlement, or unauthorized access to confidential or personal information, and to loss of reputation. We are addressing these risks with comprehensive security concepts. In order to create greater transparency and thus be in a stronger position to tackle these threats, we are relying more and more on partnerships, e.g., with public and private organizations. By means of the Security by Design principle, we have made security an integral part of our development process for new products and information systems. In addition, we carry out intensive and obligatory digital security tests.

We are continually striving to accelerate our growth through IT security solutions. To this end, we have combined our security units within Deutsche Telekom Security. We want to leverage this end-to-end security portfolio to secure market shares and score points with security concepts on the back of megatrends like the Internet of Things and Industry 4.0. We are also continuing to gradually expand our partner ecosystem in the area of cybersecurity.

We provide regular updates on the latest developments in data protection and data security on our [website](#).

Other operational risks and opportunities

Employees. Our employees play a crucial role in the transformation of Deutsche Telekom. Their skills are a key factor to our business success. In view of the strained market situation, recruitment of new employees/experts for business-critical areas such as IT is very challenging and essential for business success.

In 2021, we once again used socially responsible measures to restructure the workforce in our Group. Early retirement models such as phased and dedicated retirement, and severance payments have been largely taken up, but also the training and placement of civil servants in the public sector by Vivento has proved very popular. The transformation with the associated staff restructuring is extremely important for achieving the Group's goals. Nevertheless, it is essential the restructuring is managed in a targeted way. That is why, for each request by an employee to take up a staff reduction instrument, it must be ensured on principle that the arrangement is voluntary on both sides (agreed by employee and manager), so as to avoid, for example, the loss of high performers.

The Company still employs numerous civil servants, who originally belonged to Group units of Deutsche Telekom that have since been sold. Where requested, these civil servants have been granted temporary leave from their civil servant status. However, there is a risk that they may return to us from a sold entity, for instance after the end of their temporary leave from civil servant status, without the Company being able to offer them jobs. Currently, 1,174 civil servants are entitled to return from outside the Group in this way (as of December 31, 2021), thus posing a risk.

Risks and opportunities relating to regulation

In the following section, we describe the main regulatory risks and opportunities that, as things currently stand, could affect our results of operations and financial position, and our reputation.

Regulatory risks arise from telecommunications-specific statutory regulations at the national, European, and U.S. level, and from the consequent powers of national authorities to regulate or intervene in the market and limit our freedom as regards product design and pricing. Deregulation can give rise to regulatory opportunities. Regulatory intervention, which we can only anticipate to a limited extent, may exacerbate existing price and competitive pressure. There are concerns that regulation in the United States, Germany, and other European countries may also impact revenue and earnings trends in the medium to long term.

Changes in regulatory policy and legislation

European Electronic Communications Code (EECC) transposed into national law. The transposition of the EECC into national law in each of Deutsche Telekom's footprint countries confers both opportunities, in particular for a shift towards more investment-friendly regulation, and risks, primarily in connection with the higher costs of transposing extended consumer protection provisions and operational implementation into processes. The rules are already in place in Germany in the form of the Telecommunications Modernization Act (Telekommunikationsmodernisierungsgesetz – TKMoG), which entered into force on December 1, 2021. The legislative process for the EECC has also been completed or is underway in the countries of our European subsidiaries.

For more information on the EECC, please refer to the section "[The economic environment – Major regulatory decisions.](#)"

The revision of the EU legal framework for telecommunications remains part of a package of new EU legislation on the single market for electronic communications that provides for amendments to the regulations governing media services – mainly due to the growing importance of internet offerings – which are competing with the TV services previously focused on (e.g., regarding copyright law, laws for the protection of minors from harmful media, consumer protection, and the liability of internet service providers (in particular hosting) for third-party content). At the national level, too, specific amendments (for instance, to the German State Media Treaty and the German Telemedia Act, as well as to competition law) have recently been made in response to digitalization and convergence trends.

For further information on key regulatory decisions, please refer to the section "[The economic environment.](#)"

In the United States, too, new or amended wireless-related provisions and laws can increase the complexity of processes and lead to higher costs for T-Mobile US.

Awarding of spectrum

Risks could arise from the fact that inappropriate auction rules and frequency usage requirements, excessive reserve prices, or disproportionately high annual spectrum fees could jeopardize our planned acquisition of spectrum. Inappropriate conditions for the awarding of spectrum can include, for example, extensive build-out requirements and, in some cases, requirements to grant network access (national roaming, service provider access). By contrast, we see an opportunity in particular in the fact that such spectrum award procedures enable mobile network operators to obtain the optimum amount of spectrum for their future business. We would thus be equipped for further growth and innovation. The upcoming award procedures mainly relate to the auctioning of additional spectrum in the 700 MHz, 800 MHz, 900 MHz, 1,800 MHz, and the 3,400 MHz to 3,800 MHz ranges. In addition, spectrum licenses, especially in the 2,100 MHz and 2,600 MHz ranges, will expire between 2022 and 2024 in some countries and need to be renewed. Award procedures are currently being prepared, primarily in Croatia, Poland, Romania, Slovakia, the Czech Republic, and the United States.

For further information on spectrum auctions that were completed in 2021 or are still ongoing, please refer to the section [“The economic environment.”](#)

Areas in which national regulators may intervene

European and national laws and regulations grant national regulators extensive powers of intervention. In addition to the aforementioned EECC, a case in point at the European level is the **EU Regulation concerning the single market for electronic communications**, which was enacted in 2015. It contains provisions on international roaming, net neutrality, and obligations to provide information. These provisions restrict our product design options, mainly as regards retail products. The Body of European Regulators for Electronic Communications (BEREC) has published guidelines for implementing this regulation. Risks arise from how the national regulators interpret both the regulation and these guidelines. When the Telecommunications Modernization Act entered into force in December 2021, the previously non-binding communication by the Bundesnetzagentur on the interpretation of certain parts of the regulation was replaced by a legally binding administrative order issued by the Bundesnetzagentur. In addition, national regulatory authorities have wide-ranging powers under law to require products to be adjusted in order to enforce the regulation and to impose fines in cases of non-compliance.

Our Group companies in Germany and Europe continue to be subject to extensive **regulation of wholesale products**, obligating us to make our network and services available to our competitors wherever we are deemed to have significant market power as an operator. The national regulators regularly check and determine the corresponding terms, conditions, and prices of these wholesale offerings. The key wholesale products subject to regulation are unbundled local loop lines, bitstream products, leased lines, and the associated services. Since 2021, termination rates have been determined directly by the European Commission by way of a **delegated act**. In addition, European and national **consumer protection regulations** apply. The amendment to the German Telecommunications Act (Telekommunikationsgesetz), which entered into force on December 1, 2021, introduced additional **transparency provisions**. Consumers who find substantial deviations in bandwidth using the bandwidth measuring program provided by the Bundesnetzagentur can also reduce their monthly charge or terminate their contract. In addition, in the event of missed technician appointments or faults that are not remedied in a timely manner, lump-sum damages can be claimed.

In addition to the requirements of telecommunications law, our media products are also subject to special European and national regulations under **media law**, as well as non-sector-specific regulations such as data and consumer protection. These include, in the broader sense, copyright law, regulations concerning the responsibility for published content, requirements in relation to ensuring the protection of minors in the media, and requirements in relation to the content and user interfaces of media distribution platforms. Barring any changes to its shareholder structure on the one hand (the Federal Republic and KfW being its major shareholders), or to the legal situation, or the prevailing opinions of media regulators on the other, it is unlikely that Telekom Deutschland will be granted a license to broadcast radio and television programs.

New state interventions in the context of cybersecurity in Poland under debate. In January 2021, the Polish government published a draft for a cybersecurity act and new provisions for an amendment to the national telecommunications act. These changes would give new mobile network operators privileged access to resources to foster their establishment in the market. This could result in unfair competition and negatively affect the competitive standing of our mobile communications subsidiary in Poland. The second draft for the Cyber Security Act published on October 12, 2021 and the associated provisions in the Polish Telecommunications Act continue to give rise to risks to free access to frequency resources for the 5G network build-out in the near future.

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 individual litigation and anti-trust proceedings are not made, we concluded that these disclosures may seriously undermine the outcome of the relevant proceedings.

Prospectus liability proceedings (third public offering, or DT3). This relates to initially around 2,600 ongoing lawsuits from some 16,000 alleged buyers of T-Shares sold on the basis of the prospectus published on May 26, 2000. The plaintiffs assert that individual figures given in this prospectus were inaccurate or incomplete. The amount in dispute currently totals approximately EUR 78 million plus interest. Some of the actions are also directed at KfW and/or the Federal Republic of Germany as well as the banks that handled the issuances. The Frankfurt/Main Regional Court had issued orders for reference to the Frankfurt/Main Higher Regional Court in accordance with the German Capital Investor Model Proceedings Act (Kapitalanleger-Musterverfahrensgesetz – KapMuG) and has temporarily suspended the initial proceedings. On May 16, 2012, the Frankfurt/Main Higher Regional Court had ruled that there were no material errors in Deutsche Telekom AG's prospectus. In its decision on October 21, 2014, the Federal Court of Justice partly revoked this ruling, determined that there was a mistake in the prospectus, and referred the case back to the Frankfurt/Main Higher Regional Court. On November 30, 2016, the Frankfurt/Main Higher Regional Court ruled that the mistake in the prospectus identified by the Federal Court of Justice could result in liability on the part of Deutsche Telekom AG, although the details of that liability would have to be established in the initial proceedings. Following an appeal from both parties, in February 2021, the Federal Court of Justice once again referred the proceedings back to the Frankfurt/Main Higher Regional Court for further consideration. In November 2021, Deutsche Telekom AG presented a settlement concept under which a concrete settlement offer is to be made to every eligible plaintiff. The settlement offers are made without any judicial decision and do not constitute an admission of liability on the part of Deutsche Telekom AG. Deutsche Telekom AG has recognized appropriate provisions for risk in the statement of financial position.

Claims relating to charges for the shared use of cable ducts. In 2012, Kabel Deutschland Vertrieb und Service GmbH (today Vodafone Deutschland GmbH (VKDG)) filed a claim against Telekom Deutschland GmbH to reduce the annual charge for the rights to use cable duct capacities. According to VKDG's latest estimates, its claims amounted to around EUR 624 million for the period from 2009 to mid-2018, along with around EUR 9 million for the alleged benefit from additional interest, plus interest in each case, and the company is also demanding a considerable reduction of the charges for the following years. In similar proceedings, the then Unitymedia Hessen GmbH & Co. KG, Unitymedia NRW GmbH, and Kabel BW GmbH (today Vodafone Hessen et al.) filed claims against Telekom Deutschland GmbH in January 2013, demanding that it cease charging the plaintiffs more than a specific and precisely stated amount for the shared use of cable ducts, including in the future. The plaintiffs are demanding a refund, most recently calculated at approximately EUR 570 million plus interest for the years 2009 to 2017. The claims were recently rejected by the Frankfurt Higher Regional Court (VKDG) and by the Düsseldorf Higher Regional Court (Vodafone Hessen et al.) and an appeal was not allowed in both cases. In response to the complaints of the plaintiffs against non-allowance of appeal, the Federal Court of Justice allowed the appeal by VKDG to the extent that it relates to claims dating from January 1, 2012; the appeal by Vodafone Hessen et al. was allowed to the extent that it relates to claims dating from January 1, 2016. The claims were rejected with legally binding effect for the time periods prior to this, which leads to a significant reduction in current calculations of claims. In a ruling on December 14, 2021, the Federal Court of Justice referred the proceedings concerning the remaining claims back to the responsible Higher Regional Courts for a new hearing and decision. At present the financial impact of both these proceedings cannot be assessed with sufficient certainty.

Sprint Merger class action. On June 4, 2021, a shareholder class action and derivative action was filed in the Delaware Court of Chancery against Deutsche Telekom AG, SoftBank, T-Mobile US, and all of our officers and directors at that time, asserting breach of fiduciary duties relating to the repricing amendment to the Business Combination Agreement, as well as SoftBank's subsequent monetization of its T-Mobile US shares. On October 29, 2021, the complaint was amended. The amended complaint is directed at the same defendants and the same underlying transactions as in the original action; however, it includes additional submission on alleged facts. At present, the financial impact of these proceedings cannot be assessed with sufficient certainty.

Proceedings against T-Mobile US as a consequence of the cyberattack on T-Mobile US. In August 2021, T-Mobile US confirmed that their systems had been subject to a criminal cyberattack that compromised data of millions of their customers, former customers, and prospective customers. With the assistance of outside cybersecurity experts, T-Mobile US located and closed the unauthorized access to their systems and identified customers whose information was impacted and notified them, consistent with state and federal requirements. As a result of the cyberattack, numerous consumer class actions were filed against T-Mobile US. The class actions brought in before the federal courts were consolidated to one action in December 2021. The plaintiffs are claiming damages in an as yet unspecified amount. Moreover, in November 2021 a derivative action was filed against the members of the Board of Directors of T-Mobile US. T-Mobile US is also named as a nominal defendant in this lawsuit. The plaintiff is making various unquantified claims in relation to the company's cybersecurity practices. In addition, inquiries have been made by various government agencies, law enforcement and other state authorities. At present the financial impact of these proceedings cannot be assessed 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.

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

Proceedings concluded

Claim for damages in Malaysia despite an earlier, contrary, legally binding arbitration ruling. In 2006, Celcom Malaysia Berhad (Celcom) and Technology Resources Industries Berhad pursued actions with the state courts in Kuala Lumpur, Malaysia, against eleven defendants in total, including DeTeAsia Holding GmbH, a subsidiary of Deutsche Telekom AG, for damages and compensation in the amount of USD 232 million plus interest. DeTeAsia Holding GmbH had enforced this amount against Celcom in 2005 on the basis of a final arbitral award in its favor. After DeTeAsia Holding GmbH agreed a mutual settlement with the plaintiffs – without recognition of a legal obligation on both sides – the claim against defendants including DeTeAsia Holding GmbH was withdrawn in full with legally binding effect in November 2021.

Anti-trust proceedings

Like all companies, our Group is subject to anti-trust law. In recent years, we have notably stepped up our compliance efforts in this area too. Nevertheless, Deutsche Telekom and its subsidiaries are from time to time subject to proceedings under anti-trust law or follow-on damage actions under civil law. In the following, we describe material anti-trust proceedings and resulting claims for damages.

Claims for damages against Slovak Telekom following a European Commission decision to impose fines. The European Commission decided on October 15, 2014 that Slovak Telekom had abused its market power on the Slovak broadband market and as a result imposed fines on Slovak Telekom and Deutsche Telekom AG, which were paid in full in January 2015. After the General Court of the European Union partially overturned the European Commission's decision in 2018 and reduced the fines by a total of EUR 13 million, the legal recourse following the ruling of the European Court of Justice on March 25, 2021 is exhausted. Following the decision of the European Commission, competitors filed damage actions against Slovak Telekom with the civil court in Bratislava. These claims seek compensation for alleged damages due to Slovak Telekom's abuse of a dominant market position, as determined by the European Commission. At present, two claims totaling EUR 112 million plus interest are still pending. It is currently not possible to estimate the financial impact with sufficient certainty.

Claims for damages against Deutsche Telekom AG, including due to insolvency of Phones4U. Phones4U was an independent British mobile retailer, which declared insolvency in 2013. The insolvency administrator is pursuing claims before the High Court of Justice in London against the mobile providers active on the UK market at that time and their parent companies on the grounds of alleged collusion in violation of anti-trust law and breach of contract. Deutsche Telekom AG, which at that time held 50 % of the mobile company EE Limited, has rejected the claims as unsubstantiated, including at the Case Management Conference in October 2021, but will nevertheless have to take part in the court proceedings, which are expected to begin in May 2022. Phones4U has yet to state the amount of its claim for damages. It is currently not possible to estimate the financial impact with sufficient certainty.

Compliance risks

Compliance-relevant risks are all potential infringements by members of executive bodies or employees that could give rise to administrative or criminal liability on the part of the Company or result in a material loss of reputation. In order to minimize these risks, we have set up a compliance management system. Our compliance management system is based on the Compliance Risk Assessments (CRAs), which we use to identify and assess compliance risks and introduce suitable preventative measures. The TellMe whistleblower portal is available to employees and external parties for reporting breaches or suspected breaches of the law or of internal policies and regulations. We have set up the AskMe advice portal to address all kinds of issues relating to compliance. The portal contains reliable information for employees on laws, internal policies, and rules of conduct relevant to their daily activities. [SDG 16](#) [EMPLOYEES](#)

For more information, please refer to the section "Ethical business practices and compliance" under "[Corporate responsibility and non-financial statement](#)."

Financial risks and opportunities

Liquidity, credit, currency, interest rate risks

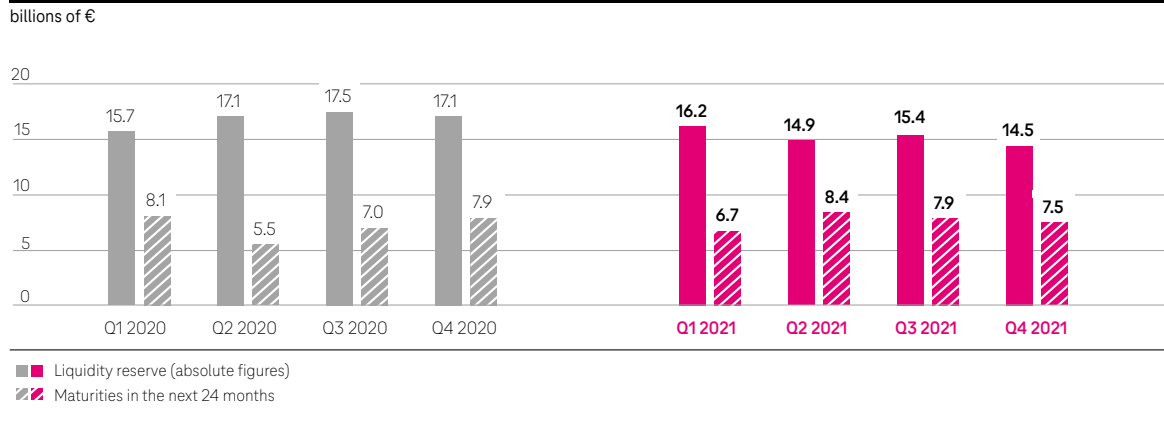
With regard to its assets, liabilities, and planned transactions, our Group is particularly exposed to liquidity risks, credit risks, and the risk of changes in exchange rates and interest rates. We want to contain these risks. Risks with an impact on cash flows are monitored in a standard process and hedged accordingly using derivative and non-derivative hedges. Derivative financial instruments are used solely for hedging and never for speculative purposes. The following risk areas – liquidity, credit, currency, and interest rate risks – are evaluated taking into account all hedges.

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

Liquidity risk. To ensure the Group’s and Deutsche Telekom AG’s solvency and financial flexibility at all times, we maintain a liquidity reserve in the form of credit lines and cash as part of our liquidity management. Since the successful business combination of T-Mobile US and Sprint, T-Mobile US has pursued its own separate financing and liquidity strategy.

Deutsche Telekom (excluding T-Mobile US): Primarily bilateral credit agreements with 21 banks with an aggregate total volume of EUR 12.6 billion were available as of December 31, 2021, of which EUR 0.1 billion were utilized. Our liquidity reserve covered maturing bonds and long-term loans at all times for at least the next 24 months (see graphic below).

Development of the liquidity reserve (excluding T-Mobile US), maturities in 2020/2021



T-Mobile US: Bilateral credit lines with an aggregate total volume of USD 5.5 billion (EUR 4.9 billion) plus a cash balance of USD 6.6 billion (EUR 5.9 billion) were available as of December 31, 2021.

Credit risks. In our operating business and certain banking activities, we are exposed to a credit risk, i.e., the risk that a counterparty will not fulfill its contractual obligations. To keep this credit risk to a minimum, we conclude transactions with regard to financing activities only with counterparties that have at least a credit rating of BBB+/Baa1; we also actively manage limits. In addition, we have concluded collateral agreements for our derivative transactions. At the level of operations, the outstanding debts are continuously monitored in each area, i.e., locally.

Currency risks. Currency risks result from investments, financing measures, and operations. Risks from foreign-currency fluctuations are hedged if they affect the Group’s cash flows. However, foreign-currency risks that do not influence the Group’s cash flows (e.g., risks resulting from the translation of assets and liabilities of foreign operations into euros) are not hedged. Deutsche Telekom may nevertheless also hedge these foreign-currency risks under certain circumstances.

Interest rate risks. Our interest rate risks mainly result from Group financing: On the one hand, we have an interest rate risk relating to the issue of new liabilities, and on the other, we have an interest rate risk arising from variable-interest liabilities. The euro interest rate position is managed as part of our interest rate management activities. Each year, a maximum is set for the percentage of variable-interest liabilities. The USD debt position of T-Mobile US primarily comprises partially cancelable, fixed-income bonds.

For further information, please refer to Note 40 “Financial instruments and risk management” in the notes to the consolidated financial statements.

Tax risks

We are subject to the applicable tax laws in many different countries. Risks can arise from changes in local taxation laws or case law and different interpretations of existing provisions. These risks can impact both our tax expense and benefit as well as tax receivables and liabilities.

Other financial risks and opportunities

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. Deutsche Telekom’s credit rating affects our access to the capital markets, to the international finance markets, and our refinancing costs. A lower rating could impede access to the capital market and, over time, would lead to an increase in the cost of debt financing. We intend to maintain our rating in a corridor from A- to BBB and thereby safeguard undisputed access to the capital market. As of December 31, 2021, Deutsche Telekom AG’s credit rating with Moody’s was Baa1 with a stable outlook, while Standard & Poor’s rated us BBB with a stable outlook, and Fitch confirmed its current rating of BBB+ with a stable outlook. From today’s perspective, access to the international debt capital markets for both Deutsche Telekom AG and T-Mobile US is not jeopardized.

Sales of shares by the Federal Republic or KfW Bankengruppe. As of December 31, 2021, the Federal Republic and KfW Bankengruppe jointly held 30.5 % in Deutsche Telekom AG. It is possible that the Federal Republic will continue its policy of privatization and sell further equity interests in a manner designed not to disrupt the capital markets and with the involvement of KfW Bankengruppe. There is a risk that the sale of a significant volume of shares by the Federal Republic or KfW Bankengruppe, or any speculation to this effect, could have a negative impact on the price of the T-Share.

Impact of the CR strategy on the value of the Company. Our CR strategy enhances the value of our Company in the long term, which also has a positive effect of reducing business risks. Investors with a long-term horizon acknowledge this approach. In the capital markets, this is evident, for example, in the proportion of T-Shares held by investors that base their investment decisions, at least in part, on sustainability criteria. As of September 30, 2021, around 12 % of all T-Shares were held by SRI (socially responsible investment) investors, and 10 % were held by investors who manage their funds primarily in accordance with SRI aspects. 🏠 SDG 8 🏢 FINANCE

Impairment of Deutsche Telekom AG's assets. The value of the assets of Deutsche Telekom AG and its subsidiaries is reviewed periodically. In addition to the regular annual measurements, specific impairment tests may be carried out, for example, where changes in the economic, regulatory, business, or political environment suggest that the value of goodwill, intangible assets, property, plant and equipment, investments accounted for using the equity method, or other financial assets might have decreased. These tests may lead to the recognition of impairment losses that do not, however, result in cash outflows. This could impact to a considerable extent on our results, which in turn may negatively affect the T-Share price.

For further information, please refer to the section [“Summary of accounting policies – Judgments and estimates”](#) in the notes to the consolidated financial statements.

Governance and other disclosures

Governance

As of December 31, 2021, **Board of Management** responsibilities were distributed across eight Board departments.

Four of these cover cross-functional management areas:

- Chairman of the Board of Management
- and the Board of Management departments
- Finance
 - Human Resources and Legal Affairs
 - Technology and Innovation.

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

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

Composition of the Board of Management as of December 31, 2021

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

On February 25, 2021, the Supervisory Board resolved to reappoint Birgit Bohle as the Board of Management member for Human Resources and Legal Affairs for the period from January 1, 2022 through December 31, 2026. Also on February 25, 2021, the Supervisory Board resolved to reappoint Thorsten Langheim as the Board of Management member for USA and Group Development for the period from January 1, 2022 through December 31, 2026. Furthermore, on December 15, 2021, the Supervisory Board resolved to cancel Timotheus Höttges' appointment as Chairman of the Board of Management effective December 31, 2021, and reappointed Mr. Höttges as Chairman of the Board of Management for the period from January 1, 2022 through December 31, 2026.

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

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

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

The **remuneration system** for the Board of Management provides incentives to successfully implement the corporate strategy, to ensure a sustainable development of the Company, and is also focused on creating long-term value for our shareholders. The remuneration received by the members of the Supervisory Board is specified under § 13 of the Articles of Incorporation of Deutsche Telekom AG. Under the remuneration system, members of the Supervisory Board received fixed annual remuneration. The recommendations of the German Corporate Governance Code (GCGC), as published in the Federal Gazette on March 20, 2020, on "Remuneration of the Management Board and the Supervisory Board" (Section G) were complied with.

| Detailed information on the remuneration of the Board of Management and the Supervisory Board is published in the separate [remuneration report](#).

Members of the Board of Management and Supervisory Board of Deutsche Telekom AG were reported to have purchased and transferred 308,258 shares (2020: 353,569) and sold 0 shares (2020: 90,215) inter alia under the Share Matching Plan and as personal investments in the course of 2021. Total direct or indirect **shareholdings** in the Company or associated financial instruments by members of the Board of Management and the Supervisory Board do not exceed 1% of the shares issued by the Company.

Significant events after the reporting period

For information on events after the reporting period, please refer to Note 46 "[Events after the reporting period](#)" in the notes to the consolidated financial statements and to the notes to the annual financial statements of Deutsche Telekom AG as of December 31, 2021.

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 in conjunction with § 107 (4) sentence 1 AktG. The Board of Management is responsible for defining the scope and structure of the ICS at its discretion in accordance with § 91 (3) AktG. Internal Audit is responsible for independently reviewing the functionality and effectiveness of the ICS in the Group and at Deutsche Telekom AG, and, to comply with this task, has comprehensive information, audit, and inspection rights.

The accounting-related ICS comprises the principles, methods, and measures used to ensure appropriate accounting. It is continuously being refined and aims to ensure the consolidated financial statements of Deutsche Telekom are prepared in accordance with the International Financial Reporting Standards (IFRS) as adopted by the European Union, as well as with the regulations under commercial law as set forth in § 315e (1) HGB. Another objective of the accounting-related ICS is the preparation of the annual financial statements of Deutsche Telekom AG and the combined management report in accordance with German GAAP.

It is generally true of any ICS that regardless of how it is specifically structured there can be no absolute guarantee that it will achieve its objectives. Therefore, as regards the accounting-related ICS, there can only ever be relative, but no absolute, certainty that material accounting misstatements can be prevented or detected.

Group Accounting manages the processes of Group accounting and management reporting. Legal provisions, 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 experts, for example, to measure pension obligations or in connection with purchase price allocations. 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, regulations, and procedures are complied with. The Group companies ensure the compliance and timeliness of their accounting-related processes and systems and, in doing so, are supported and monitored by Group Accounting.

Operational accounting processes at the national and international level are increasingly managed by our shared service centers. Harmonizing the processes enhances their efficiency and quality and, in turn, improves the reliability of the internal ICS. The ICS thus safeguards both the quality of internal processes at the shared service centers and the interfaces to the Group companies by means of adequate controls and an internal certification process.

Internal controls are embedded in the accounting process depending on risk levels. The accounting-related ICS comprises both preventive and detective controls, which include:

- IT-based and manual matching
- The segregation of functions
- The dual-checking principle
- Monitoring controls
- General IT checks such as access management in IT systems, and change management

The ICS is continuously developed in line with the operating processes, systematically responding to new technologies and ways of working. These include the use of software robots, real-time alarms, artificial intelligence, and agile working.

We have implemented a standardized process throughout the Group for monitoring the effectiveness of the accounting-related ICS. This process systematically focuses on risks of possible misstatements in the consolidated financial statements. At the beginning of the year, specific accounts and accounting-related process steps are selected based on risk factors. They are then reviewed for effectiveness in the course of the year. If control weaknesses are found, they are analyzed and assessed, particularly in terms of their impact on the consolidated financial statements and the combined management report. Material control weaknesses, the action plans for eradicating them, and ongoing progress are reported to the Board of Management and additionally to the Audit Committee of the Supervisory Board of Deutsche Telekom AG. In order to ensure a high-quality accounting-related ICS, Internal Audit is closely involved in all stages of the process.

Corporate Governance Statement and Declaration of Conformity

The Corporate Governance Statement pursuant to § 289f, § 315d HGB and the Declaration of Conformity pursuant to § 161 AktG are available on our [Investor Relations website](#).

Legal structure of the Group

Deutsche Telekom AG, Bonn, is the parent of the Deutsche Telekom Group. Its shares are traded on the Frankfurt/Main Stock Exchange as well as on other stock exchanges.

For information on the composition of capital stock in accordance with § 289a (1) HGB and § 315a HGB of direct and indirect equity investments, please refer to Note 19 “Shareholders’ equity” in the notes to the consolidated financial statements and to the notes to the annual financial statements of Deutsche Telekom AG as of December 31, 2021.

Shareholders’ equity

Each share entitles the holder to one vote. These voting rights are restricted, however, in relation to treasury shares (at December 31, 2021: around 15 million in total).

Capital increase. In connection with the agreement concluded on September 6, 2021 between Deutsche Telekom AG and SoftBank Group Corp., Tokyo, for the acquisition of around 45.4 million T-Mobile US shares, an increase in issued capital was entered in the commercial register and executed on September 28, 2021 by issuing 225 million no par value shares at the lowest issue price of EUR 2.56 per share against contribution in kind. Issued capital was increased by EUR 576 million in total. The non-cash capital increase was executed by SoftBank contributing 45.4 million T-Mobile US shares to Deutsche Telekom AG in return for the transfer of 225 million new Deutsche Telekom AG shares from the 2017 Authorized Capital. The number of Deutsche Telekom’s outstanding shares increased as a result from 4,761 million to 4,986 million shares.

Treasury shares. The amount of issued capital assigned to treasury shares was approximately EUR 37 million at December 31, 2021. This equates to 0.3 % of share capital. 14,517,728 treasury shares were held at December 31, 2021.

For information on the treasury shares in accordance with § 160 (1) No. 2 AktG, please refer to Note 8 in the annual financial statements of Deutsche Telekom AG as of December 31, 2021 and to Note 19 “Shareholders’ equity” in the notes to the consolidated financial statements.

The shareholders’ meeting resolved on April 1, 2021 to authorize the Board of Management to purchase shares in the Company by March 31, 2026, with the amount of share capital accounted for by these shares totaling up to EUR 1,218,933,400.57, provided the shares to be purchased on the basis of this authorization in conjunction with the other shares of the Company that the Company has already purchased and still possesses or are to be assigned to it under § 71d and § 71e AktG do not at any time account for more than 10 % of the Company’s share capital. Moreover, the requirements under § 71 (2) sentences 2 and 3 AktG must be complied with. Shares shall not be purchased for the purpose of trading in treasury shares. This authorization may be exercised in full or in part. The purchase can be carried out in partial tranches spread over various purchase dates within the authorization period until the maximum purchase volume is reached. Dependent Group companies of Deutsche Telekom AG within the meaning of § 17 AktG or third parties acting for the account of Deutsche Telekom AG or for the account of dependent Group companies of Deutsche Telekom AG within the meaning of § 17 AktG are also entitled to purchase the shares. The shares are purchased through the stock exchange in adherence to the principle of equal treatment (§ 53a AktG). Shares can instead also be purchased by means of a public purchase or share exchange offer addressed to all shareholders, which, subject to a subsequently approved exclusion of the right to offer shares, must also comply with the principle of equal treatment.

The shares may be used for one or several of the purposes permitted by the authorization granted by the shareholders' meeting on April 1, 2021 under item 7 on the agenda. The shares may also be used for purposes involving an exclusion of subscription rights. In addition, they may be sold on the stock market or by way of an offer to all shareholders, or withdrawn. The shares may 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 remuneration of the Board of Management, on the basis of a decision by the Supervisory Board to this effect. Furthermore, under the authorization granted on April 1, 2021, the Board of Management is authorized to offer and/or grant shares to employees of Deutsche Telekom and of lower-tier affiliated companies as well as to Managing Board members of lower-tier affiliated companies; this also includes the authorization to offer or grant shares free of charge or on other special conditions.

Under the resolution of the shareholders' meeting on April 1, 2021, the Board of Management is also authorized to acquire the shares through the use of equity derivatives.

No treasury shares were acquired in the reporting period and in the prior year. Currently, the treasury shares for participants of the Share Matching Plan and of the employee share program Shares2You are issued from the pool of shares previously held in a trust deposit.

As part of the acquisition of VoiceStream Wireless Corp., Bellevue, and Powertel, Inc., Bellevue, in 2001, Deutsche Telekom AG issued new shares from authorized capital to a trustee, for the benefit of holders of warrants, options, and conversion rights, among others. These options or conversion rights expired in full in the 2013 financial year. As a result, the trustee no longer had any obligation to fulfill any claims in accordance with the purpose of the deposit. The trust relationship was terminated at the start of 2016 and the deposited shares were transferred free of charge to a custody account of Deutsche Telekom AG. The previously deposited shares are accounted for in the same way as treasury shares in accordance with § 272 (1a) HGB. On the basis of authorization by the shareholders' meetings on May 25, 2016 and April 1, 2021, the treasury shares acquired free of charge may be used for the same purposes as the treasury shares acquired for a consideration. In the reporting year, 3,462 thousand previously deposited shares were reallocated for issue to eligible participants of the Share Matching Plan (prior year: 558 thousand shares).

For matching shares from the Share Matching Plan and for free shares from the employee share program Shares2You, treasury shares are transferred free of charge to the custody accounts of employees of Deutsche Telekom AG. In cases where treasury shares are transferred to the custody accounts of employees of other Group companies, the costs have been transferred at fair value to the respective Group company since the 2016 financial year. Where treasury shares were transferred to the custody accounts of employees that were bought by way of personal investment as part of the Shares2You program, a conversion rate of EUR 16.72 per share was used. The conversion is determined using the lowest price at which a trade actually took place on an official German exchange on the date of conversion.

In all months of the reporting year, except for October, treasury shares (3,485 thousand in total) were reallocated and transferred to the custody accounts of eligible participants (prior year: 523 thousand treasury shares). As of December 31, 2021, disposals of treasury shares resulting from the transfers in the reporting period accounted for 0.07 %, or EUR 8,921 thousand, of share capital. Gains on disposal arising from transfers of treasury shares amounted to EUR 57,717 thousand. The transfers of treasury shares increased the capital reserve by EUR 48,796 thousand. In the reporting year, 1,042 thousand treasury shares with a fair value of EUR 17,585 thousand were billed to other Group companies.

Authorized capital and contingent capital. The shareholders' meeting on May 31, 2017 authorized the Board of Management to increase the share capital with the approval of the Supervisory Board by up to EUR 3,600,000,000 by issuing up to 1,406,250,000 no par value registered shares against cash and/or contribution in kind in the period ending May 30, 2022. This authorization may be exercised in full or on one or more occasions in partial amounts. The Board of Management is authorized, subject to the approval of the Supervisory Board, to exclude residual amounts from shareholders' subscription rights. Furthermore, the Board of Management is authorized, subject to the approval of the Supervisory Board, to disapply shareholders' subscription rights in the event of capital increases against contribution in kind when issuing new shares for business combinations or acquisitions of companies, parts thereof, or interests in companies, including increasing existing investment holdings, or other assets eligible for contribution for such acquisitions, including receivables from the Company. However, the value of the new shares for which shareholders' subscription rights have been disappplied on the basis of this authorization – together with the value of the shares or conversion and/or option rights or obligations under bonds issued or sold since May 31, 2017 subject to the disapplication of subscription rights – must not exceed 20 % of the total share capital; the latter is defined as the amount existing as of May 31, 2017, upon entry of the authorization, or upon the issue of the new shares, whichever amount is lowest. If the issue or sale is carried out in analogous or mutatis mutandis application of § 186 (3) sentence 4 AktG, this shall also constitute the disapplication of subscription rights. Further, the Board of Management is authorized, subject to the approval of the Supervisory Board, to determine the further content of share rights and the conditions under which shares are issued (**2017 Authorized Capital**).

Following the capital increase against contribution in kind, the 2017 Authorized Capital was reduced to EUR 3,024,000,000. The remaining 2017 Authorized Capital was entered in the commercial register on September 28, 2021.

As of December 31, 2021, the share capital was contingently increased by up to EUR 1,200,000,000, comprising up to 468,750,000 no par value shares (**2018 Contingent Capital**). The contingent capital increase will be implemented only to the extent that

- a. the holders or creditors of bonds with warrants, convertible bonds, profit participation rights, and/or participating bonds (or combinations of these instruments) with options or conversion rights, which are issued or guaranteed by Deutsche Telekom AG or its direct or indirect majority holdings by May 16, 2023, on the basis of the authorization resolution granted by the shareholders' meeting on May 17, 2018, make use of their option and/or conversion rights or
- b. those obligated as a result of bonds with warrants, convertible bonds, profit participation rights, and/or participating bonds (or combinations of these instruments), which are issued or guaranteed by Deutsche Telekom AG or its direct or indirect majority holdings by May 16, 2023, on the basis of the authorization resolution granted by the shareholders' meeting on May 17, 2018, fulfill their option or conversion obligations (including in the event that, in exercising a repayment option when the final due date of the bond is reached, Deutsche Telekom AG grants shares in Deutsche Telekom AG completely or partially in lieu of payment of the amount due)

and other forms of fulfillment are not used. The new shares shall participate in profits starting at the beginning of the financial year in which they are issued as the result of the exercise of any option or conversion rights or the fulfillment of any option or conversion obligations. The Supervisory Board is authorized to amend § 5 (3) of the Articles of Incorporation of Deutsche Telekom in accordance with the particular usage of the contingent capital and after the expiry of all the option or conversion periods.

Main agreements including a change of control clause

The main agreements entered into by Deutsche Telekom AG that include a clause in the event of a change of control principally relate to bilateral credit lines and several loan agreements. In the event of a change of control, the individual lenders have the right to terminate the credit line and, if necessary, serve notice or demand repayment of the loans. A change of control is assumed when a third party, which can also be a group acting jointly, acquires control over Deutsche Telekom AG.

On November 2, 2016, Deutsche Telekom AG signed a change agreement to the shareholder agreement with the Greek government from May 14, 2008 on Hellenic Telecommunications Organization S.A., Athens, Greece (OTE); the change agreement concerned the accession of the Hellenic Republic Asset Development Fund (HRADF) as a party to the contract. Under this agreement, the Greek government is, under certain circumstances, entitled to acquire all shares in OTE from Deutsche Telekom AG as soon as one (or more) person(s), with the exception of the Federal Republic of Germany, either directly or indirectly acquire(s) 35 % of the voting rights of Deutsche Telekom AG.

In the master agreement establishing the procurement joint venture BuyIn in Belgium, Deutsche Telekom AG and Orange S.A. (formerly France Télécom S.A.)/Atlas Services Belgium S.A. (a subsidiary of Orange S.A.) agreed that if Deutsche Telekom or Orange comes under the controlling influence of a third party or if a third party that is not wholly owned by the Orange group of companies acquires shares in Atlas Services Belgium S.A., the respective other party (Orange and Atlas Services Belgium S.A. only jointly) may terminate the master agreement with immediate effect.

Changes in the composition of the Group

62 German and 314 foreign subsidiaries are fully consolidated in Deutsche Telekom's consolidated financial statements (December 31, 2020: 61 and 364). 16 associates (December 31, 2020: 15) and 10 joint ventures (December 31, 2020: 9) are also included using the equity method.

The principal subsidiaries of Deutsche Telekom AG are listed in the section "[Summary of accounting policies – Principal subsidiaries](#)" in the notes to the consolidated financial statements.

Business combinations

On May 28, 2021, a purchase agreement was signed between T-Mobile US and Shenandoah Personal Communications Company (Shentel) – a local provider of mobile network products in certain regions of some U.S. states – for the acquisition of assets and liabilities directly associated with the wireless telecommunications operation of Shentel. The transaction was consummated on July 1, 2021.

For further information, please refer to the section "[Summary of accounting policies – Changes in the composition of the Group and other transactions](#)" in the notes to the consolidated financial statements.