KPN Integrated Annual Report 2019

The network of the Netherlands

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Contents

In preparing this Integrated Annual Report, we have taken the principles of the International Integrated Reporting Council (IIRC) into account. For the CSR information included in this report, we followed the Global Reporting Initiative (GRI) Standards - Option: Comprehensive.

We follow the EU directive on Non-Financial Reporting and also we have taken the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) into account. KPN recognizes the importance of disclosure on environmental, social and governance matters. We do so by integrating disclosure of this information with other financial and non-financial information, based on materiality considerations, in this Integrated Annual Report.

Note: The Board of Management Report consist of pages 1 - 79. KPN's policy regarding board diversity is described on pages 73 - 75. The detailed list of top risks can be found in Appendix 4.

CEO letter to the stakeholders

The network of the Netherlands

Worldwide, the Netherlands is one of the frontrunners in digitalization. Telecommunications companies play an important role in facilitating the ongoing technological transformation and digitalization, and building the infrastructure for the next generations - a key foundation for the future success of Dutch society. Compared to other countries in Europe, the quality of Dutch networks is highly regarded because of the large penetration of high-speed and high-availability of fixed and mobile networks. Dutch providers are acknowledged for that. At the same time, the Dutch telecommunications sector is very competitive, with three strong players in the market. Within this playing field KPN plays a very important role.

It is in this context that I took over the helm of the company after Maximo Ibarra left as CEO at the end of September 2019. I am honored to have been offered this responsibility. Together with the new team of board members, we consider it a major responsibility to serve the interests of all KPN's stakeholders: our customers, our shareholders, our employees, our business partners and Dutch society at large.

KPN delivers connectivity and related services for consumers, business customers and wholesale clients through our KPN network, the network of the Netherlands. Our customers recognize KPN for the quality and reliability of our networks and services, our high security standards and the sustainable way we run our business. Their appreciation is reflected in all-time high Net Promoter Scores in both fixed and mobile services for consumers. KPN's strong reputation was one of the triggers to start implementing the one-brand strategy in 2019.

The leadership team and all people within KPN are fully aware that the status quo is not an option, given the speed of digitalization in society. We therefore have a clear strategy in place to achieve organic sustainable growth. 2019 was the first full year of executing our three-pillar strategy, which is based on building the best network, focusing on profitable growth segments, and accelerating the simplification and digitalization of our organization.

In 2019, we made good progress in delivering on our strategy. We started the ramp up of the roll-out of fiber-to-the-home

CEO letter to the stakeholders

with the aim of connecting another one million households by the end of 2021 - on top of the 2.3 million FttH households by the end of 2018. Fiber is the most future-proof technology in which we are heavily investing. Our plans are ambitious, although we have to deal with construction capacity constraints we are committed to continue the roll-out at full speed. At the same time, we are modernizing our mobile network to become future-proof and making it 5G-ready. The roll-out of fiber and 5G will contribute to the further digitalization of Dutch society and will in particular support businesses in developing new applications and optimizing their processes. In our field labs, we have co-created several 5G use cases with our business partners, business customers and government institutions for sectors such as agriculture, transport and automotive, including testing applications in urban areas.

Through our services, KPN wants to offer consumers and businesses the best solutions at home, in the office and on the move. Our customers' needs are driven by a demand for flexibility, autonomy and personalized experiences combined with fixed-mobile converged services. To cater to these needs, we have introduced KPN Hussel for consumers and small businesses. KPN Hussel is a fully converged proposition that gives customers complete freedom to mix and match our menu of services to meet their needs at any moment. To service our business customers we are simplifying our product portfolio and focusing on flexible standard propositions, for connectivity and IT services such as security, cloud and workspaces. In this way, we are becoming a one-stop-shop.
The fast-changing world creates challenges and opportunities in terms of transforming our organization. It is vital to further simplify and digitalize the company and our processes. We have taken several steps to create a more flexible organization and to enhance the time to market of new services. In addition, we have introduced more focus through divestments of non-core assets.

We delivered on all our financial guidance aspects for 2019 and showed slight growth in adjusted EBITDA after leases (EBITDA AL), Capex of EUR 1.1bn, free cash flow of more than EUR 700m and a progressive regular dividend per share. Due to our strong and disciplined cost control, leading to significant savings in 2019, we position us well to deliver on our 2019 - 2021 savings program. In the consumer market, we faced some decline of our customer base due to the competitive environment in the Netherlands and the rationalization of our brands. Meanwhile, a solid Wholesale performance contributed to our strong position in the Netherlands. In the Business segment, KPN focuses on value over volume, to develop more profitable revenues in the years to come. We are in the process of migrating our business customers to the new future-proof portfolio. 74% of our small/medium enterprise customers and 53% of our large enterprise customers have been migrated.

I am proud to see how committed our entire workforce was to delivering KPN's services to all our customers, in helping to execute our strategy and to delivering on our financial objectives. I want to thank all employees for contributing to these achievements. The leadership team recognizes that KPN's transformation brings challenges for our employees. We strongly believe in continuously developing and investing in our people to enable them to adapt to changing requirements and strengthen their resilience for a new future inside or outside KPN.

"I am proud to see how committed our entire workforce was in delivering KPN's services to all our customers"

“KPN is ready for the future delivering on its ambition to become the undisputed quality leader in the Netherlands”

Joost Farwerck, CEO

Specifically, I would like to acknowledge that our brand strategy has not been an easy process for our XS4ALL employees, given their strong identification with XS4ALL and dedication to its customers. I respect their engagement and expertise, which is why I would like every XS4ALL employee to continue to work for KPN.

The networks of KPN play an important role in the digitalization of the Netherlands and we will support this with our strategy in the future as well. Everything will be connected with everything and Artificial Intelligence will give valuable insights. New technology such as 5G and cloudification, will be crucial for these developments. KPN is deeply rooted in the Netherlands, people in our country are daily served via our networks - directly or indirectly. By watching TV, using internet, using work space at work, using wifi in the train, doing payments at home or in a shop, to name a few; everyone is connected through The KPN network. In that perspective, we should mention here the disruption to our network which affected the accessibility of the 112 emergency number. Following this very unfortunate event, measures have been taken to improve network robustness and to secure the availability of 112. It goes without saying that we are doing this in close contact with the government and other operators.

Over the past several years, KPN has built a strong track record in doing business in a sustainable manner. We firmly believe that this is vital if we are to preserve our competitive advantage and secure the long-term interests of all our stakeholders. With our services we intend to also contribute to solving societal issues, like reducing waste and promoting circular solutions. For several years we have received top rankings – placed second in 2019 – in the Dow Jones Sustainability Index for Telecommunication Services. This testifies not only our climate performance. It also attests, for instance, to our performance in security and everything we do through the KPN Mooiste Contact Fonds.

KPN has connected people in the Netherlands for more than 100 years and will continue to do so going forward, in a responsible and sustainable way. My board colleagues and I intend to continue on this path, and look forward to 2020 and beyond. Together with our employees and business partners, we will build an even stronger KPN. A KPN that is ready for the future, delivering on our ambition to become the undisputed quality leader for our customers, shareholders, employees, business partners and Dutch society. Thank you for trusting us to operate the network of the Netherlands.

Joost Farwerck,
CEO and Chairman of the Board of Management KPN

Our purpose and the world around us

Investing in future-proof telecom infrastructure

Our purpose

We aim to connect everything and everybody in an innovative, reliable and sustainable way. This makes our customers' lives more free, fun and easy. Our core activities therefore encompass building and maintaining a fixed and mobile infrastructure and delivering connectivity in a sustainable way. This will enable our customers and their assets to communicate and function increasingly efficiently, supporting the transition towards a low-carbon and climate change-resilient economy as further explained in our business model on pages 12 to 15. Our business model also highlights our long-term impact on society in terms of secure future-proof connectivity and social inclusion. The business model starts with our basis, which includes our customer base, workforce and partnerships. Please also see chapter 'Long-term and short-term impact on society' on pages 26 to 29 which describes our value for society and contribution to the UN Sustainable Development Goals.

Our position in the value chain

In an environment where digitalization is transforming our industry and power is concentrated among a small number of global tech players, telecom companies are moving towards the sweet spot in their markets. At one end, there are infrastructure players focused purely on delivering the best infrastructure without direct customer relationships. At the other end, there are telecom players developing a full suite of digital services and acquiring rich content offerings for end-customers.
Thanks to our infrastructure and brand reputation, we have a strong market position in the Netherlands. We envisage KPN's position in the ecosystem as that of a lean, high-quality connectivity provider with Consumer, Business and Wholesale customer relations. We do not foresee entering into full-scale competition with scaled OTT players. We will deliver connectivity and adjacent services as an aggregator via the right partnerships. In addition, we are exploring new roles to foster innovation in our focus areas of security, connected things (Internet of Things and smart home), data-driven digital business models and IT services, for example in digital healthcare. Our IT and network will be integrated, delivering a digital platform, which helps facilitate the delivery and integration of partner services to our end-users.

Our role in society

KPN is at the center of the new technological developments reshaping our society. We aim to generate long-term value and contribute to the Sustainable Development Goals (SDGs) as well. These were adopted by all UN member states in 2015 as a universal call to create a more sustainable future for all by 2030. Looking at current societal challenges, we can make a difference on three areas that are very important for the coming years:

- Secure, future-proof connectivity (Please see chapters 'Converged smart infrastructure' and 'Focused innovation and digitalization')
- Social inclusion (Please see chapters 'Sustainable employability', 'Focused innovation and digitalization' and 'Long-term and short-term impact on society')
- Environmental impact (Please see chapters 'Environmental performance and responsible supply chain' chapter).

We are closely linked to the Netherlands in every way and in almost every sector. As our society grows ever more dependent on IT and connectivity, our services become more relevant, helping the economy and society to advance and become more sustainable. This includes providing critical communication services for the police, armed forces, transport and healthcare sector.

Our competitive position

Compared to most other European countries, the Netherlands is characterized by a high penetration of high-speed, high-quality fixed and mobile broadband access. The fixed network topography consists of two nationwide operators with extensive broadband coverage (KPN and VodafoneZiggo) and a few smaller local or regional players. Our network has always been our core asset, and together with our skilled employees we aim to help shape new business models and markets where technology interacts with societal trends.

Competition in the consumer market

The Dutch consumer market for telecommunications includes household broadband access, voice services and media offerings (via traditional TV and/or OTT). The consumer market is characterized by fierce competition in high quality networks in both fixed and mobile, a shift to fixed-mobile convergence (FMC) and the speed of adoption of digital services (e.g. OTT services).

Competition in the business market

The business market structure, developments and our position and competitive performance within the market give rise to several challenges and opportunities. Firstly, competitors are emerging with cheaper alternatives to traditional connectivity, which threatens our installed base share. Secondly, traditional telco competition is focusing on regaining market share by retention pricing, fixed-mobile convergence and an aggressive challenger pricing strategy. Finally, a shift towards cloud-based alternatives has facilitated a growth of the IT market. This untapped potential offers KPN a growth opportunity, but also means we need to compete with specialized, digital-native IT providers.

"We aim to help shape new business models and markets where technology interacts with societal trends"

Competition in the wholesale market

In the mobile wholesale market we are competing with network operators T-Mobile and VodafoneZiggo. We observe an increasing demand for data usage in this market, along with a higher number of data users. In the fixed wholesale market, we may face competition from VodafoneZiggo, which is required to provide wholesale access based on the current Wholesale Fixed Access decision by ACM. And in the business market, Eurofiber offers wholesale services. Other local network operators also offer wholesale access services.

Technology trends

In 2019, the development of quantum technology, open platforms and virtual reality is progressing to rapidly change our daily lives in the future. Internet of Things (IoT) and artificial intelligence (AI) are becoming mainstream and ever more frequently deployed.

AI, in particular, with its amazing ability to recognize patterns, is making progress and will completely change entire industries. When it comes to chatbots, AI and machine learning will improve the way bots interact with people.

We started preparing for the roll-out of 5G in 2019. While last year was all about experimenting, in 2020 we are making a product start on the realization. That is not only about upgrading antennas, but also introducing Edge computing to support the 5G services. (See 'Converged smart infrastructure' chapter)

The success of this next-generation mobile technology depends on the number of suitable use cases. The trend is to combine different technologies to create new applications. For instance, innovative IoT applications will use 5G and AI running in the Edge cloud, to be exposed via secure APIs for integration with existing business applications.

These developments lead to new solutions, but also raise new questions. For instance, developments related to the use of personal data require great care in terms of privacy. With KPN Ventures and our innovation department KPN Open Innovation Hub, we aim to stay on top of new developments.

Our purpose and the world around us

Our SWOT

Acting on the changes in society is an important factor in the success of our business and in strengthening our market position as a leading telecommunications and IT provider in the Netherlands. The following summary of our strengths, weaknesses, opportunities and threats (SWOT) provides a brief overview of the evaluation of our competitive position in the environment in which we operate.

"Thanks to our infrastructure and brand reputation, we have a strong market position in the Netherlands"

Strengths

- A strong brand reputation within the Dutch telecommunications market: reliable and offering products and services with a good price-quality ratio.
- Cost control resulting in stronger EBITDA-AL margins.
- Externally recognized for sustainability contribution, as illustrated by positive benchmark results.
- Strong competences in network security and cybersecurity to ensure customer data privacy.
- Increased customer satisfaction demonstrated by a higher Net Promoter Score (NPS).
- Attractive combination of bundled services and broad business and consumer service offering for fixed, mobile and IT services.
- An attractive employer with skilled and motivated employees.
- Trusted provider of critical communication services.

Opportunities

- Digitalization of customer interactions offers opportunities to improve processes and helps customers to operate digitally.
- New technologies enable us to manage network capacity in a dynamic way.
- Technological developments in infrastructure, software and virtual networks, and IoT accelerate innovation, creating solutions to meet the societal challenges that come with urbanization, a higher life expectancy and individualization. In addition, this also facilitates the digitalization and simplification of our processes, enabling a cost reductions.
- Leverage strong distribution, customer and household relations footprint to develop new business models.
- Leverage data and analytics capabilities to create value in the current business model and develop new business models.
- Significant growth in usage of communication networks and new applications on our networks makes us highly relevant.
- Substitution of existing products and services with alternatives in the short term with lower greenhouse gas emissions.
- Security as a basis for every business network and KPN business service is becoming a basic need

Weaknesses

- For the FttH roll-out we need to put cash before the return.
- In some areas, slower time to market than desirable.
- Gender diversity, especially in middle management functions.
- Limited integration across platforms with solid but complex IT systems and processes. This presents difficulties in driving customized client solutions and providing a totally integrated service portfolio.
- Extensive customized business market portfolio and processes for large enterprises.
- Required time it takes to simplify and digitize customer front-end in B2B solutions.

Threats

- Dependency for telecommunications equipment on suppliers that are subject to international geopolitical discussions.
- Confidentiality, integrity and availability of networks, systems or customer data need continued attention.
- Challenging labor market for sufficient qualified staff.
- Fierce competition from international network providers.
- New restrictive regulation in the EU and the Netherlands for telecommunication companies.
- Disruptive technologies and new business models that we need to adapt to.
- Most services increasingly based on technology standards, limiting the possibilities for differentiation from competitors.
- Increased price of energy commodities on the medium term due to embedded greenhouse gas regulation tariffs.
- Precipitation impact on our technical infrastructure due to medium term impact of climate change.

Strategy, key performance and value creation model

Executing our strategy at full speed

In 2019, KPN went full speed ahead with the execution of its strategy, positioning itself as a future-proof, high-quality, lean telco with premium consumer, business and wholesale customer relations. KPN continues to invest in its infrastructure to become the undisputed quality leader in the Netherlands. KPN aims for organic and sustainable growth of adjusted EBITDA AL and free cash flow in 2019–2021, enabling progressive dividend payments and deleveraging.

Strategic priorities 2019-2021	Main pillars	Main goals 2021	Progress per year-end 2019	Ref. to chapter
Building the best converged smart infrastructure	• Acceleration of fiber roll-out • Full mobile network modernization • Moving to all-IP	• +1 million FttH households compared to end 2018	• +~120k FttH households	Converged smart infrastructure (p. 32)
		• 100% 5G ready	• Mobile network modernization started, around 640 sites 5G ready	
		• ~45% of households at 1Gbps	• 31% of households at 1Gbps[1]	
		• ~70% of households at 200Mbps	• 61% of households at 200Mbps	
		• ~50% virtualized network functions	• 26% virtualized network functions	
		• 100% all-IP	• Migration to IP portfolio well on track: ~175k legacy lines vs ~775k legacy lines end 2018	
Focusing on profitable growth segments	**Consumer** • Best household access and customer experience • Growing converged customer base and product penetration • Focus on delivering value	• +300k converged households	• +59k converged households	Customer value (p. 18), Products & services (p. 35)
		• 70% postpaid base converged	• 63% postpaid base coverage	
	Business • Converged simplified product portfolio • Transformation of operating platform • Lean and digital operations	• Migrate 100% of SME base from legacy[2]	• 74% of SME base migrated	Customer value (p. 18), Products & services (p. 35)
		• Migrate 100% of LE base from legacy[2]	• 53% of LE base migrated	
		• Value over volume in LE & Corporate	• Significantly less revenues from low margin hardware deals	
		• Stabilized end-to-end adj. EBITDA AL by mid-2020	• In progress	
		• Reduce IT systems by 75%	• Ongoing IT integration	
Accelerating simplification and digitalization	• New multi-year opex reduction program • Lean operating model • Digital customer journeys • Automated back-end tasks	• ~€ 350m net indirect opex savings	• Net indirect opex savings € 141m	Shareholder value (p. 21), Customer value (p. 18), Focused innovation & digitalization (p. 39)
		• From 20 to 2 converged IT stacks, one for consumer and one for B2B	• Reduction converged IT stacks in progress	
		• From 5 to 1 core network(s)	• 3 core networks	
		• Simplified end-to-end organization	• Disposals of NLDC, KPN International, Argeweb and announced disposal of KPN consulting	

1 Based on FttH broadband speed potential. As of March 2020, KPN will make this broadband speed commercially available for designated FttH areas.
2 Traditional fixed-voice and legacy broadband.

Adjusted EBITDA AL[1,2]
€ million

2,290
2018
Restated[3]

2,317
2019

Adjusted EBITDA AL margin[1,2]

41%
2018
Restated[3]

42%
2019

Free cash flow[1,4]
€ million

795
2018
Restated[3]

726
2019

Capital expenditure[1]
€ million

1,106
2018

1,115
2019

Shareholder return

Return on capital employed[5]

9.0%
2018[3]

9.2%
2019

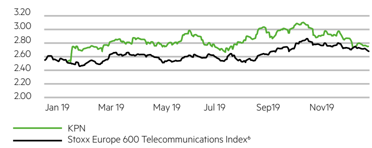
Regular dividend ordinary share

€12 ct
2018

€12.5 ct
2019

Total shareholder return (TSR)

KPN 7.5% 2019 Telco index 5.1% 2019



Network speed

Average 4G download speed mobile network per year-end

58Mbps
2017

53Mbps
2018

68Mbps
2019

Average maximum download speed broadband fixed per year-end

202Mbps
2017

221Mbps
2018

236Mbps
2019

Energy consumption in petajoules

Energy consumed by KPN

2.832
2017[7]

2.841
2018[7]

2.728
2019

Estimated energy consumption saving by KPN customers[8]

1.804
2017[7]

2.511
2018[7]

2.527
2019

Converged services

Households in fixed-mobile bundles[9]

42%
2017

46%
2018

49%
2019

Postpaid customers in fixed-mobile bundles

51%
2017

57%
2018

63%
2019

Customer satisfaction

Net Promoter Score in Consumer

13
2017

14
2018

19
2019

Net Promoter Score in Business

-1
2017

-1
2018[11]

-4
2019

Transformation of operating platform

% SME base migrated from legacy services[10]

9%
2017

41%
2018

74%
2019

Reputation

RepTrak Pulse score

70.5
2017

72.6
2018

74.4
2019

1 Based on continuing operations.
2 KPN defines EBITDA as operating result before depreciation (incl. impairments) of PP&E and amortization (incl. impairments) of intangible assets. Adjusted EBITDA after leases are derived from EBITDA and are adjusted for the impact of restructuring costs and incidentals ('adjusted') and for lease costs, incl. depreciation of right-of-use assets and interest on lease liabilities ('after leases' or 'AL'). Reconciliations can be found in Appendix 1.
3 Comparative financial information for 2018 has been restated to reflect the implementation of IFRS 16.
4 Free cash flow after leases excluding Telefónica Deutschland dividend.
5 Net operating profit less adjustments for taxes divided by capital employed.
6 Rebased to KPN's closing price of the last trading day of prior year.
7 Restated for the sale of NLDC.
8 Estimated energy consumption saved by customers from using our IT solutions. See Appendix 3 for further details.
9 As percentage of broadband customers.
10 Percentage of SME customers migrated from traditional fixed-voice or legacy broadband services starting August 2017.
11 NPS Business 2018 has been restated, see Appendix 3 for the new NPS Business calculation. The reported figure for 2017 has not been restated.

● Strategy, key performance and value creation model

Delivering value on the short and long term

Our valuable assets

Loyal customer base and digital era demands (p. 56)

Strong partnerships and supplier base (p. 56)

Future-proof infrastructure and mobile spectrum (p. 57)

Skilled and motivated workforce (p. 57)

Solid financial basis (p. 57)

Green energy (p. 57)

Purpose:
We make life more free, fun and easy. We aim to connect everything and everybody in an innovative, reliable and sustainable way. (p.8)

Ambition:
To be at the very heart of our customers' connected life, we want to be their trusted companion by offering best-in-class quality in terms of access, service and customer experience.

Strategic priorities:
- Building the best converged smart infrastructure.
- Focusing on profitable growth segments.
- Accelerating simplification and digitalization.

(p. 12)

Core activities:
- Invest in a future-proof secure, reliable, high-quality network.
- Offer high-quality products and services with a best-in-class customer experience.
- Automating and digitalizing where possible, thereby simplifying IT stacks, networks and our organization.

How we operate:
Deliver end-to-end teamwork, speed in execution and first time right for our customers.

Governance (p. 58)

Compliance (p. 66)

Risk and control (p. 66)

Our performance

Converged smart infrastructure (p. 32)

Flexible, simple and converged products and services (p. 35)

Focused innovation and digitalization (p. 39)

Safeguarded privacy and security (p. 42)

Sustainable employability (p. 45)

Environmental performance and responsible supply chain (p. 48)

Value we create

Customer value: Customer in control of secure, reliable and seamless connectivity (p. 18)

Shareholder value: Organic sustainable growth (p. 21)

Long–term impact on society

Secure, future-proof connectivity (p. 26)

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

Social and digital inclusion (p. 26)

11 SUSTAINABLE CITIES AND COMMUNITIES

Environmental impact (p. 26)

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

Network of the future continues growing

“Proud that we can connect households with the most future-proof network there is”

— **Willem Offerhaus**
Director Executive Relations & Strategic Projects

For more than 100 years, KPN has ensured that everyone in the Netherlands is properly connected – with each other and now, with all the exciting things made possible by the latest digital techniques. We will continue doing this in the future. KPN’s ambition is to have about one million additional FttH households throughout the Netherlands by the end of 2021, on top of the 2.3 million households by end 2018. Construction or advanced preparation for this have already begun in more than 70 areas.

Following Zwolle, Apeldoorn, Nijmegen, Arnhem, Alkmaar and The Hague, Amsterdam is the next big city to get fiber connections.

“We are proud to be able to roll out fiber in our Dutch capital, and thus fulfill our main social responsibility: connecting households with the most future-proof network there is,” says Willem Offerhaus, KPN director Executive Relations & Strategic Projects. “What’s more, we’re talking about a substantial investment, because the installation of fiber optic in a city like Amsterdam is complex.”

Fiber is very stable, has huge capacity, and offers equal download and upload speeds. Data usage will continue to increase substantially in the coming years, not only through more intensive internet usage and an increasing number of devices, but also because of online gaming, Artificial Intelligence and the Internet of Things.

Read more

Our value for stakeholders: Customer value

Building a satisfied and loyal customer base

We started our integration activities in 2019 and will continue our efforts in 2020, aligned with our strategy to simplify our service offerings. Understanding and engaging with our customers is essential.

KPI	Result 2019	Result 2018
NPS Consumer	19	14
NPS Fixed-Mobile converged	30	25
NPS Business[1]	-4	-1

1 NPS Business 2018 has been restated, see Appendix 3 for the new NPS Business calculation.

Customer satisfaction

To create sustainable customer value, it is vital to build a satisfied, loyal customer base. Happy customers stay with us for longer, use more of our services and refer other people to us. Customers can only be satisfied if they enjoy excellent experiences when they use services and/or interact with KPN. In 2019, KPN saw solid growth in its converged customer base and NPS even increased to 30. We use Net Promoter Score (NPS) to measure our customers' satisfaction and as an indication for their loyalty.

Driven by the negative impact of our portfolio rationalization, migrations and temporary consequences of the ongoing restructuring, Business NPS decreased to -4. On the other hand, Consumer NPS hit a record high of +19. According to KPN customers, 'KPN offers the best service' and 'KPN has the best services'. Furthermore, iTV NPS increased further to 28, showing that customers are satisfied with the stability of iTV. KPN's iTV customers were never more willing to recommend iTV. They are especially more satisfied with the screen stability and find iTV increasingly easy to use.

Consumer

We have made the strategic decision to simplify our brand portfolio and focus fully on the KPN brand. This way, we can pool our resources and offer the best of all our brands to a wider group of customers. We started brand integration in the second quarter.

We closed down Telfort stores and started the migration to KPN of existing Telfort prepaid mobile customers, while the acquisition of new customers via the Telfort brand was ended per 1 May 2019. Regarding the integration of XS4ALL we will maintain the brand and foster its front-end strenghts while integrating the technology at the back-end.

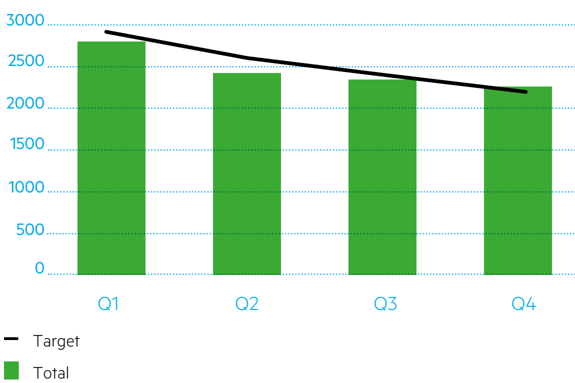
We aim to be transparent in communication with customers about our brand rationalization, the logic behind it, and the expected consequences.

Customer journey

We aim to match the process of our new products and services with the experiences our customers expect. To facilitate the right experience, we put extra focus on four customer journeys, which we identified as key for target customer groups, ranging from consumers to large corporate enterprises.

Last year we saw a substantial drop in the number of customer calls and complaints - see graph below. We proactively involved employees on our first-line helpdesk to achieve this. By better using the available tools and providing more hands-on training and coaching, we were able to to provide more solutions to customers in the first-line helpdesk and thus preventing these customer cases from ending up in the complaints process. Fine-tuned tools and processes, data cleaning and the prevention of data pollution also helps to prevent customer complaints. That is why we continue to invest in these.

Number of customer complaints in 2019



CHALLENGE

Online accessibility
Customers value the quality and reliability of our network. Customers expect more ease in using the KPN website and a seamless online experience. We know we need to improve the digitalization of our own processes in order to improve the customer experience, and last year we took measures to accelerate this, including the appointment of an Executive Vice President Digital for Business and Consumer. We want to move towards one MijnKPN (MyKPN) online environment, where customers can easily conduct all their business with us.

Business

In Business, we continue to implement the 'value over volume' strategy and focus on migrating customers to our future-proof propositions (i.e. KPN Small Business, KPN ÉÉN MKB, KPN Smart Combinations & KPN Smart Integration) and network upgrades with improved access speeds. We are moving away from single-play services towards a one-stop-shop model of standardized and converged solutions. Customers gain flexibility and freedom of choice to put together combinations of products from our portfolio.

We have developed clearly targeted segment propositions that address the needs of our SoHo, SME and Large & Corporate Enterprise customers. These propositions are smart combinations of network, ICT and security services. Where we focused on offering connectivity (always accessible) for fixed and mobile in the past, now we want to focus our offerings on a broader perspective: always in business. This means that our customers can be contacted anytime and anywhere, not only by telephone but also via the workplace. There is a strong connectivity foundation and customers can always access all their information, in a safe environment supported by our security services.

We now also offer services for SMEs that focus on cloud, workspace and security services. For the Large & Corporate Enterprise segment, we also provide workplace management, IT management, cybersecurity and information and communication technologies based on fiber and prepared for 5G.

Through KPN Smart Integration, we are really going one step further by taking responsibility for such things as the management of operational IT processes and the management of suppliers.

We will continue migrating customers of legacy brands and services to a future-proof portfolio as smoothly as possible.

Engaging with customers

It is essential that we engage with our customers to understand what drives them, what is important in their "connected" lives and subsequently what role KPN may play For this, we use various types of market research in addition to our daily contacts with customers.

Last year, we began measuring the customer experience of our key customer journeys as a whole, in addition to measuring single contacts such as shop visits, customer service calls and engineer visits. For example, we now also ask customers how they perceived the entire process of upgrading from a copper to a fiber connection, instead of only inquiring how our engineer

Our value for stakeholders: Customer value

performed. We plan to complete this transition towards customer journey measurement in 2020, so our customer feedback better reflects our customers' overall experience during their KPN journey and so we can use those insights to enhance customer experience.

At our KPN Customer Experience Lab, we continue to test business and consumer customers' needs and experiences. We interview customers and observe their behavior in the lab to determine their needs and expectations, test prototypes and validate solutions. In 2019, we conducted around 100 Experience Lab experiments.

We also run consumer panels, monthly market research, and round table discussions, to gain insight in the needs of customers. In 2019, more than 0.4 million customers responded to our surveys, providing feedback which we use to improve the customer experience.

Recognition

Brand Finance, a leading independent consultancy firm, recognized KPN as the strongest brand in the Netherlands, with a Brand Strength Index (BSI score) of 85.2 out of a 100 and a corresponding brand strength of AAA. According to Brand Finance, we have established ourselves as a trustworthy and reputable brand in consumers' minds by sticking to our goal of installing and simplifying the telecom infrastructure of the future and accelerating digitalization.

We also use RepTrak, a method developed by the Reputation Institute, to objectively monitors our reputation. In 2019, the Dutch general public gave KPN a RepTrak Pulse score of 74.4 (2018: 72.6).

Customer recognition is also evidenced by several awards and award nominations. We received the first prize at the annual Retailer of the Year event, winning 'Best Dutch Chain Store' in the category telecom. Our subsidiary InSpark won Microsoft's 'Global Security & Compliance Partner of the Year 2019' award and the KPN EEN platform was nominated as 'Best offer for SME' by Computable. The Dutch consumer association consumentenbond named KPN 'Best mobile provider' in the Netherlands.

Stijn Nuijten,
Executive Vice President
Marketing & Products:

"By focusing on the KPN brand, we are able to simplify and center our IT and customer data. That way, we can make the customer journey perfectly digital and simple"

Our value for stakeholders: Shareholder value

Strengthening our position in an ongoing competitive market

We are on track with the execution of our strategy and delivered on our financial guidance aspects for 2019. We are transforming the company to a flexible organization, enabling faster time-to-market and innovation to customers. We streamlined our organization through the disposal of non-core assets and ongoing simplification and digitalization. Our strong and disciplined cost control resulted in EUR 141m net indirect opex savings in 2019, positioning us well to deliver on our 2019 – 2021 savings program.

KPI	Result 2019	Result 2018 (Restated[2])
Adjusted EBITDA after leases[1]	€ 2,317m	€ 2,290m
Capex	€ 1,115m	€ 1,106m
Free cash flow after leases (excl. Telefónica Deutschland dividend)[1]	€ 726m	€ 795m
Net indirect opex savings	€ 141m	N/a

1 For definition see Appendix 5: Glossary
2 Comparative financial information has been restated to reflect the implementation of IFRS 16

Financial review

KPN's focus on value enabled it to further strengthen its position as a leading converged operator in the Netherlands. In Consumer, we started our strategic actions around the brand strategy and our new converged household proposition. In Business, customer migrations and our 'value over volume' approach have had a negative short-term impact on revenues, but at the same time enabled us to simplify and digitalize our operations. We position ourselves to become the undisputed quality leader in the Netherlands, which is the foundation of our strategy focused on driving organic sustainable growth.

Revenue and other income

Adjusted revenues and other income were 2.7% lower y-on-y in 2019.

Adjusted revenues in Consumer were 2.3% lower, fully driven by lower mobile service revenues and lower mobile handset revenues. Mobile service revenues declined 6.5% y-on-y, mainly driven by lower postpaid ARPU and continued pressure on the mobile customer base.

Adjusted revenues in Business declined 4.4% y-on-y in 2019. Revenues from Communication Services declined 8.4% y-on-y, mainly driven by lower revenues from Fixed-Voice (-19% y-on-y) as proactive migrations to KPN EEN cloud telephony continued. Another factor was lower mobile service revenues (-9.1% y-on-y), due to the ongoing competitive environment, particularly in the Large Enterprise segment. This was partly offset by the growth of KPN's IoT solution (15% y-on-y). Revenues from IT Services increased 0.5% y-on-y in 2019, mainly driven by security and workspace services. Revenues from Professional Services & Consultancy grew 3.8% y-on-y. This was mainly driven by cross and up-sell on existing customers.

As part of our strategy, we sold Argeweb and International Network Services in 2019. Also, we announced the divestment of KPN Consulting in December.

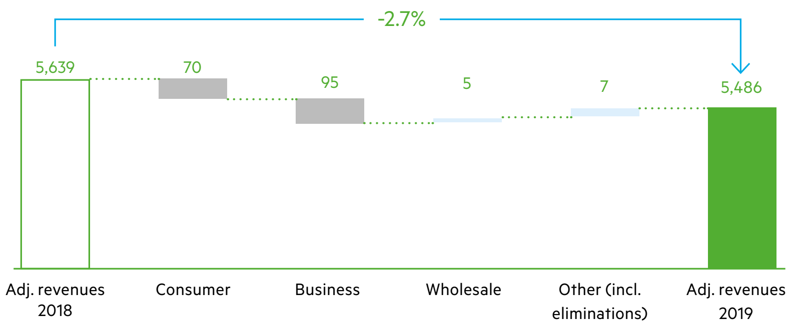
Adjusted revenues in Wholesale increased by 0.7 % y-on-y in 2019. Higher mobile service revenues were driven by a higher number of data users and increasing data usage. Solid

Our value for stakeholders: Shareholder value

performance of KPN's Wholesale Broadband Access (WBA) portfolio was offset by the sale of NLDC, lower revenues from international and national terminating traffic, and from traditional fixed portfolio (WLR, MDF).

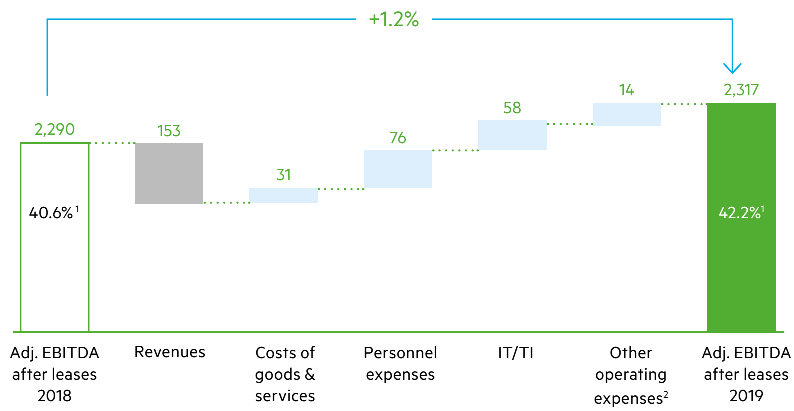
Adjusted revenues

in € million



Adjusted EBITDA AL

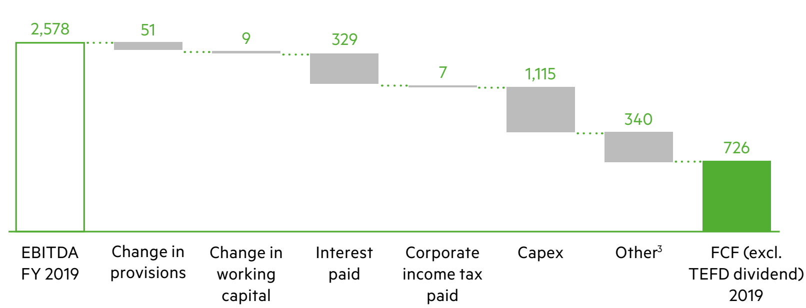
in € million



1 Adjusted EBITDA AL margin
2 Incl. lease-related expenses

Free cash flow

in € million



3 Incl. EUR 171m book profit from the sale of NLDC in Q3 2019, EUR 25m book profit from the sale of International Network Services in Q4 2019 and EUR 141m repayments of lease liabilities.

Adjusted EBITDA AL

Adjusted EBITDA AL increased by 1.2% (EUR 27m) y-on-y. Lower revenues were offset by ongoing savings from simplifying and digitalizing our services. In 2019, costs of goods & services declined 2.3% y-on-y. Personnel expenses declined 6.9% y-on-y, due to a reduction in own and temporary personnel. IT/TI expenses declined 14% y-on-y in 2019, largely driven by network rationalization and contract renegotiations with suppliers.

In 2019, restructuring costs were recognized for the amount of EUR 115m (2018: EUR 101m). The net positive impact of incidentals in 2019 was EUR 210m, consisting of the book gains on sale of NLDC (EUR 171m) and International Network Services (EUR 25m) and changes in provisions (EUR 14m). In 2018, the net negative impact of incidentals of EUR 16m consisted of changes to the asset retirement obligation (EUR 11m) and provisions (EUR 5m). See Appendix 1 for the reconciliation of EBITDA AL. The adjusted EBITDA AL margin increased to 42.2% (2018: 40.6%), supported by a strong cost focus in all areas of the business.
For information on financial and operational performance per segment, see Note 3 to the Financial Statements.

Operating profit

Group operating profit (EBIT) increased 27% y-on-y to EUR 1,041m in 2019. This was mainly driven by book profits on the sale of NLDC, International Network Services and Argeweb. Excluding these effects, EBIT would have grown 2.6% y-on-y, mainly driven by disciplined cost control, offsetting the decrease in revenue.

Financial income and expenses

Net finance expenses increased in 2019 by EUR 76m to EUR 372m, mainly due to higher finance costs related to the repurchase of USD 405m senior bonds (EUR 95m) and EUR 30m lower dividend income on TEFD shares. This is partly offset by lower finance cost due to the redemption of the 7.5% EUR 465m senior bond and lower interest on financial leases.

Income taxes

In 2019, KPN recognized a tax expense of EUR 49m (2018: EUR 224m). KPN's effective tax rate for 2019 is 7.3% (2018: 42.7%). Changes in the Dutch tax rates resulted in a benefit of EUR 48m in 2019 (2018: loss of EUR 110m).

KPN continues to qualify as an innovative company and therefore benefits from the innovation box tax regime, a facility under Dutch corporate income tax law whereby profits attributable to innovation are taxed at an effective rate of 7%.

For 2020, the effective tax rate is expected to be ~23%. See Note 8 to the Consolidated Financial Statements for further information on KPN's tax position.

Net profit

Net profit for 2019 has more than doubled y-on-y to EUR 626m, driven by book profits from the sale of subsidiaries NLDC, International Network Services and Argeweb, and lower tax expenses compared to 2018. This was partly offset by higher finance expenses related to the repurchase of USD 405m senior bonds.

Restatement of 2018 financial information

In 2019, KPN has applied IFRS 16 Leases for the first time. This standard replaces IAS 17 and IFRIC 4 and introduces on balance sheet accounting for almost all leases. For lessees, the distinction between financial leases ('on balance') and operating leases ('off balance') is removed. For lessors, the accounting requirements remained substantially unchanged and the two types of leases remain in place. Comparative financial information for 2018 has been restated.

IFRS 16 has a significant impact on KPN as a lessee. The main impact was:

- Recognition of the lease liability against a corresponding right-of-use asset. Carrying values of leases classified as financial leases under IAS 17 have been recalculated under application of IFRS 16.
- Lease expenses previously reported under operating expenses have been replaced by depreciation of the right-of-use assets and interest expense from the lease liabilities.
- Cash flows related to the payment on lease liabilities transferred from cash flow from operating activities to cash flows used in financing activities. The interest paid on the lease liabilities remained part of cash flow from operating activities.

For more information regarding IFRS 16 see Note 2 and Note 19 of the Consolidated Financial Statements.

Free cash flow

Free cash flow (FCF) of EUR 726, excluding the EUR 24m dividend received from Telefónica Deutschland (2018: EUR 54m), was EUR 69m (-8.6%) lower y-on-y. Drivers of 2019 free cash flow were EUR 329m cash interest paid (2018: EUR 339m) and a negative change in provisions of EUR 51m (2018: EUR +56m). The negative impact from change in working capital was EUR 9m (2018: EUR -8m) as the effect of increased installments paid to fiber contractors was largely offset by enhanced working capital management.

Our value for stakeholders: Shareholder value

Solid financial position

Net debt to EBITDA

As per 31 December 2019, net debt amounted to EUR 5.1bn, a decrease of EUR 0.7bn compared to the end of 2018. The movement in net debt was mainly driven by free cash flow generation during 2019 and proceeds from disposals including NLDC, International Network Services, Argeweb and the remaining shareholding in TEFD. This was partly offset by additional dividend payments and premiums paid in relation to the repurchase of USD 405m senior bonds.

KPN remains committed to an investment grade credit profile and aims for a net debt to EBITDA ratio of <2.5x in the medium term. As per 31 December 2019, the net debt to EBITDA ratio was 2.2x (2018: 2.5x). This includes the equity credit on the hybrid bonds representing 0.2x net debt to EBITDA. The average coupon on senior bonds declined y-on-y to 3.2% (2018: 3.8%), mainly due to bond redemptions and the tender offer on the USD senior bonds.

Michelle Baker,
Chief Procurement Officer:

"We can save costs without reducing quality. These savings can then be used to improve the customer experience and position us to win in Dutch market"

Capital allocation and shareholder remuneration

KPN continuously invests in its network infrastructure, products and customers, resulting in high-quality fixed and mobile networks and improved customer satisfaction ratings. KPN continues to focus on improving the customer experience by further investing in the capacity, reliability and stability of its integrated network. KPN's free cash flow generation (after capital expenditure) forms the basis of its policy related to regular dividends.

KPN aims for sustainable Free cash flow (excl. TEFD dividend) growth, driving a progressive regular dividend per share and deleveraging. KPN intends to pay a regular dividend per share of EUR 12.5 cents in respect of 2019. The final regular dividend of EUR 8.3 cents per share is subject to shareholder approval at the Annual General Meeting of Shareholders on 15 April 2020. The provisional ex-dividend date is 17 April 2020 and the provisional payment date is 22 April 2020.

Outlook

Outlook is based on composition of the Group as per 31 December 2019, also taking into account the completion of the sale of KPN Consulting, which is planned in the first half of 2020. Outlook is based on comparable basis corrected for divestments. The historical comparable basis figures are based on management estimates and are not audited.

Outlook 2020

- Adjusted EBITDA AL: stable to slightly growing compared to 2019[1]
- Capex: EUR 1.1bn
- Free cash flow (excluding TEFD dividend): At least mid-single digit percentage growth compared to 2019[2]
- Regular dividend per share: EUR 13.0ct

2019-2021 ambitions

- Adjusted EBITDA AL: organic growth
- Capex: stable at EUR 1.1bn annually
- Free cash flow (excluding TEFD dividend): three-year mid-single digit CAGR[3]
- Progressive dividend, supported by FCF

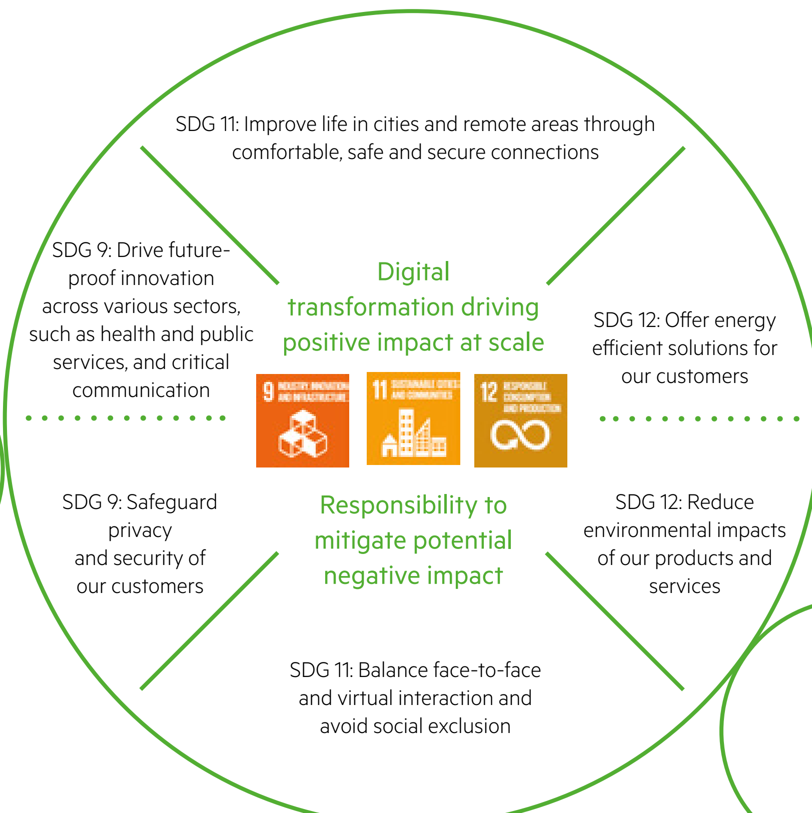
1 FY 2019 Adjusted EBITDA AL of EUR 2,287m, corrected for divestments.
2 FY 2019 FCF (excl. TEFD dividend) of EUR 718m, corrected for divestments.
3 Three-year CAGR calculated from the end of 2018 to the end of 2021, based on FY 2018 FCF of EUR 772m, corrected for divestments.

● Our value for stakeholders: Long-term impact on society

Contributing to solutions for global challenges

Since their adoption in September 2015, the UN Sustainable Development Goals (SDGs) have become one of the major international reference points on sustainability uniting stakeholders across countries and industries. As an organization at the center of society, we committed ourselves to the SDGs from the very beginning.

Our first step was to link our activities to a selection of the 17 goals. Each of these SDGs presents an opportunity for us to provide solutions while challenging us to act in a responsible manner. We developed an approach for the short and long term, and linked our material themes and KPIs to them, summarized below. We highlighted SDG 3 separately in 2018, but this year we decided to categorize our efforts in health innovation under SDG 9. Together with efforts in other sectors, such as public services, agriculture and smart industries, we aim to foster innovation and build resilient infrastructure across the Netherlands. For a more detailed overview that links all of our non-financial KPIs and 2019 results with the SDGs, see Appendix 2.



Ambition
- Drive future-proof innovation across various sectors, such as health and public services, and critical communications.
- Safeguard privacy and security of our customers.

Approach
- We maintain a country-wide network, acting as a vital infrastructure for critical communications fostering and protecting public and private interests in the Netherlands. Smart deployment of IT and collaboration allow customers to focus more efficiently on their primary tasks.

Material topics
- Data & information protection
- Innovation in products and services
- Network quality, reliability & availability
- Responsible operations

Responsibility
- Protect customers against security and privacy threats, as communication devices and data systems become increasingly interconnected.

Long-term contribution
- We support economic development and human well-being.
- We facilitate partners to keep healthcare accessible and affordable, and are developing several industries towards becoming smart industries.

Key 2019 results
- 75% of all households have access to at least 100Mbps
- Average 4G download speed: 68Mbps

Targets
- +1 million FttH households compared to end 2018 (by end 2021)
- Average 4G download speed of 75Mbps in 2020

Ambition
- Improve life in cities and remote areas through comfortable, safe and secure connections.
- Balance face-to-face and virtual interaction and avoid social exclusion.

Approach
- We make people feel more comfortable and safe, increase the efficiency of businesses and healthcare, and reduce traffic by facilitating remote working.
- We provide the means to make cities smarter and cleaner, facilitating services like smart parking, smart traffic lights, autonomous driving and crowd control.

Material topics
- Customer interaction
- Data & information protection
- Network quality, reliability & availability

Responsibility
- We work to avoid the social exclusion of groups that is caused by the digital transformation.

Long-term contribution
- We contribute to growing economic and social activities in remote areas, releasing the pressure on increasingly densely populated cities.

Key 2019 results
- ~100% of customers helped who are unintentional infected by malware (within 8 hours)
- 68% of Dutch people believe their data is safe with KPN

Targets
- Monitoring of all Dutch municipalities for cybersecurity attacks so that the appropriate mitigation can take place (2020: 40%, 2021: 70%)
- 55,000 of healthcare professionals have secure digital access to healthcare information in 2020

Ambition
- Offer energy efficient solutions for our customers.
- Reduce environmental impacts of our products and services.

Approach
- We constantly deploy our infrastructure and networks to co-create solutions for a more sustainable use of the environment.
- We reduce negative environmental impacts by the way that we produce, use and recycle our equipment.

Material topics
- Supplier selection & good governance
- Energy usage

Responsibility
- Disconnect increasing data traffic demands from decreasing relative energy consumption.
- Aim to use fewer materials, enhance product lifespans and take measures to reduce our waste production to zero, in line with our commitment to the principles of a circular economy.

Long-term contribution
- We enable our customers to reduce the energy consumption in their business while using our services.

Key 2019 results
- 30% reduction on KPN Group energy consumption compared to 2010
- Energy savings by customers as % of KPN Group: 93%

Targets
- Close to 100% circular operations and services in 2025
- Energy savings by customers as % of KPN Group: 94% by 2020

Our value for stakeholders: Short-term impact on society

Zooming in on impact

Besides the direct impact we have with our core business, we also have an impact on society as a whole. For example, we contribute to the growth of the Dutch economy through our broadband connectivity services. That being said, providing access to unlimited entertainment can also impact the health of people negatively. To enable a more focused approach to enhance our positive impact and mitigate potential adverse impact, more robust insights are needed. As such, we conducted an impact study in 2019 on five different externalities. We explored the monetary impact of broadband connectivity on national GDP and housing prices. We also reviewed the effects on employment, sleep deprivation and social media addiction.

Although the methodology was limited due to the various assumptions made, the process helped to confirm that some of our assumptions appear to be correct. For example, the positive relationship between the internet and GDP growth was backed up by various studies. A similar indication for a positive relationship was found for employment, measured in the total number of jobs in the Netherlands. The creation of jobs is a particularly important societal indicator, thanks to the numerous positive effects. It helps to avoid poverty and thereby improves the health and well-being of workers and their relatives. Furthermore, jobs provide social contact and cohesion, contributing to a person's satisfaction with life and sense of identity.

The study also helped to clarify the elements needed to draft a more robust impact measurement. Existing scientific studies on the impact of broadband connectivity appear to be of limited use, for instance due to a much higher variation in speed across other countries compared to the Netherlands. Furthermore, the reliability and availability of scientific resources is sometimes limited because of the rapid developments within our sector. This presents a risk of results being outdated or too limited.

In 2020, we will continue our journey to reach more quantitative insights in our contribution to long-term positive and negative societal impacts, among others through the Groene Netten initiative of MVO Nederland. The Groene Netten initiative is a collaboration between several national infrastructure providers that aims to achieve a climate-neutral and circular infrastructure across the Netherlands.

Brechtje Spoorenberg,
Manager Corporate Social Responsibility:

"ICT is key in solving many of the societal challenges we face today. We aim to make KPN a more sustainable company that enables our customers to become more sustainable too"

Our value for stakeholders: sponsorship and KPN Mooiste Contact Fonds

Social inclusion

Including people who have difficulty fulfilling payments

KPN and NVVK, an association for debt assistance and social banking, have entered into a first 'new-style covenant' for debt collection, making arrangements concerning the policy for people with debt problems. This accelerates the debt rescheduling process considerably and helps keep people with debt problems as customers.

KPN shares the concern regarding the increasing number of people in financial difficulty and the social harm it causes, such as poverty and social exclusion. The covenant with NVVK includes some new provisions, including KPN's promise that it will always agree to an amicable settlement proposal by NVVK members. In addition, KPN will 'freeze' outstanding claims at the request of a debt counselor. This combination of measures serves to obviate the accumulation of costs.

Preparing young people for the future of Artificial Intelligence

KPN is a partner in the National AI (Artificial Intelligence) course for high school students. AI is one of the innovative technological developments of our time. Some say that AI will bring about more change than the internet. The course aims to teach young people, in particular 13-to-15-year-olds, about AI's potential and challenges. It comprises five modules and a free teaching package.

Sports sponsorship

Ice-skating

KPN has been the main sponsor of the Royal Dutch Ice-Skating Association (KNSB) since 2010. In 2019, over 14,000 customers of KPN received tickets to national and international speed skate championships in the Netherlands. To encourage children to ice-skate, KPN supports the IJSTIJD! Kidsclub, where children learned to ice-skate. In 2019, more than 1.9 million skating fans visited schaatsen.nl, the interactive portal that KPN developed with the KNSB. Together with Fonds Gehandicaptensport, we organized the KPN Schaatsvriendendag – a day for disabled ice-skating fans. KPN decided in 2019 to stop sponsoring KNSB as of 1 June 2020, in order to focus on Dutch football as a sponsor of the Royal Dutch Football Association and the Dutch Premier League.

Football

KPN has been the main sponsor of the Dutch Premier League and partner of the Royal Dutch Football Association (KNVB) since 2017. The partnership's goals are to increase brand preference, brand recognition and NPS, and to sell KPN products and services, including Fox Sports. In 2019, KPN provided more than 13,000 tickets to customers for Dutch Premier League matches and matches played by the Dutch men's and women's football teams. We organized football camps and clinics for 770 children at the KNVB campus.

TEAMKPN Sportfonds

Through the TEAMKPN Sportfonds, KPN supports sports teams representing the Netherlands at high-level sporting events. In 2019, the fund supported six national teams in women's canoeing, men's handball, men's fencing, men's wheelchair rugby, women's beach volleyball and men's 49 sailing.

Art and culture

KPN main sponsor of the Rijksmuseum

As a main sponsor, KPN aims to make the Rijksmuseum's collection accessible to everyone in the Netherlands, both in the museum and online. In 2019, KPN launched livestreams of the restoration of Rembrandt's most famous painting, The Night Watch. In November, we welcomed 1,141 customers to the KPN Klantdagen (customer days) at the Rijksmuseum. KPN is also partner of the Royal Concertgebouw and Museum Boijmans van Beuningen.

KPN Mooiste Contact Fonds

Connecting lonely people

With more than one million adults saying they feel lonely, loneliness is a major issue in Dutch society. Since 2007, the KPN Mooiste Contact Fonds has supported vulnerable groups experiencing loneliness by financing a number of large projects together with NGOs. The foundation is supported by KPN employees, our IT resources and financial assistance. We received 1,278 voluntary contributions to our foundation in 2019. We connected 495 chronically ill children to KlasseContact, so they could continue to follow their classes at school and stay in contact with their classmates. We organized the KPN Mooiste Contact Dagen in the Rijksmuseum, with around 200 KPN volunteers joining up with more than 200 guests. Together with the Dutch Premier League, we organized 17 KPN Mooiste Contact Diners for over 750 lonely elderly people at a number of the league's football clubs.

Joining forces to combat social isolation

“KPN Mooiste Contact Fonds has been bringing people together for nearly 12 years”

— **Mark Versteegen**
Head of Sponsorships

Lending a sympathetic ear to people who suffer from anxieties, sadness and other problems: this is what Luisterlijn volunteers have been doing for more than 60 years. In 2018, Luisterlijn received almost half a million calls. Regrettably, only 330,000 of those went answered due to a lack of volunteers.

To improve the situation, last year KPN Mooiste Contact Fonds (KPN MCF) initiated a cooperation between Luisterlijn and Nationale Vereniging de Zonnebloem (National Association The Sunflower), a volunteer organization that helps people with a physical disability.

The extra volunteers receive professional training in conversational and listening skills, and can work from home. They have conversations that can be meaningful not only for the other person but also for themselves. At the same time, they help reduce the shortage of volunteers, meaning that fewer phone calls go unanswered.

KPN Mooiste Contact Fonds supports the initiative financially and by providing volunteers, allowing us to show that we are genuinely the network of the Netherlands. “KPN MCF has been connecting people with one another for nearly 12 years,” says Mark Versteegen, Head of Sponsorships. “I am proud that we have been able to make a contribution to this initiative. Together with De Zonnebloem and Luisterlijn, we lend a sympathetic ear to more and more people and helping them emerge from their social isolation.”

Read more

Our performance: Converged smart infrastructure

Realizing a future-proof smart and converged network

We made robust steps towards achieving our strategic infrastructure objectives and continued to modernize our mobile network. We are testing 5G to optimize and digitalize business processes and improve the customer experience. Although network stability improved further, we experienced a major disruption which led to additional measures to respond more quickly to network issues.

KPI	Result 2019	Result 2018
# FttH households	2.47m	2.35m
Weighted downtime	-36%	-25%
Average download speed 4G per yearend	68Mbps	53Mbps
Average maximum download speed broadband fixed per yearend	236Mbps	221Mbps

To achieve our ambition of providing the best customer experience, we need to offer the best infrastructure, enabling people, businesses and society to connect. We are building a future-proof smart and converged network. 'Smart' means our sophisticated network runs at a high level of automation, using artificial intelligence and zero-touch operations. Fixed and mobile connections will converge in our network, so that customers can switch between the two and enjoy the best experience whenever and wherever they want.

Accelerating our fiber roll-out

We made progress in 2019 towards achieving our strategic infrastructure objectives, resulting in 2.47 million FttH households at the end of 2019. We increased the number of new FttH connections from 1,000 per week in the early months of the year to around 4,000 per week by year-end.

At the end points of our fiber network - the last stretch between the network and individual households - we are in the process of switching from Active Optical Network (AON) to Passive Optical Network (PON) technology, allowing us to provide fiber connection to households in a faster and more efficient manner.

We decided to install two PON technologies, G-PON, which enables 1 Gbps connections, and XGS-PON, which allows for 10 Gbps connections to homes. The 10 Gbps connections are not being used yet, but installing them now in streets will prepare us for the future, when demand for broadband capacity will be even higher. In 2019, we installed 1 Gb PON connections for around 7,000 FttH households. In our copper network, we continued efforts to increase speed by switching customers from DSL to VDSL connections. The average maximum download speed for broadband fixed increased to 236Mbps by the end of 2019.

Rolling out a fiber network is needed to meet the growing demand for bandwidth. KPN is not the only party in the Netherlands that is installing a fiber network, but we are the only party investing in the network in the Netherlands on such a very large scale. During the fiber roll-out, we sometimes operate in the same regions as other fiber operators. The Dutch Authority for Consumers and Markets (ACM) checks whether competition is fair. In October 2019, the authority concluded that KPN may hamper competition, although the regulator agreed that KPN does not break any laws. KPN disagrees with the image portrayed by the ACM of the market dynamics.

Where KPN encounters competitors in the construction of fiber, we look for solutions through cooperation. This helps us prevent excavation work causing nuisance for the municipality and its residents.

CHALLENGE

Fiber roll-out

We face two major challenges in the roll-out of our fiber network. Our first concern is the speed of the roll-out, which is highly dependent on obtaining permits and the capacity of contractors.
Furthermore, we often come across other operators who also want to roll out a fiber network. Our aim is to roll out the network at the right place and time, with a focus on profitable growth segments.

Tom Poelhekken,
Chief Technology Officer:

"5G is especially suitable for supporting the digitalization of industry segments. While 4G connects people, 5G will connect society"

Modernizing our mobile network

We continued modernizing our mobile network and making it ready for 5G. We introduced higher order MIMO (multiple input, multiple output, 4x2, 4x4, 8x8) and 'massive' MIMO (64x64) technology for our mobile sites antennas. MIMO technology boosts connection capacity by increasing the number of channels per antenna and user speeds. We use MIMO technology in rural areas and nationwide, and the even more powerful massive MIMO for antennas in cities and other densely populated areas.
We began to gradually enhance the link between our antennas and our fixed core network, upgrading backhaul capacity from 1 Gbps to 10 Gbps. Thanks to modernization of our mobile network and the introduction of MIMO technology, we will be able to provide broadband internet access across the Netherlands, including in sparsely populated rural areas. As well as getting ready for 5G, we invested in improving our 4G network by increasing the number of frequency bands with two new bands at sites where we are replacing hardware. The average 4G download speed increased to 68 Mbps by the end of 2019.

We modernized around 640 of our approximately 5,000 sites to make them 5G-ready in 2019. We expect this process to gather steam in 2020 and believe we are on track to achieve our strategic goal of being 100% 5G-ready by end 2021 and replace all antennas and radio hardware.

KPN and Tampnet have entered into a partnership to expand 4G coverage in the North Sea for business customers. Laying an offshore antenna network will expand the coverage area of the KPN network by more than 5,000 km2 – an area similar in size to the province of North Brabant. In 2020, business users who work offshore up to 300 kilometers from the Dutch coast will have mobile coverage; that is an increase of 285 kilometers. These include people working on drilling platforms and wind farms, as well as fishermen and military personnel, wo are currently making use of more expensive satellite and radio-relay connections.

KPN finished updating the Digitenne wireless TV network in July by transferring to the new technical standard for digital ether television, DVB-T2, with the associated HD image quality.

Testing 5G

We continued our 5G pilot projects in our 5G Field Labs, where we are studying how 5G can optimize and digitalize business processes and improve the customer experience. We are testing how the 5G network can be used in combination with other technologies for smart applications, such as using drones to assess the condition of crops in fields or the Internet of Things to manage crowds at football stadiums.

We successfully tested the 5G network between multiple locations in the Netherlands. Phone calls, video calls and data sessions were conducted from the latest 5G smartphones between the 5G indoor network in the Johan Cruijff ArenA in Amsterdam, the 5G Field Lab in the Port of Rotterdam and

Our performance: Converged smart infrastructure

KPN's Technology Lab in The Hague. During these tests, working with the newest smartphones that support 5G, we achieved a download speed of 1.3 Gbps.

Although there is no evidence that electromagnetic radiation of mobile equipment or base stations poses any health risks, we take concerns about the introduction of 5G very seriously. We strive to be transparent about our 5G initiatives and technology, and provide data for further scientific research. Mobile technology and the research into its effects are continuously in development. KPN keeps track of these developments and agrees that it remains important for the Dutch public to be kept well informed.

Like all mobile providers, we have signed an agreement with the government regarding maximum radiation levels. The basis for exposure limits has been determined by an international group of independent scientists, the International Commission on Non-Ionizing Radiation Protection (ICNIRP). In 2019, the norms were being revised in order to include the latest scientific insights. We always remain within the exposure limits.

From five to one core network

We have two strategic objectives for the simplification of our infrastructure. The first objective is to reduce the number of core networks from five to one by the end of 2021. We have already shut down two of these networks. As per our rationalization plans, we intend to shut down two more networks by 2021, leaving just one core network.

Another strategic objective is to reduce the number of lines using older-generation technologies, which already declined from approximately 1.5 million at the start of 2018 to 175k by the end of 2019. In 2019, we finished our migration of PSTN single services.

ISDN (1/2) and PSTN multiple services will be phased out in April 2020. Looking ahead to 2020 -2021, we will further rationalize our infrastructure by shutting down more services. We also intend to shut down the 3G network in 2022.

Major disruption with impact on 112

On 24 June 2019, a disruption occurred in our telephone network. As a result, customers could not make or receive calls via KPN's fixed and mobile network for approximately three hours. The emergency number 112 was also inaccessible. The mobile data network (3G/4G) remained accessible, as did the fixed internet connections. We set up a crisis team to find a solution and after around three hours were able to recover our services, making 112 accessible again.

The problem was caused by a fault in the software which occurred simultaneously in the four routing systems. After resolving the disruption, we immediately increased the monitoring of our systems and commissioned an independent study by external experts. We have taken measures to increase the stability and reliability of the system to ensure we can respond more quickly to network issues and to prevent traffic from not reaching the 112 platform. These measures should help prevent a disruption with such an impact from happening again. We were in close contact with the Dutch government during this exceptional disruption and are cooperating fully with Agentschap Telecom, the authority investigating this incident on behalf of the government.

Improved network stability

Notwithstanding the major disruption, overall network stability has improved. In 2019, both the weighted network downtime and the number of major disturbances in the network decreased compared to 2018. The decrease in the total number of disturbances can be explained by a significant decrease in copper cable disruptions and fewer IT disruptions due to simplification of the IT landscape.

CHALLENGE

Network expansion

KPN wants to deliver the best possible network for its customers which requires an increase in the use of antennas. At the same time, we observe increasing resistance to the placement of antennas, not only among citizens, but in some cases also among local government officials.

Weighted Downtime

We report on the KPI 'weighted downtime' (compared to last year). With this KPI, we aim to measure the actual downtime of a disruption and try to represent the impact on individual customers and society.
Our main goal is to reduce weighted downtime and especially critical and major disturbances year-on-year.
The weighted impact is the total downtime of all major disruptions. The downtime is weighted by impact.
A disruption with a higher impact counts for more than an disruption with a relatively lower impact. However, after the largest network disturbance in 2019 we concluded that this KPI does not represent the impact on large groups of customers and society well enough.
We are currently considering alternative KPIs for 2020 in order to challenge ourselves to keep optimizing and representing the stability of our network.

Our performance: Flexible, simple and converged products and services

Intensifying our focus on value and convergence

We are focusing our energy on simplifying and enhancing customer experience into a seamless one-stop-shop experience, emphasizing value over volume, and further streamlining product portfolios.

KPI	Result 2019	Result 2018
Converged households	+59k	+91k
Converged penetration postpaid base	63%	57%
Consumer fixed: average revenue per user	€ 47	€ 44
% SME base migrated from legacy services	74%	41%
Wholesale connections (mobile and fixed)	1,734k	1,710k

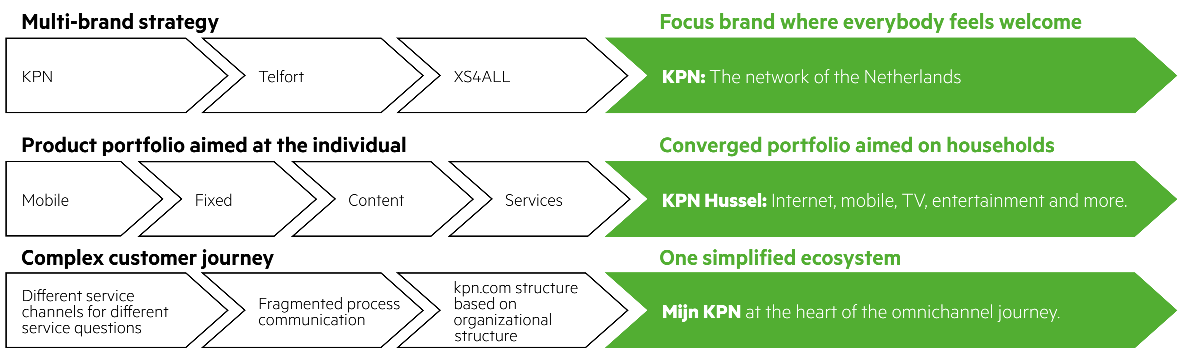
Consumer

Last year saw our systems and products continue to converge, simplify and digitalize, in our ambition to make KPN the undisputed quality leader in the Netherlands with the best services, service level and networks.

We have made a strategic decision to focus on the high-value KPN brand, so we can offer the best of all our brands to a wider group of customers. By focusing our energy and effort into a single brand, we can more effectively simplify and enhance the customer experience. Our aim is to create a seamless one-stop-shop digital experience for all customers.

Service quality is a crucial driver of customer satisfaction and loyalty. Customer satisfaction increased again in 2019, with consumer NPS reaching a record high of +19 (2018: +14).

Convergence strategy



Our performance: Flexible, simple and converged products and services

Choice and flexibility

Our focus on the KPN brand requires us to broaden its appeal to an even wider group of people. as such, we repositioned the brand last year, launching a new inclusive campaign around the slogan 'The network of the Netherlands'. We subsequently introduced KPN Hussel, a modular proposition that enables consumers and small businesses to combine mobile and fixed telephone, internet and entertainment services of their choice in a single subscription, taking only the services to suit their need. With the diversity of content such as TV, film and music changing so fast, KPN Hussel is a future-proof proposition ready for new innovations and partnerships, like the ones that we already have with companies such as Spotify and Amazon Prime Video.

Our aim is to ensure that customers have the best TV experience, by improving our product and updating our range of channels and content providers. For customers of KPN Interactive TV, we expanded the range by adding such channels as njam!, Love Nature, TV538 and DreamWorks, a 24-hour entertainment channel for children and families. Furthermore, FOX Sports 1, which features live Eredivisie football matches, is now available for all KPN Interactive TV subscribers.

Speed and access

The quality and reliability of our network is our top priority, and the speed of our fixed network has a direct effect on customer satisfaction. We further upgraded our network to increase access speeds and continued to boost broadband through our ongoing roll-out of fiber.

We increased the speed for 'Sneller Internet Buitengebied' (faster internet in rural areas) in the rural areas in the Netherlands by increasing the LTE boost. Thanks to an innovative combination of our fixed and mobile networks, inhabitants of rural areas gained extra speed up to 50 Mbps on top of their fixed connection.

In addition, we supported 176k customers in optimizing their WiFi signal through the WiFi Tuner, an online tool that allows people to check coverage in their home and get customized advice to help improve wireless quality where needed.

Fixed-mobile convergence

Last year, we increased our fixed-mobile customer base and converged postpaid customers base.
Our converged household base grew 4% to 1.4 million, representing 49% of broadband customers (2018: 46%). The converged postpaid customer base grew 8% to 2.4 million, representing 63% of postpaid customers (2018: 57%). Fixed-mobile penetration for the KPN brand postpaid customers reached 73% (2018: 70%).

CHALLENGE

The simplification and convergence of our product portfolio will create value for our company and an enhanced customer experience in the longer term. But in the short term, the actions this strategic decision necessitates can cause uncertainty and frustration among some customers as they give up familiar brands or legacy products. As KPN, we need to explore how we can successfully help to migrate customers as smoothly and seamlessly to our KPN portfolio, to maintain loyalty and prevent churn.

Business

In the Business segment, we emphasize customer value over volume. We want to leverage KPN's leading market positions, high-quality brand perception and solid reputation to generate more profitable revenues in the years to come. To achieve this strategy, we are focusing on a future-proof, simplified product portfolio and network upgrades with improved access speeds for our customers. Simplifying our portfolio allows us to innovate faster for our customers and strengthen our relationships with a focused number of partners. We make clear choices for technology vendors. Last year, for example, we introduced a cloud-based managed workplace based on Microsoft Office 365, which combines connectivity, ease of use and security.

New propositions

We have identified three main areas of customer need: client interaction, organizational performance and employee productivity. These customer needs are translated into clearly targeted segment propositions that combine network, ICT and security services. The business market portfolio ranges from access & connectivity, cloud & workspace and security & business continuity. Our KPN Small Business customer base grew with 30k, while KPN ÉÉN products grew with 158k.

In July 2019, we introduced KPN Smart Combinations , a modular and converged proposition for large and corporate enterprises that combines network, ICT and security services. These Smart Combinations – which we are developing in collaboration with firms such as Cisco and Microsoft, based on their standard solutions – are being introduced in phases. Cloud communications and secure networking were introduced in 2019. Connected Workplace will be introduced in 2020.

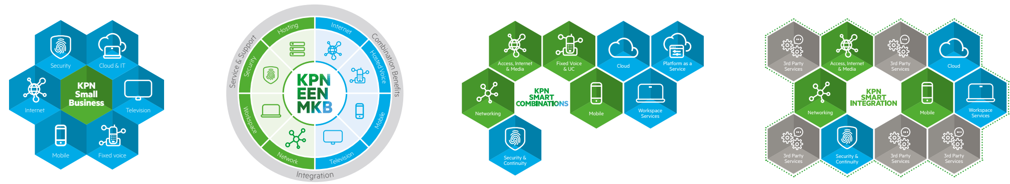
KPN Smart Integration, which we plan to introduce in 2020, will offer an additional level of integration, for our top 100 business customers. This proposition will see us integrate and manage products and services from both KPN and other large service providers into a seamless, hassle free customer experience.

Business segment: Go-to-market strategy based on Smart Combinations of network, ICT & security services

Customer outcomes

Client Interaction | Organizational Performance | Employee Productivity

Propositions



	KPN SMALL BUSINESS	KPN EEN MKB	KPN SMART COMBINATIONS	KPN SMART INTEGRATION
Segments	1 -10 employees	2 - 150 employees	> 150 employees	Top 100 customers

Portfolio

Access & Connectivity | Cloud & Workspace | Security & Business Continuity

Simplification

As part of our portfolio simplification, we are phasing out products and services such as ISDN (1/2) single/multiple and PSTN multiple. We ended the service for ISDN (1/2) single/multiple and PSTN multiple for new customers last September, and are now closing these lines in phases ahead of the definitive shutdown of the service in April 2020.

Since announcing the end of ISDN in 2017, we have invested a lot of time and effort in informing customers. Customers can switch to future-proof alternatives such as KPN ÉÉN MKB, KPN Small Business, KPN Smart Combinations or KPN Business Connect, which offer improved customer experience and value creation. By the end of 2019, 74% of SME customers and 53% of large enterprise (LE) customers eligible for migration had migrated from traditional fixed-voice or legacy broadband services.

Security integration

In April 2019, we integrated all our security services under the name of KPN Security, creating a complete package of security solutions and becoming one of the biggest players on the Dutch IT security market. KPN Security serves the entire breadth of the business market, covering small and medium-sized businesses, large companies and the government.

For small businesses, KPN Security offers mainly off-the-shelf security services. Medium-sized companies that want to outsource their security can acquire managed security services from KPN Security, ranging from protection and detection to response and prevention. Security solutions for large companies and the government are offered by KPN as part of an integrated package of services within our Smart Integration offering.

New contracts

Last year we entered into several new contracts. KPN Security won the tender for municipal procurement of 'GGI-Veilig', meaning that we will deliver security products and services to more than 330 municipalities and municipal partnerships in the Netherlands.
Since 2018, together with Geldmaat, we are building a new efficient bank-independent ATM network. KPN has been selected to take the bandwidth and security to the desired level.

CHALLENGE

Deciding how to optimize investment and allocate resources is a constant challenge for KPN. We must continuously weigh up our options in order to set priorities. One of the questions, for instance, is if we first invest in rolling out fiber to all business parks or invest in digitalizing KPN systems and processes.

Our performance: Flexible, simple and converged products and services

Wholesale

Partnerships

In 2019, KPN renewed its partnerships with Nuts Group (formerly NLE) and M7 on future-proof fixed access portfolio. In terms of wholesale media services, we signed contracts with a number of service integrators for TV services in hospitality organizations. KPN Wholesale looks after the strategic partnership between KPN and iBasis with the new owner Tofane, which now enables international carrier services for KPN's customers.

Following the sale of NLDC, NLDC will continue to deliver data center services to KPN as a preferred supplier and services to customers will continue uninterrupted. In terms of roaming, we connected AT&T, Swisscom and Orange France to our LTE-M network. Customers of Telenor Denmark, AT&T, Verizon and KDDI can now use VoLTE while roaming on the KPN network.

Product development

KPN strives to further streamline its wholesale product portfolio and migrate wholesale customers to future-proof technologies. The migration of fixed wholesale customers from regulated unbundled local loop (ULL) services to commercially agreed virtual unbundled local access (VULA) and wholesale broadband access (WBA) services continued in 2019.

KPN also announced the expansion of its VULA/WBA service to future fiber roll-out based on PON technology. In terms of mobile services, wholesale customers now have access to 4G, which means 3G can be switched off. Good progress has been made in the voice domain as well. ISDN is set to be phased out by April 2020 and interconnections with other operators are now based on IP rather than legacy technologies.

Our internet and interconnect exchange NL-IX introduced a so-called converged exchange proposition in 2019. This proposition fulfills the need of large digital-driven companies for managed and secure data interconnectivity between their networks, data centers and main application and security providers.

Jilles Limburg,
Executive Vice President Marketing:

"We want to make work easier for companies. By simplifying our services, we allow companies to focus on what they do best"

Our performance: Focused innovation and digitalization

Breaking new ground with technological innovations

We see innovation as a key enabler for delivering excellent customer experience and journeys, and for driving the upsell of value-added services to support customer loyalty.

KPI	Result 2019	Result 2018
IoT revenues	€ 53m	€ 47m
M2M subscribers (#SIMs)	~6.3m	~5.0m
#people with secure digital access to healthcare	43,432	31,990

To be able to help Dutch society to connect even more, we work to break new ground with technological innovations. Spearheading innovation at KPN are three interconnected departments that work closely together: KPN Ventures, KPN Open Innovation Hub and KPN Technology Labs.

KPN Ventures invests in scalable innovations by providing capital and enabling access to our network infrastructure, our customer base and our expertise.

KPN Open Innovation Hub develops the innovations of tomorrow, constantly seeking interesting companies to partner with and ensuring our collaborations deliver value.

KPN Technology Labs are a collection of multidisciplinary telecommunications labs. Ideas for products or services are tested by the public in our technology labs.

Our innovation efforts are focused on growth sectors connected to our telecom and IT activities. Our focus areas for innovation are security, connected things (Internet of Things and smart home), data-driven digital business models and IT services, for example in digital healthcare.

KPN Ventures' investments

Security	Connected things (IoT and smart home)	Data-driven digital business models	IT services (e.g. digital healthcare)
Cybersprint (2018)	Wirepas (2019)[1]	Sentiance (2017)	Pharmeon (2019)[1]
ZecOps (2018)	Minut (2019)[1]		Sensara (2017)
CUJO.AI (2018)	CUJO.AI (2018)		CardioSecur (2017)
EclecticIQ (2016)	Viloc (2016)		
	Actility (2015)		

1 2019 investments are explained in more detail in the following paragraphs.

Paul Slot,
Executive Vice President
Access & Core Networks:

"Replacing old networks with IP technology will result in noticeable improvements, such as a more stable network, more proactive service and communication, and quicker development and innovation"

Our performance: Focused innovation and digitalization

Security

KPN Security, the largest Dutch cybersecurity company, is the result of integrating earlier acquisitions DearBytes and QSight. KPN Security continues our investment in the Cyber Central foundation, a foundation focusing on the human behavioral aspects in the cybersecurity chain.

In 2019, KPN became the first provider in the Netherlands to introduce a tool to help users log in more securely. With Mobile Connect, users can log in to websites and online applications using a mobile device and a single five-digit PIN, alleviating the need to remember many different passwords.

KPN Ventures participated in the 2019 follow-up investment rounds for threat intelligence platform provider EclecticIQ and automated breach analysis tool ZecOps. KPN Security started working with ZecOps in 2019 and became a distribution partner for digital risk protection company Cybersprint, offering their technology to Dutch customers.

Connected things

Internet of Things (IoT)

KPN is exponentially growing in IoT connections by offering innovative connectivity services, based on a broad range of IoT networks, through 4G, LTE-M and LoRa networks. In our 5G field labs, we are exploring new use cases for the new 5G network.

Through KPN Things' end-to-end IoT solutions, hardware and data management propositions, we are helping organizations to change their business using scalable IoT. At the IoT Academy, co-founded by KPN, we show customers the possibilities of IoT and how it can create value.

KPN strategically selects domain partners, combining our IoT expertise and our partners' domain-specific knowledge to jointly deliver relevant solutions in a B2B2C or B2B2B manner. For example, last year we enabled Alcochem Hygiene, a global supplier of professional non-chemical pest control products, to deliver M2M 'connected' insect traps to food manufacturing plants. Another example is our partnership with Visser Assen, an equipment supplier in the construction sector, to resell our track & trace solution for valuable construction equipment.

In 2019, KPN Ventures invested in Wirepas, a Finnish IoT company that has created a new software protocol to wirelessly connect thousands of devices with each other in a mesh network for industrial applications, such as in the logistics sector.

Smart home

In 2015, KPN Open Innovation Hub started multiple experiments in the smart home domain and introduced KPN SmartLife. KPN SmartLife is the primary building block for a smart house. The starter set consists of a home base, two smart lightbulbs and a window/door sensor to give customers a sense of safety. When the customer is not at home, the lightbulbs act through the smart program of the house guardian to make it seem as if there is actually somebody at home. Besides the standard SmartLife package, the customer can choose from a range of more than 175 different products that make the house even smarter.

Last year, KPN Ventures invested in Minut, the Swedish manufacturer of the Point smart home alarm. This WiFi-connected device uses five sensors to monitor the safety of a house or apartment and alerts the owner, the family or neighbors if something seems wrong.

Data-driven digital business models

KPN created the Data Services Hub, a real-time streaming platform service that facilitates the secure and reliable exchange of information between people, machines and organizations. Using this hub, public and private parties can cooperate digitally while still retaining control over their own datasets.

KPN takes part in Talking Traffic, a nationwide smart mobility program initiated by the Ministry of Infrastructure and Water Management. Within that program, KPN works together with various partners. Dynniq Nederland B.V. developed the GreenFlow for BlueLights service to facilitate the communication between emergency vehicles and intelligent traffic lights in order to gain priority and increase safety. Based on the same platform, Dynniq is also deploying the GreenFlow for Trucks service, to improve the throughput of heavy vehicles on intersections and thereby save fuel and reduce emission. These applications are developed using the KPN Data Services Hub (our event-driven, low-latency streaming platform). This platform is one the fundamental basics of KPN's mobility ecosystem.

Artificial Intelligence (AI)

KPN joined the Nederlandse Artificial Intelligence (AI) Coalitie, a public-private partnership to stimulate Dutch activities in AI and provide support where necessary. We also participate in the AI platform of FME, the Netherlands' technology industry association, which focuses on AI development in the technology industry.

KPN designs FttH (for PON and PtP) and FttS roll-out based on AI models. The AI model generates an overview of all cables and devices needed to roll out fiber for all households and sites. Using the automated detection of defects in our processes and systems, we can proactively detect and resolve disruptions to limit the inconvenience for our customers. For instance, we can see from the data if and where a cable is broken, and then immediately send an engineer to fix it.

IT Services

Digital healthcare

KPN Health focuses on offering secure connections and data exchange in the healthcare sector, through its subsidiary CAM-IT solutions, one of the largest electronic workspace platforms in the Dutch healthcare sector. In 2019, KPN further invested in platforms for the safe exchange of medical data and introduced a new platform-based strategy for ZorgVrij, adding several new partners to our portfolio. In partnership with ZIVVER, we now offer a secure email exchange to help prevent any data leaks of sensitive patient information.

The divestment of our activities in remote monitoring to health institution Ksyos is in line with the focus of KPN Health.

KPN Ventures last year invested in Pharmeon, a provider of websites and patient portals to first-line care providers such as general practitioners, dentists and pharmacists. With this investment, Pharmeon will further develop its UwZorgOnline digital patient engagement platform to facilitate communication and data exchange between patients and care providers, building on KPN Health's secure communication infrastructure and professional network in the healthcare sector.

KPN API Store

KPN officially launched the KPN API Store in April 2019. This one-stop shop offers a range of standardized APIs that businesses can integrate into their applications. As technical standardized building blocks, the APIs allow other businesses to interact and connect with other digital platforms. The store offers KPN's own APIs and APIs from selected partners.

CHALLENGE

Energy usage In the next few years remains a challenge. We will further explore how we can enhance energy savings in our networks. So far, we have reduced energy use mostly by migration from ISDN and other older-generation networks. One of the energy-saving approaches we will explore is temporarily shutting off surplus capacity in our network during periods when usage is low.

Partnership and collaboration

By joining forces with ambitious technology companies working on the applications of tomorrow, we can provide better and more innovative products to customers more quickly.

We support startups, scale-ups and other partners in our innovation ecosystem to connect with KPN and get access to expertise, infrastructure, KPN partners and customers, and financial support.

Fund-in-fund investments

Investments in so-called tech transfer funds, which focus on the early-stage financing of commercial spin-offs from university research centers, help expand KPN's network of potential innovative technology partners. In 2019, KPN Ventures invested in two tech funds based in Lisbon and Cambridge, spanning technology from sensors and network technology to AI. The Armilar Tech Transfer Fund is a pan-European technology investment fund focused on commercializing technological innovations spun off from, developed or co-developed at Portuguese universities, such as Técnico Lisboa, Portugal's largest technical university. The IQ Capital Fund invests in thought leaders in deep-tech coming from the Cambridge and London technology ecosystems, as well as other academic and research centers in the UK. KPN Ventures has now partnered with eight external investment funds across Europe. In 2019, KPN Ventures also participated in the Dutch Security TechFund, a new investment fund focused on early stage investments in security companies, also partnering with The Hague Security Delta (HSD).

We are collaborating with several Dutch universities. The most important goal for KPN in these working relationships is to enable thought leadership and positioning in relevant research areas through strategic cooperation with top universities and engage with data science talents through Master and PhD thesis projects. The subjects vary from what a future network will look like to how KPN can stay relevant in emerging digital ecosystems.

Intellectual property

KPN's current portfolio of intellectual property rights consists of 228 registered trademarks relating to KPN's core brands and approximately 320 patent families. We take appropriate steps to protect our intellectual property rights and generate value from these rights where appropriate.

KPN uses a combination of patents, trademarks, service marks, trade secrets, copyrights, database protection, confidentiality agreements with employees and third parties and protective contractual provisions. Approximately 70 of the patent families that KPN owns are declared essential for the commercial exploitation of telecommunication technology and services, including in the field of 5G and virtual reality. Throughout 2019, KPN's patent positions in the area of 5G were confirmed.

We continue to invest in the growth of our intellectual property rights portfolio, among others, through our targeted long-term research and development program in close cooperation with TNO-ICT.

Our performance: Safeguarded privacy and security

Safeguarding privacy beyond legislation and compliance

We take the responsibility to protect our customers against threats to cybersecurity and privacy very seriously. In promoting our customers right to privacy, our efforts go beyond legislation and compliance frameworks.

KPI	Result 2019	Result 2018
% of Dutch people that believe their data is safe with KPN	68%	69%
% customers helped who were unintentionally infected by malware (within 8 hours)	~100%	~99%

Trust

As devices and systems become more interconnected and sophisticated, so do the threats to cybersecurity and privacy. Customers trust us to keep their data safe and private. We take this responsibility very seriously: we want everyone to enjoy the benefits of connectivity without having to worry about information security or violations of their privacy.

Privacy

It is crucial that customers can trust us to handle their data with great care and in a way that puts their interests first. In 2019, 68% of Dutch people said they believe their information is safe with KPN (2018: 69%).

As a large company and a telecom provider, KPN is extensively governed by laws and regulations around privacy. Yet to us, safeguarding privacy goes beyond legislation or compliance frameworks. It is a crucial component of the trustworthiness and reliability we want to offer our stakeholders. It is therefore important to embed ethical awareness of and responsibility for privacy in the mindset of all employees.

Employee awareness

All employees are subject to the KPN Code of Conduct which includes guidelines on how to deal with customer information and privacy. How we value privacy is an integral part of the KPN Code of Conduct (subcode 3).

For the second year running, KPN organized a privacy event for our employees. Speakers came from the worlds of business and academia. The event was live-streamed, so that colleagues could watch the event at home or in the office, and a recording of the event is available on our intranet. The recording includes case studies and dilemmas that illustrate different ethical considerations and perspectives.

All new colleagues must complete the mandatory compliance and integrity e-learning Spot On. They also conduct a number of specific privacy e-learnings, such as the Privacy and Cyber Security workouts. This ensures that all staff are up to speed on privacy matters in their work.

Last year, we continued with developing a Human Resource Privacy Statement, in which KPN sets out rules and principles for the handling and compliant processing of its employees' personal data.

Lawful intercept

We respect our customers' right to privacy. At the same time, we are legally obliged to disclose certain information, initially obtained by intercept, to national investigation agencies. Our infrastructure must facilitate this and we must cooperate with law enforcement agencies as specified in the Telecommunications Act. To this end, a liaison office is available 24/7 to facilitate interaction with law enforcement for all KPN brands. We assess incoming warrants and conduct checks to filter out any uncertainties. If we discover discrepancies, we reject the warrant, inform the agency involved and follow the relevant procedures. In 2019, a mismatch was found in 1.7% of warrants received. Of the interception orders, 99.6% concerned telephone numbers and in 0.4% of cases we were ordered to intercept IP addresses.

Within the context of KPN's Notice and Take Down code of conduct, KPN received five complaints in 2019. These complaints regarded copyright and intellectual property disputes. In most instances, we were able to establish direct contact between the complainer and the accused in order to reach a bilateral understanding. In none of the cases did KPN provide the requested identity information.

Security

As the world is challenged by ever more sophisticated cyber attacks, keeping KPN's systems safe and secure demands constant vigilance and rapid adaptability. We work continuously to improve security for our customers and society, by making the KPN network and use of the network safer, now and for the future. This is vital to our strategy of delivering the most secure and trusted network.

KPN's security approach is based on the security lifecycle model: prevent, detect, respond and verify. Our Strategy & Policy team works to prevent vulnerabilities and incidents, while our REDteam of ethical hackers proactively detects vulnerabilities across the organization. We have a Security Operations Center (SOC) to monitor our networks and infrastructures 24/7 and reactively detect vulnerabilities, and a Computer Emergency Response Team (CERT) to provide rapid incident response. We have a team of senior security officers to verify the implementation and effectiveness of our security measures. Finally, our Labs team is an R&D innovation unit which aims to improve security for customers and make KPN future-proof.

Enhancing security for customers

To improve security for customers, we started developing a project in 2018 using robotics to automate the manual issuance of digital security certificates, thereby improving the resolution of common SSL vulnerabilities and minimizing the risk of errors. We continued this development in 2019 and are embedding this automation in the process of issuing certificates for our customers and for internal use. We also developed a better understanding of network traffic by deploying Flowmon probes in the KPN network.

We implemented a central multi-tenant platform for end-point protection, which will eventually manage all KPN's servers. As part of our partnership with the supplier, we are able to share our knowledge and experience in end-point detection and response. Our end-point protection for workspaces and mobile devices is live and operational.

Enhancing security for – and with – society

Cyber security involves offensive and defensive activities between parties with significantly different cyber capabilities, strategies and tactics. This requires fundamental cooperation that we can only achieve if organizations across the public and private domain work together and pro-actively share knowledge.

At KPN, we share our security knowledge and innovations with the world around us to help improve security in society. We continued our Guest Hacker programs, hosting outside experts on topics such as high-tech crime to ensure that insights from inspiring speakers become widely available. Another event we organized was Kids Cyber Day for kids and their parents. KPN was the main partner for the Dutch Alert Online campaign in 2019, as we have been for the past seven years. Our ethical hackers team won the third prize in the Global Cyberlympics, a prestigious international cybersecurity championship.

We made our KPN Security Policy (KSP) app available for Android via the Google Play store. The purpose of the KSP is to provide an unambiguous set of measures and requirements that KPN uses for security, continuity of services and products.

Innovation for future-proof security

We continued the research on post-quantum cryptography together with Radboud University. The aim of the research is to modify current cryptographic protocols to make them quantum-resistant. The results of the research are expected in 2020. Together with Radboud University, we also conducted a background study into cryptanalysis on post-quantum signatures.

KPN and QuTech signed a new cooperative agreement to work together on making the quantum internet a reality.

Securing our network and operations

We deployed a central log management environment and implemented a monitoring environment for active security incident and event monitoring of networks and infrastructures by the SOC.

We also continued developing our business continuity management tool, Q-carbon. We are also using DANE (an internet security protocol) for KPN email servers, with which we follow the 'comply or explain' rules of the Dutch government.

In terms of security awareness, we organized a company-wide workshop on the mitigation of insider threats and introduced an e-learning module to raise security awareness. This was mandatory for all KPN employees.

Detecting and resolving breaches

In 2019, more than 10,000 processed virus notifications were detected based on information from trusted partners. In ~100% of cases, our KPN Abuse team could act on information within eight hours to help customers infected by malware, exceeding our 98% target.

Our performance: Safeguarded privacy and security

Bribery and corruption

We expect our employees to report any suspicion of non-compliance with the Code of Conduct. Following a report, a KPN Security and/or KPN Compliance expert investigates the potential violation. The outcome may lead to disciplinary action. The severity of the disciplinary action is determined by the nature and circumstances of the incident, and may include termination of employment. If desired, employees can also use the SpeakUp Line, an anonymous reporting procedure managed by an independent organization.

In 2019, we performed an annual Fraud Risk Assessment (FRA) in order to comply with internal and external fraud regulations (including KPI GRI-G4 disclosure SO3), to increase fraud risk awareness and to evaluate the control framework for fraud (risks and controls). Fraud risks identified hardly changed compared to 2018. Fraud risks are largely mitigated by internal control activities. Residual fraud risk is sufficiently mitigated with process and soft controls.

In 2019, 207 internal fraud cases were found (2018: 175). These concerned such things as theft from goods and illegal orders or subscriptions. We imposed sanctions and took action to repair the shortcomings in procedures and systems in order to prevent similar issues in the future. Furthermore, 12 employees had their contract terminated. In 42 cases, we prematurely terminated the contracts of temporary staff.

None of the fraud cases are related to corruption or bribery incidents, so we did not define any KPIs on these topics. Our KPN Security Policy on Incident Management describes how we deal with incidents if they occur. The KPN Corporate Security Office has a procedure in place to investigate reported incidences of internal fraud by employees.

Our stringent approach to bribery and corruption is based on multiple policies. These policies are listed in the table below. We distinguish between bribery and corruption in the supply chain and bribery and corruption among customers and employees (such as fraud, verbal abuse or discrimination).

Reference table on bribary and corruption

	Our policy and outcomes	Risks and mitigating measures
Customers and employees	This paragraph describes our policy and the outcome of our policy. For more details, see: Subcode 2 - How we interact with third parties https://ir.kpn.com/websites/kpn/English/7050/code-of-conduct.html	See Compliance and risk, Appendix 4, GRI
Supply chain	Our policy and the outcome of our policy is described in 'Environmental performance and responsible supply chain', p48-53. For more details, see: https://overons.kpn/content/downloads/KPN_SUPPLIER-CODE-OF-CONDUCT.pdf, art 5.1, 5.2	Appendix 4 Appendix 2

Jeroen Jongenelen,
Data protection officer:

"The use of Artificial Intelligence will offer new opportunities and risks for technologies such as chatbots, personalization and deep learning. KPN has a role in ensuring that the privacy of the customers remains guaranteed"

Our performance: Sustainable employability

Creating a more simple, effective and inclusive organization

Focus on people and organization plays an important role in the transformation required to achieve sustainable, organic growth. We are in the process of creating an organization with fewer layers; one that is simpler and more effective, inclusive and diverse. We must also acquire, develop and retain the right people and skills, to ultimately become a stronger, more agile and profitable business.

KPI	Result 2019	Result 2018
Employee survey score for engagement	77%	77%
Overall % women at KPN	21%	22%
Sustainable employability: % of employees with a new job within 1 year of leaving KPN	85%	85%

People make the difference

Our employees make the difference. This is supported by the decision to include a Chief People Officer in the Board of Management in 2019. We want our technologies and solutions to make a difference for our customers, employees and society. We can only do that by investing in the people who work with and develop these technologies and solutions. Supporting the transformation of KPN requires a more comprehensive people approach, one in which employee experience, business needs and our role in society are paramount. Activities will be focused on the most important journeys in an employee's lifecycle at KPN: Join & Next Step, Grow & Develop and Daily Experience.

Engaged and qualified employees

We are committed to engaged and proud employees. We want to be recognized for that, both in-house and externally, and so make KPN a great place to work, both now and in the future.

Each individual employee is responsible for their own vitality and health. As an employer, we want to support our employees by giving them a working environment and opportunities that enable them to take that responsibility. In 2019, we continued to offer our staff the opportunity to take part in the extended program in KPN Academy via their employability budget. Around 70% of staff participated in the employee engagement surveys of 2019. The last survey showed that 77% of respondents feel engaged at KPN, which is stable compared to last year (2018). The survey revealed that during the year employee optimism about the future of KPN increased by 8% at the end of 2019.

In order to improve engagement, we initiated 'Ask Us Anything Live' in which KPN's Executive Committee and Supervisory Board discuss strategy with employees, explain their choices and decisions, and answer employee questions.

Learning & development

Our technologies and solutions make the difference to our clients, colleagues and society. We can only achieve that by investing in our people. The right leadership is crucial to allow our people to grow in an ever-changing environment where they are happy to work and can make a difference to customers.

For the long term, KPN believes that we have to invest in young talents. With our award winning strategic Young Talent program, we try to stay attractive as employer in the war for talent. In 2019, this program was awarded the price for 'Best Traineeship Benelux'. KPN was also recognized by Intermediair as the most favorable employer within the telco industry.

KPN wants employees to take ownership of their long-term employability – that is, their own future. In 2019, we expanded

Our performance: Sustainable employability

our efforts in this area and increased the employability budget for courses and training from EUR 1,000 to at least EUR 1,500 for every employee.

CHALLENGE

Digital transformation

This year, we started a three-year organizational transformation program in which we redesigned units based on an end-to-end view. With this, we aim to create a more effective and efficient organization.

KPN will have to complete a major digital transformation in the coming years. Work processes will be further digitalized. As a result, we aim to gain better insights that can help us become faster and more flexible. We will be working in an even more data-driven and fact-based fashion, and use this to realize efficiency gain.

We need to prepare the organization for the future in all aspects. We face the challenge of having to perform work with fewer people, and at the same time find qualified employees for new functions and tasks. This has resulted in a large turnover of employees: 2,362 employees have left KPN and we welcomed 337 new employees in 2019.

Redeployment

KPN increased the likelihood of employee in-house deployment in the new social plan. This means that employees who are or may be affected by a reorganization and for whom there is a suitable in-house position will not be made redundant; they will instead be redeployed to this position. KPN Match (Internal Mobility) supports employees with finding the most suitable position at KPN by cooperating closely with business. In 2019, 463 employees received IMC support.
KPN's in-house database of vacancies and personal profiles was replaced in 2019 by the platform Match!, which offers employees the most suitable new positions more efficiently and makes matching easier.

Diversity and inclusion

We want to be a great and safe workplace where every person can be themselves and we provide equal opportunities for a successful career. We believe that the diversity of our employees will increase the variety of skills and competences. This also applies for our 'Leer en Werkbedrijf', we create an unique opportunity within KPN for people with poor job prospects.

Gender diversity

Our ambition is to be best-in-class with diversity and inclusion in our sector. In June 2019, we won the Diamond Award from 'Talent naar de Top' in recognition of our achievements in gender diversity within our sector. We scored 21% in 2019 (22% in 2018) and our diversity policies are clear.
It is our ambition to have at least 30% women in senior management at our company in 2023. With the new Board of Management composition per 1 December 2019, KPN now meets the threshold of more than 30% in the Board of Management. Following the proposed appointment of Ms. Guillouard to the Supervisory Board per 15 April 2020, KPN will also meet this threshold for the Supervisory Board.

The policies to increase gender diversity in 2019 were the same as in 2018:

- Vacancies at and above salary scale 12 are only allowed to be filled when women form at least half of the shortlist.
- At least one in three of the appointed functions at and above salary scale 12 should be filled by a woman.
- Making diversity targets part of the discretionary factor for the bonus plan (STI) for senior management.

This also applies to the composition of the Board of Management and Supervisory Board, excluding reappointments.

We also run several activities like mentoring and talent programs, leadership events with a focus on diversity and diverse communications on the intranet to inform, inspire and create awareness on this topic.

KPN believes that investing in women in IT and technical jobs is important. That's why we have a specific focus on attracting women to the technical departments of our company. We do this by offering an internal network, being visible at women in tech fairs and organize inspiring internal events. In 2020, we want to offer specific education for women to re- and upskill into the technical domains.

LGBTQI+

We are committed to creating a workplace where lesbian, gay, bisexual and transgender, queer, intersexual people and people with other sexual and/or gender identities (LGBTQI+) can be themselves and are valued. Our platform KPN Pride addresses LGBTQI+ issues directly related to working at KPN.

In 2019, we sponsored an academic chair for research and teaching in LGBTQI+ topics.
We participated in Amsterdam Pride and Rotterdam Pride, and held various events at our offices and retail stores during other Prides, Coming Out Day and Pink Saturday.

We created a documentary short film featuring two gay men talking about love called 'Timeless Love Connection'. This film was nominated for the Workplace Pride Leadership Awards.

We started sponsoring a new foundation called Studentpride, which will coordinate all LGBTQI+ initiatives at universities, colleges for higher vocational training and student associations.

Reserve forces

KPN and the Royal Netherlands Army are strategic partners in keeping the Netherlands safe. The context and challenges of Defense are changing, and this also impacts their employees. KPN wants to contribute to these challenges, so started two initiatives in 2019.
We created a facility for people in the reserve forces to have five more days off a year to do their yearly basic training to stay in the reserves. We have 20 positions for young military people to do an internship in important fields of work in the army, like cybersecurity and data science.

Social entrepreneurship and SROI

Government authorities stipulate a lot of requirements for social return on investment (SROI) in their contracts in order to stimulate the market for social impact. KPN adheres to these criteria and is intrinsically motivated to include people with poor job prospects.

We hire at least 20 employees with poor job prospects every year. We offer them training at an intermediate vocational (MBO) level combined with professional work in the Customer Service department. They can graduate within one year at MBO level. We do this at our department at our office in Amsterdam.

In 2019, 75% of these employees graduated and 40% of them found a paid job inside or outside KPN. The number of people with poor job prospects joining KPN in 2019 increased 50% compared to 2018. This is part of our firm commitment to the sustainable employment of this target group.

Lisette Oosterbroek,
Vice President
Organization Development & Change:

"We have to shape a KPN that really puts our strategy into practice. Technology is nothing without people and we want our technologies to match our brand promise. Whatever you want to be on the outside, you must also be on the inside"

We also started a new group at our office in Enschede in 2019, hiring 15 people with with poor job prospects and offering them training at an intermediate vocational level.

Human rights

We explicitly endorse the United Nations Guiding Principles on businesses and human rights. The obligation to respect human rights is the basis for our way of working and is reflected in our Code of Conduct and in the requirements we impose on our suppliers. Human rights matter most to us for three different stakeholder groups. The table below provides an overview on the relevant information.

Reference table on human rights policies and outcomes

	Materiality	Our policy and outcomes	KPIs	Risks and mitigating measures
Customers	High for Data Information Protection and Customer Interaction Medium for Responsible Operations see Appendix 3	Our policy and the outcome of our policy is described in the section 'Safeguarded privacy and security', p. 42, section Customer Value, p. 18 and section 'Converged, smart infrastructure', p. 32. Privacy and security. For more details, see: https://www.kpn.com/algemeen/missie-en-privacystatement/onze-missie.htm Topic 'Privacy and security' at https://jobs.kpn.com/over-ons/onze-mensen/human-rights/	Safeguarded privacy and security p. 42 Appendix 2	Compliance and risk, Appendix 4
Employees	Medium for KPN's Corporate Governance and Human Rights Compliance see Appendix 3	Our policy and the outcome of our policy is described in this paragraph. For more details, see: https://jobs.kpn.com/over-ons/onze-mensen/human-rights/	(Regarding privacy) Fines # incidents reported to regulators, (Compliance and risk, p. 81)	Compliance and risk, Appendix 4
Supply Chain	High for Supplier Selection & Good Governance	Our policy and the outcome of our policy is described in section 'Environmental performance and responsible supply chain', p. 48. For more details, see: How we identify low/medium/ high risk suppliers, see: https://overons.kpn/content/downloads/Supply-Chain.pdf What we expect from our suppliers on human rights, see: https://overons.kpn/content/downloads/KPN_SUPPLIER-CODE-OF-CONDUCT.pdf	Environmental Performance and responsible supply chain, p. 48 and Appendix 2	Appendix 4

Our performance: Environmental performance and responsible supply chain

Collaborating on a more sustainable value chain

Over the past decade, we positioned ourselves as one of the world's greenest telecom companies driven by our belief that sustainable business is better business. To maintain this position, we set ourselves far-reaching goals by continually reducing our impact on the environment.

KPI	Result 2019	Result 2018
% Reduction in KPN Group energy consumption compared to 2010[1]	30%	27%
Energy savings by customers as % of KPN Group[1]	93%	88%
% Reuse and recycling	76%	75%
Products with improved design for circularity[2]	4	N/a
Fleet inflow of CO_2e neutral cars	33%	17%
Reduction of value chain CO_2e (scope 3)[3]	16%	16%

1 The 2018 result is changed due to the sale of NL|DC.
2 Cumulative number of products as indicator of progress vs target of a minimum of 15 typical KPN/telco products with improved design for circularity by 2022.
3 Reduction of CO_2e vs base year 2014 (scope 3 emissions).

Jeroen Cox,
Senior Manager Energy & Environment:
"With the return and trade-in programs we have for our in-home equipment and mobile phones, our customers will have noticed our environmental efforts. What's more, our new UHD TV receiver has an energy-saving sleep mode and needs 64% less plastic to produce"

Our ambition for 2025 and beyond

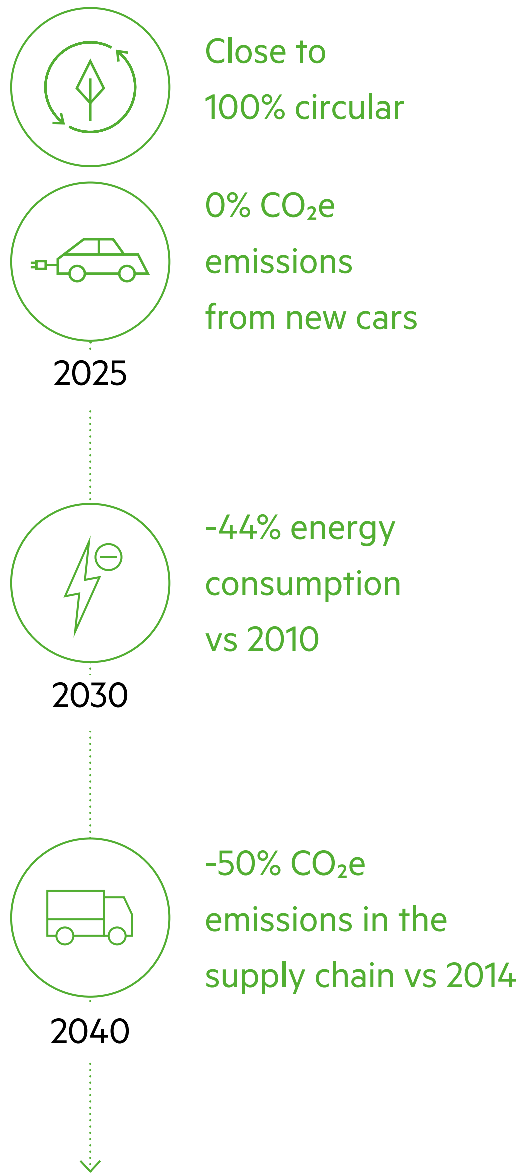
To achieve our goal to be close to 100% circular by 2025, we have set concrete targets, and use a roadmap to track our progress in reducing our materials impact.

For inflow of materials, we have initially focused on the redesign of a minimum of 15 typical KPN/telco products in our efforts to achieve circular design. These includes in-home equipment like set-top boxes or remote controls, and outdoor equipment like street cabinets. Product design can also be improved by, for example, substituting more sustainable materials or using more modular design. We analyze product improvement via product passports. Furthermore, these learnings help us to set stricter requirements to suppliers for the products we procure. Improved circular product designs will in time lead to better reuse and recycling. For customer equipment, our circular ambition is a closed-loop supply chain. Our return rate improved from 67% to 78%.

For outflow of waste and materials, 76% of the weight is reused or recycled. By 2025 we aim to have almost no incineration and landfill. We aim to save energy and reduce our use of materials by replacing some of our hardware with software.

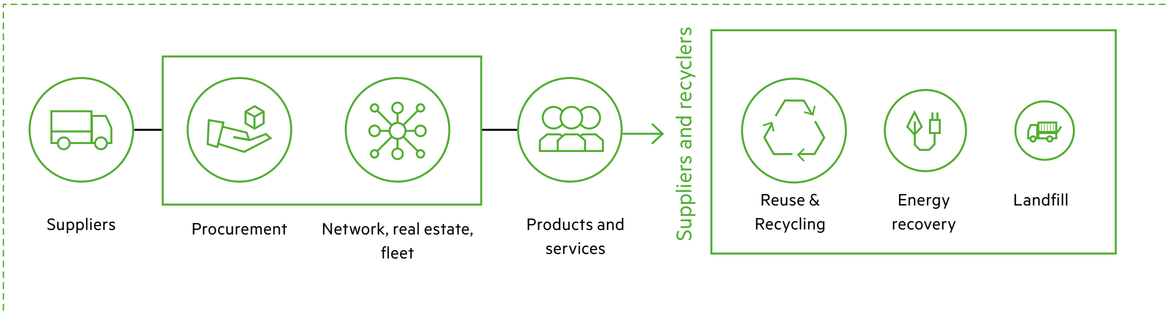
We will reduce CO_2e emissions from our company-car fleet by gradually introducing 100% CO_2e -neutral vehicles. From 2025, all the vehicles we add to our fleet must be 100% CO_2e -neutral. This means we will become 100% climate-neutral without compensation for car fuels by 2030.

By 2030 we aim to reduce our energy consumption by 44% compared to 2010. We aim to reduce emissions in our supply chain with 25% by 2025 and 50% by 2040 compared to 2014. Our CO_2e-reduction targets have been approved by the Science Based Targets initiative, which means they are in line with the agreed limit of a 1.5 °C increase in global warming set in the Paris Agreement. These targets cover our own CO_2e emissions as well as reducing CO_2e emissions in the supply chain, from the equipment production stage right through to when our customers use this equipment and our services.



Detailed environmental figures, including intensity figures, targets and avoided energy consumption by our customers can be found in Appendix 7: Environmental figures. An overview of major KPIs is shown in Appendix 2, calculation methods in Appendix 3 and GRI application in Appendix 9.

Our performance: Environmental performance and responsible supply chain



Integrated value chain approach

Through our approach to sustainability, we aim to influence the environmental impact of our total supply chain, from suppliers to customers. This includes our procurement process, operations, and the impact of our products and services before, during and after use.

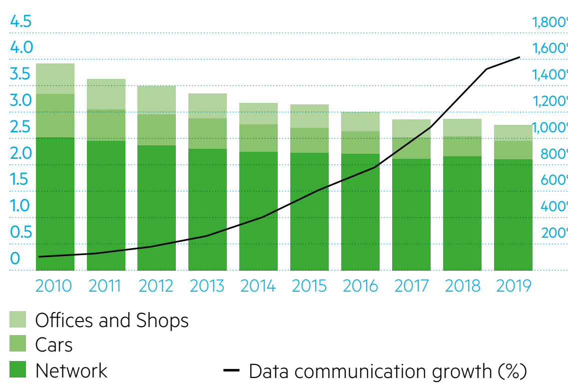
Risks related to climate change and compliance with new environmental legislations are incorporated in our risk management and control systems. Please see the Compliance and risk chapter and Appendix 4 for an overview of the top risks for KPN. We have also taken the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) into account. The TCFD recommendations cover matters such as governance, climate strategy, risk and opportunity assessment, and key performance indicators (see overview in Appendix 3).

Energy and CO_2e reduction

Our total energy consumption in 2019 was 2.728 petajoules. Compared to base year 2010 this is a reduction of 30%, whilst the data communication volume has increased almost 16-fold in the same period. KPN has been climate-neutral for own operations since 2015. If we were not using green energy, our gross scope 1 and scope 2 location-based CO_2e emissions would be 283 kTon CO_2e. Our emissions in the supply chain (scope 3 emissions) are 877 kTon CO_2e. To be climate-neutral, we use 100% green electricity generated by local and European wind farms. Other CO_2e emissions (8%) from gas (buildings), gasoline and petrol (cars and emergency power) are compensated by Gold Standard projects and REDD+ forest compensation projects.

Energy consumption compared to data communication growth

In petajoules



CO_2e emissions own operations Scope 1 and 2 (in kTon)

	Gross scope 1 and scope 2 location based			Net scope 1 and scope 2 market based		
	2019	2018	2010 base year	2019	2018	2010 base year
Scope 1 NL	26.3	30.5	58.8	–	–	58.8
Scope 2 NL	256.3	262.1	301.6	–	–	35.9
KPN Group (excluding NL|DC)	282.6	292.6	360.4	–	–	94.7
KPN non-NL entities	–	–	25.0	–	–	25.0
NL|DC (sold in 2019)[1]	34.7	44.9	44.2	–	–	44.2
Total	**317.3**	**337.5**	**429.6**	**–**	**–**	**163.9**

1 NL|DC is reported separately until 1 October 2019 due the sale of NL|DC. Previous years for NL|DC are based on full year basis.

Circular economy approach

Reduce
Use of virgin materials
- Virtualization
- Dematerialization
- Reused products
- Recycled / biobased materials

Extend
Use products longer and better
- Lifespan extension
- Rates of utilization

Recycle
High-end second life of products and materials
- Reuse
- Recycling

Energy efficiency
Reducing energy usage and increased energy efficiency

Supporting actions

Goal: zero waste

Becoming circular in our operations

KPN is committed to the principles of a circular economy, which means we aim to use fewer materials, enhance product lifespans and take measures to reduce our waste production to zero.

We strive to improve our value chain impact through a procurement process based on sustainable requirements. By the end of 2019, 18 suppliers who support our ambition signed the KPN Circular Manifesto. This represents more than 70% of spend on materials.

The KPN Circular Manifesto is based on four levers: reduce, extend, recycle and energy efficiency. We also address the reduction of CO_2e emissions in our supply chain and have started projects with our suppliers to improve circularity linked to the manifesto levers.

CHALLENGE

When it comes to extending the lifespan of equipment, we face a dilemma. Our efforts in this area potentially conflict with efforts to enhance energy efficiency as this involves replacing equipment with newer, more energy-efficient equipment. That is why we have included energy efficiency in our circular economy approach, ensuring our efforts to reduce energy are aligned with our circular goal of using fewer materials.

The role of procurement in our circular strategy

Our suppliers play a major part in the extent to which KPN can operate as a circular company. As such, we take their environmental and social performance into account. Our circular goal is to ensure that the equipment we buy from our suppliers is designed in such a way that it can easily be separated into reusable parts or recyclable materials. Knowledge of which plastics and metals can be recycled or separated is key to achieving this objective. After updating our Supplier Code of Conduct in 2018 to include circular principles we now also incorporate circular requirements in our Requests for Proposals.

We use certified partners to improve the circularity of our products. Based on the information they provide, we plan to reduce the use of virgin materials in the future and replace them with products and materials designed to be recycled, i.e. with a lifecycle perspective in mind. So far, the following typical KPN/telco products have been improved for circularity: Digitenne TV receiver, IPTV receiver, remote control and street cabinet.

Networks

Our fixed and mobile networks account for most of our electricity consumption (94%). We remove old equipment, replace it with energy-efficient models, and improve cooling. At the same time, we continue to improve the quality and speed of our fixed and mobile networks. Due to the divestment of NL|DC, we have restated our energy usage figures.

As part of our circular ambition, our network components are migrating to cloud solutions and network function virtualization. A pilot case on server virtualization shows a potential for gross CO_2e-emission reduction versus using separate servers. The study shows a fourfold CO_2e-reduction potential in the production phase and even ninefold in the use phase. This may result in less hardware being used in the future. We set up a product passport for our current street cabinet, which is over three times lighter than its predecessor and more circular due to application of recycled aluminum instead of steel. With the help of AI applications, we can better understand our energy consumption and as a result make a more detailed estimate of the energy needs of our network and platforms. This helps to procure power more accurately and further reduce energy consumption in the network.

Our performance: Environmental performance and responsible supply chain

Real estate

We focus on ensuring that the buildings we rent are flexible in terms of both function and layout. Besides flexibility, we also aim for circularity by, among other things, covering a portion of the square meters we use with carpet tiles that contain recycled materials. Some of our furniture is reused or recycled. Our offices have saved 47% in energy compared to 2010 by optimizing work space and implementing an energy-savings program.

Fleet

From 2025 onwards, we aim to only add new CO_2e-neutral company cars. In the meantime, we will continue to reduce the maximum CO_2e emissions allowed of our vehicles by switching to models with cleaner engines. In 2019 our absolute savings on car fuel compared to 2010 was 49%, meaning we met our target.

We encourage employees to work at home if possible and so reduce emissions caused by commuting. Given the increased availability of fully electric cars with a longer range, it is possible for all employees entitled to a company lease car to select a fully electric vehicle. Our engineers continued their efforts last year to use CO_2e-neutral transport as an alternative to petrol cars, to reduce emissions of particulate matter and CO_2e. In 2019, we added 249 electric cars and 16 biogas cars to continue transforming our fleet, which equates to an inflow of 33% CO_2e-neutral cars (lease and engineers). This is higher than our 2019 target of 20%.

Products

Most customer-related products are modems, TV set-top boxes or mobile handsets. For modems and TV set-top boxes, standardization is a good way to ensure reuse and upgrading.

Our 4K Ultra HD TV receiver, which was introduced in 2019, is more than two times as small as its predecessor. It contains 64% less plastic and its covers are made of 33% recycled plastic. Our TV receivers will be more energy efficient thanks to a sleep mode, which was not available in the previous model. Last year, we also started using recycled steel for the covers of our Digitenne TV receiver.

To improve the circularity of our product portfolio, we continue to offer refurbished phones. Our customers can also choose to have their mobile handsets repaired through our repair service or insurance service. We introduced a trade-in offering for customers for mobile phones. With Apple, we introduced a service to hand in phones beyond repair to harvest parts for recycling. Our goal is to ensure a circular treatment of phones by selling them to other customers or using spare parts for repair via our partner network.

Services

IT can play a significant role in activities to combat climate change and its global impact. As demonstrated in the GeSI report 'Digital with Purpose: Delivering a SMARTer2030', digital technologies can have a positive societal value. KPN believes that positive value on environmental impact is linked to our commitment to SDG 12: Ensure sustainable consumption and production patterns, and the Paris Agreement.

As KPN's own operations are climate-neutral, all our services are low-carbon services. Moreover, our customers can reduce their own energy consumption and CO_2e emissions. By using our cloud services, video conferencing and audio conferencing, for example, our business customers can meet online, so reducing the need to commute or office space. This in turn reduces traffic and so energy consumption, CO_2e emissions and particulate matter.

By 2020, we want our services to save an amount of energy for our customers that equates to 94% of KPN's own energy consumption. We measure this avoided energy consumption by calculating the impact on our consumer and business customers for specific products and services (see Appendix 7, table 9). We realized 93% savings in 2019, which exceeds our target of 88%.

Using these services helped our customers to avoid around 200kTon CO_2e emissions, 400 ton PM_{10} emissions and to save around EUR 88m in energy costs. Most of these savings were due to reduced car-fuel consumption (52 million liters). This is the equivalent of the fuel that 61,000 cars use in a year. See Appendix 3 for further information.

Procurement and suppliers

Risks related to the selection and qualification of suppliers/ partners, products and services

As a large company, we purchase many products and services from suppliers. We strive to only do business with suppliers who comply with our Supplier Code of Conduct. This sets out our social and environmental requirements for suppliers. The code is inspired by the Charter of the United Nations and based on the core conventions of the International Labor Organization (ILO). It contains conditions relating to human rights, labor conditions, privacy, safety, environment, bribery and fraud. The code of conduct forms part of our general purchasing conditions.

An intensive and increasingly public discussion about the security of telecom networks and services has developed in the Netherlands in the past year. There are similar discussions in other European countries. The Dutch government has developed a policy that aims to prohibit suppliers from certain countries from critical parts of telecom networks in the Netherlands. The process was finalized with a regulation that sets technical and other requirements for the systems, and for operational security. KPN announced in April that it would in future use Western suppliers for core parts of its network and comply with any further rules.

In 2019 we started integrating a CSR assessment to evaluate how well a company has integrated the principles of CSR into its business and management system. Although this assessment is part of our tender process, we also started asking our approved supplier base to cooperate in doing this assessment.
The scope criteria cover four themes: environment, labor & human rights (employee health & safety, working conditions, social dialogue, child labor, forced labor & human trafficking, diversity, discrimination and external stakeholder human rights), ethics, and the environment and sustainable procurement.
In 2019, all procurement staff involved in purchasing decisions were given the opportunity to take part in a training and consultation in order to analyze the EcoVadis CSR scores and encourage challenging conversations with suppliers to improve their CSR impact.

Our sourcing process is based on a competitive comparison of suppliers, and applies economic, technical and ethical criteria to select suppliers. Since 2018, we have incorporated standard CSR criteria into our tender process. These criteria are:

- Complying with KPN's Supplier Code of Conduct.
- Conflict minerals: We ask our suppliers to undertake reasonable due diligence within their supply chains to ensure the raw materials used in the product under the RFP are sourced only from mines and smelters outside the "conflict region" (originated in the Democratic Republic of the Congo) or mines and smelters that have been certified by an independent third party as "conflict-free" if sourced within the "conflict region").
- Promoting the reduction of so-called virgin materials, i.e. new, materials not previously used.
- Promoting reuse and recycling of KPN products to reduce the amount of landfill.
- Extending the lifecycle of products.
- Promoting the energy efficiency of KPN products.

As suppliers have a direct influence on the communities in which they operate, KPN reviews their impact on the environment and the working conditions of staff by means of a set of criteria. Our sourcing process (new, extension, renewal) includes a qualification process, which means classifying the supplier based on the potential social and environmental risks that their operations, products and services represent. For details reference is made to Appendix 8.

Sustainability checks

Working with Joint Audit Cooperation

KPN is a member of the Joint Audit Cooperation (JAC). JAC is an association of 17 telecom operators (AT&T, Deutsche Telekom, Elisa, KPN, MTS, Proximus, Orange, Rogers, Swisscom, Telefónica, Telenor, Telia, Telstra, TIM, Veon, Verizon and Vodafone) aiming to verify, assess and develop CSR implementation across the manufacturing centers of important multinational suppliers in the ICT industry. JAC members share resources and best practices to develop long-term CSR implementation in the different layers or tiers of the global ICT supply chain.

Social audits

KPN worked together with JAC in 2019 to audit 41% of our critical Tier I, Tier II, Tier III and Tier IV suppliers. Thanks to a gradual increase in the number of members of JAC, 82% of our high-risk suppliers were audited between 2014 and 2019. The aim is to audit critical suppliers every two to four years. Between 2010 and 2019, in cooperation with other JAC members, 639 audits were carried out in production plants (Tier I, II, III and IV) in Asia, Latin America, Eastern Europe and Oceania, and covered a total of more than 1.3 million workers. The suppliers included in the audit campaign were from the production sectors for user devices and appliances, network appliances and IT equipment.

Non-conformities

The table below shows the non-conformities recorded during on-site audits conducted in 2015-2019.

	2019	2018	2017	2016	2015
Business Ethics	3	4	11	7	19
Discrimination	2		1		
Disciplinary practices		1		2	
Environment	17	8	12	18	15
Freedom of association	1	1	1	1	2
Health & safety	39	23	27	31	45
Labor		4		2	5
Unlawful labor		5	1		8
Wages & compensation	3	4	3	6	5
Working hours	6	7	15	16	9
Other			1		
	71	**57**	**72**	**83**	**108**

Corrective action plans based on audits conducted by KPN

For all the non-conformities encountered, we drew up specific corrective action plans (CAPs) that include resolution procedures and timetables. Suppliers and production plants are responsible for following up on these corrective action plans. JAC members monitor the implementation of these plans on a monthly basis.

CAPs set clear deadlines aiming to complete all corrective actions within 12 months. Although all our suppliers are committed to completing all corrective action plans, we have found that some issues are hard to resolve within one year. In 2019, we closed 88% of all non-conformities raised between 2016 and 2018.

5G a step closer

“5G is an essential catalyst for further digitalizing Dutch society”

— **Babak Fouladi**
Chief Technology & Digital Officer

KPN is working to ensure its mobile network is technically prepared for 5G. In our five 5G Field Labs, we are cooperating with customers and technology partners to study the added value of 5G applications. This involves carrying out extensive tests on the latest radio technology and antennas, and using 5G frequencies in combination with the latest generation of smartphones. A mobile download speed of 1.3 Gbps has already been achieved in one of those tests.

To carry out the 5G tests, KPN is using two 5G frequency bands that will be the first to be made available in Europe: the 700 MHz band, which will be available for 5G in the Netherlands after the spectrum auction in 2020, and the 3.5 GHz band, which is expected to be available from 2022. The 26 GHz band will also be used for testing. The release date in the Netherlands is not yet known.

As well as higher download and upload speeds, 5G provides lower latency and greater precision. That is of particular value for the ever-increasing use of mobile video applications, including augmented and virtual reality.

“5G will create countless new possibilities. In the beginning the added value will be limited for consumers, but B2B will really benefit from 5G, certainly in the industrial sector. That makes 5G an essential catalyst for further digitalizing Dutch society,” says KPN Chief Technology & Digital Officer Babak Fouladi.

Read more

Our valuable assets

Brief overview of our valuable assets

Our organization is fueled by six key capitals, enabling us to contribute to the digital transformation arena. Each of the capitals is vital to maximize the value we create for our organization, our stakeholders and society at large in the short and the long term.

Loyal customer base and digital era demands

We aim to build a satisfied customer base, providing customer journeys designed to accommodate the digital needs of our customers, ranging from consumers to large corporate enterprises.

	2019	**2018**
Consumer and Business postpaid customer base	5,425k	5,466k
Consumer and Business broadband customer base	3,163k	3,223k
Interactive TV customer base	2,170k	2,168k
Fixed-mobile households	1,402k	1,343k
Wholesale fixed lines	972k	933k

Strong partnerships and supplier base

We join forces with ambitious technology companies to work on the applications of tomorrow, providing better and more innovative products to our customers while reducing adverse impacts across the supply chain.

	2019	**2018**
Partnering innovative startups & entrepreneurs:	~57	~90
Partnering research centers & universities	4	3
KPN Ventures Fund size	€ 70m	€ 70m
#of critical suppliers	39	53

Future-proof infrastructure and mobile spectrum

We connect telecom and IT activities through investments, partnerships and research in innovations strengthening the capacity of our network and IT infrastructure.

	2019	2018
Capital expenditure	€ 1,115m	€ 1,106m
Average 4G download speed mobile network	68Mbps	53Mbps
Average maximum download speed broadband fixed	236Mbps	221Mbps

Solid financial basis

We focus on value and convergence aiming to realize a return on investment for our capital providers that outperforms the cost of capital while solidifying our financial and competitive position.

	2019	2018
Return on capital employed	9.2%	9.0%
Market capitalization	€ 11.1bn	€ 10.8bn
Leverage ratio	2.2x	2.5x
Credit ratings	Baa3/BBB/BBB	Baa3/BBB-/BBB

Skilled and motivated workforce

We create a more simple, effective and inclusive organization by acquiring, developing and retaining the right people and skills to become a stronger, more agile and profitable business.

	2019	2018
Full-time personnel	11,248	12,431
Average training cost per FTE	€ 2,047	€ 1,895
Employee score for engagement	77%	77%

Green energy

We mitigate our adverse environmental impacts driven by our belief that sustainable business is better business and expressed in our climate-neutral operations and our commitment to a circular economy.

	2019	2018
Green electricity consumption	100%	100%
Energy consumption	2.728PJ	2.841PJ[1]

1 Restated for the sale of NLDC

Corporate governance

Steering the company

The corporate governance framework of KPN is in line with the requirements of the Dutch Civil Code, the Dutch Corporate Governance Code and applicable laws and regulations, including securities laws, and is aligned with our strategy. Furthermore, the company is governed by its Articles of Association and internal procedures, such as the by-laws of the Board of Management and the by-laws of the Supervisory Board.

Legal structure of the company

Royal KPN N.V. is a public limited liability company established under the laws of the Netherlands, with ordinary shares listed on Euronext Amsterdam. The Articles of Association of KPN were last amended on 20 April 2018. KPN has a two-tier management structure with a Board of Management and a Supervisory Board. KPN qualifies as a 'large company' (structuurvennootschap) within the meaning of the Dutch Civil Code and applies the relevant rules of Dutch corporate law. The Board of Management is entrusted with the management of the company. The Supervisory Board oversees strategic and commercial policymaking by the Board of Management and the way in which it manages and directs KPN's operations. In the performance of their duties, the members of the Board of Management and the Supervisory Board are guided by the interests of the company and the enterprise connected therewith and take the relevant stakeholder interests into account. The Board of Management is accountable to the General Meeting of Shareholders in accordance with Dutch legislation.

See Note 24 to the Consolidated Financial Statements for details of KPN's legal structure.

Shareholders

Share capital, listings and indices

KPN's authorized share capital totals EUR 720m, divided into nine billion ordinary shares of EUR 4ct each and nine billion preference shares B of EUR 4ct each. As of 31 December 2019, a total of 4,202,844,404 ordinary shares were outstanding. Since 13 June 1994, KPN's ordinary shares have been listed on Euronext Amsterdam (ticker: KPN). KPN has a Level I ADR program, which allows investors to trade KPN ADRs in the United States on the over-the-counter market (ticker symbol: KKPNY). KPN shares are included in a number of leading indices, including: AEX, the EURO STOXX Telecommunications Index and the STOXX Europe 600 Telecommunications Index.

General Meeting of Shareholders

The General Meeting of Shareholders holds all powers that have not been granted to other company bodies. It has the authority to appoint members of the Supervisory Board, upon binding nomination by the Supervisory Board and to dismiss the Supervisory Board. The General Meeting of Shareholders furthermore adopts the Financial Statements, releases the members of the Board of Management and Supervisory Board from liability, determines the dividend, determines the remuneration for members of the Supervisory Board and approves the remuneration policy and share (option) plans for the Board of Management. Furthermore, certain decisions are subject to the approval of the General Meeting of Shareholders, including decisions entailing a significant change in the identity or character of the company or its business and corporate matters, such as amendments to the Articles of Association of the company, a (de)merger or the dissolution of the company, and the issuance of shares or reduction of the issued capital of the company. Within four months of the end of every fiscal year, the Board of Management prepares Financial Statements, accompanied by an Integrated Annual Report. The Financial Statements are submitted to the Supervisory Board for approval, and subsequently (within six months from the end of the fiscal year) to the Annual General Meeting of Shareholders (AGM) for adoption, and to the Central Works Council for information purposes. Adoption of the Financial Statements does not automatically discharge the Board of Management or the Supervisory Board from liability. This requires a separate resolution by the AGM. Further General Meetings of Shareholders are held as often as the Supervisory Board or Board of Management deem necessary. The Board of Management and the Supervisory Board determine the agenda of the General Meetings of Shareholders. Shareholders who individually or collectively represent at least 1% of the issued capital or who, according to the Official Price List of Euronext Amsterdam, represent at least a value of EUR 50m have the right to propose items for the agenda, within the boundaries of the law. Every shareholder has the right to attend a General Meeting of Shareholders, in person or through written proxy, to address the meeting and to exercise voting rights.

Obligations to disclose holdings

Pursuant to the Dutch Financial Supervision Act (Wft, Wet op het financieel toezicht), legal entities as well as natural persons must immediately notify the Dutch Authority for the Financial Markets (AFM) when a shareholding reaches, exceeds or falls below certain thresholds of the issued capital. The AFM incorporates these notifications in the public register, which is available on its website. See Note 23 to the Financial Statements for the KPN shareholding as at 31 December 2019. Please see 'Composition of the boards' starting on page 73 for information on the composition of the Board of Management and the Supervisory Board, insider transactions and share ownership by the members of the Board of Management and Supervisory Board.

Purchase of shares in the company's own capital and issuance of new shares

With the general aim of flexibility in financing of the company, the AGM authorized the Board of Management to purchase shares in the company's own capital and also decided to reduce the issued capital through cancellation of own shares held by the company by a number that could be determined by the Board of Management. Furthermore, the AGM also designated the Board of Management as the body authorized to issue ordinary shares and to grant rights to subscribe for ordinary shares and to restrict or exclude statutory pre-emptive rights of existing shareholders upon such issuance or granting of rights. The above authorities and decisions are limited to a maximum of 10% of the issued capital as of 10 April 2019 and are applicable until 10 October 2020. Resolutions by the Board of Management implementing the above are subject to the approval of the Supervisory Board. The authorities were not used during 2019.

Supervisory Board

The Supervisory Board supervises and advises the Board of Management, guided by the interests of the company and the enterprise connected therewith and taking into account the interests of the stakeholders. Major investments, acquisitions and various corporate matters are subject to Supervisory Board approval.

Members of the Supervisory Board are appointed by the General Meeting of Shareholders upon binding nomination by the Supervisory Board. The Central Works Council has an enhanced right to recommend persons for nomination to the Supervisory Board for up to one-third of its members. The Supervisory Board must nominate the recommended persons unless it is of the opinion that any such person would be unsuitable to fulfill the duties of a Supervisory Board member or such appointment would cause the Supervisory Board to be improperly constituted. Pursuant to a specific arrangement with América Móvil, América Móvil has the right to designate one person to be nominated by the Supervisory Board for appointment as a member of the Supervisory Board. According to the Articles of Association, the Supervisory Board must comprise of at least five and not more than nine members. Members of the Supervisory Board resign according to a schedule set by the Supervisory Board. A member steps down at the first AGM following their first term in office. In accordance with the Dutch Corporate Governance Code, members of the Supervisory Board can be reappointed once for a four-year term and thereafter for a maximum of two terms of two years, stating reasons for such further reappointment. The Supervisory Board has determined its 'profile', defining the basic principles for its composition. All nominees for election to the Supervisory Board must fit this profile. According to this profile, the Supervisory Board must be composed in such a way that members of the Supervisory Board are able to operate independently of each other and of the Board of Management. The profile is available on KPN's website.
The by-laws of the Supervisory Board comprise, inter alia, rules regarding the members' duties, powers, working methods and decision-making, what decisions by the Board of Management it must approve, training and conflict handling. The by-laws are available on KPN's website.

Committees of the Supervisory Board

The Supervisory Board has four committees: the Audit Committee, the Remuneration Committee, the Nominating & Corporate Governance Committee and the Strategy & Organization Committee. These committees assist the Supervisory Board in its decision-making and report their findings to the Supervisory Board. Their tasks are laid down in charters, which are available on KPN's website. Further information on the activities of the committees in 2019 can be found in the Supervisory Board Report, starting on page 80

Corporate governance

Board of Management

The Board of Management is responsible for setting KPN's strategy and for managing KPN's strategic, commercial, financial, operational, CSR and organizational matters. The Board of Management is accountable for its performance to the Supervisory Board and to the shareholders of the company at the AGM. In performing their duties, the Board of Management focusses on long-term value creation for the company and the enterprise connected therewith, taking into account the interests of the stakeholders.
The members of the Board of Management are appointed and dismissed by the Supervisory Board. Members of the Board of Management are appointed for a four-year term, which ends at the first AGM after that term expires.

Until 1 December 2019, the Board of Management managed its business operations jointly with a number of senior business and staff officers in an Executive Committee. This Executive Committee was dissolved with the expansion of the Board of Management on 1 December 2019.
The by-laws of the Board of Management contain, among other things, rules regarding the members' duties, powers, working methods and decision-making and conflict-handling. The by-laws are available on KPN's website.

Corporate social responsibility governance

Corporate social responsibility (CSR) is embedded in KPN's organizational structure. CSR themes are defined and approved by the Board of Management, including their ambitions and KPIs. Every CSR theme is assigned to a member of the senior management who, as theme owner, is responsible for stakeholder dialogue, targets, progress and results. Each theme owner heads a committee, consisting of management of the key departments involved in this theme.
The theme owners report to KPN's CSR Manager, who is responsible for the overall reporting, approach and cohesion. The CSR Manager reports to the Director Corporate Communication & CSR, who in turn reports to the CEO. Four times a year, CSR data is included in the overall set of business KPIs that is reported to and discussed with the Board of Management. In order to obtain sufficient outside reflection, stakeholder dialogues are held with external experts to advise KPN on its approach to CSR in general and more in-depth on the CSR themes. Climate-related risks and opportunities are considered integral to the governance of operations and CSR. Further details on governance and risk can be found in chapter 'Compliance and risk'.

Compliance with the Dutch Corporate Governance Code

KPN complies with all best practices of the Dutch Corporate Governance Code. An overview of all principles and best practices of the Dutch Corporate Governance Code as well as KPN's application thereof in accordance with the 'comply or explain' principle is available on KPN's website.

Conflict of interest

The handling of conflicts of interest between the company and members of the Board of Management or Supervisory Board is governed by Dutch law, the relevant provisions of the Dutch Corporate Governance Code and the by-laws of the respective boards.

A board member is required to immediately report any (potential) conflict of interest that is of material significance to the company and/or to the member concerned to the chairman of the Supervisory Board (or, in case of the chairman, to the vice-chairman of the Supervisory Board). The relevant board member shall not take part in discussions or decision-making on a subject in which they have a conflict of interest. Decisions to enter into transactions in which there are conflicts of interest with members of each of these company bodies that are of material significance to the company or such member require the approval of the Supervisory Board.
There were no conflicts of interest in 2019.

For the Statement by the Board of Management and Responsibility Statement, see page 72.

External auditor

The external auditor is responsible for the audit of the Financial Statements. The AGM appoints the external auditor on a yearly basis, upon a proposal by the Supervisory Board. The external auditor reports to the Board of Management, the Audit Committee and the Supervisory Board to discuss findings pertaining to their agreed upon procedures for the quarterly financial results and audit of the annual financial results. The external auditor attends the AGM to answer questions pertaining to the Combined Independent Auditor's Report, as included in the Integrated Annual Report. The Audit Committee approves every engagement of the external auditor, after pre-approval by the internal auditor, to ensure the external auditor's independence. All Audit Committee meetings were attended by the external auditor. For the role of the internal auditor, see page 71.

Foundation Preference Shares B KPN (Stichting Preferente Aandelen B KPN)

KPN has granted a call option, which is not limited in time, to the Foundation Preference Shares B KPN (the Foundation), to acquire a number of preference shares B in KPN, which have the same voting rights as ordinary shares, not exceeding the total issued number of ordinary shares, minus one share and minus any shares already issued to the Foundation. Upon exercise of the call option, 25% of the nominal value of EUR 4ct per Class B preference share needs to be paid by the Foundation. According to its Articles of Association, the statutory goal of the Foundation is "to protect KPN's interests (which includes the interests of stakeholders, such as customers, shareholders and employees), by, among others, protecting KPN from influences that may threaten its continuity, independence and identity". Consequently, in the event of any circumstances where the company is subject to influences as described above and taking public security considerations into account, the board of the Foundation may decide to exercise the call option, with a view to enabling the company to determine its position in relation to the circumstances as referred to above, and seek alternatives. The board of the Foundation is of the opinion that under normal circumstances it should not exercise its voting rights for longer than a limited period. The members of the board of the Foundation are J.H. Schraven (Chairman), A.P. Aris, P. Wakkie, F.J.G.M. Cremers and F. van der Wel. The Board of Management has concluded that the board of the Foundation is independent from KPN in accordance with parts c and d of the first subsection of article 5:71 of the Dutch Financial Supervision Act.

The views of the board of the Foundation, summarized above, have been published on the Foundation's website (www.prefs-kpn.nl).

Tax and regulations

Monitoring developments proactively

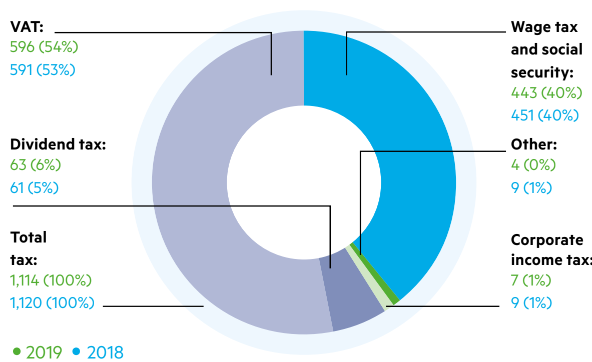
Tax position

The overall tax position and optimal use of subsidy opportunities is managed by KPN's Corporate Tax Department, whereby KPN adheres to its Tax Strategy and Policy (see ir.kpn.com).

It is important to KPN to create sufficient tax awareness throughout the organization. KPN regularly organizes meetings, knowledge updates and trainings, to ensure employees act with integrity and adhere to KPN's tax strategy and policy.
In line with the tax strategy and policy, KPN's Tax Control Framework (TCF) is continuously monitored and optimized. KPN's TCF is also part of the RFR GRIP Framework (see page 68 Compliance and Risk). Furthermore, the audit by EY includes the review by EY tax specialists as the assessment process is complex and subject to judgement (see page 170). The relation with the Dutch tax authorities is based on the principles of mutual trust, understanding and transparency and is formalized through a covenant. KPN is self-assessing and discusses, pro-actively and transparently, current and potential future tax issues with the Dutch tax authorities. In line with its new policy, that applies for the 100 largest and most complex organizations, the Dutch tax authorities will replace, in 2020, the current covenant with an Individual Monitoring Plan ("individueel Toezicht Plan"). As the relation will continue to be based on aforementioned principles, KPN does not anticipate a significant change in this respect.

In 2019, the following main developments and projects were relevant to KPN from a tax perspective:
- Changed Dutch corporate income tax rates; for 2020 and 2021 a change in corporate income tax rates has been enacted during Q4 2019 which impacts the valuation of our deferred tax asset (see Note 8, pages 120-123).
- The enactment of rules that changed the fiscal unity regime, which required KPN to intensively research the developments as of 1989 in the group structure.
- The Dutch State Secretary of Finance published a new Dutch VAT decree regarding the VAT treatment of vouchers at the end of December 2018. The VAT decree regarding 'Telefoonkaarten en mobiele telefoonabonnementen' that was in place until the end of 2018 has been withdrawn. Based on this new VAT decree, KPN discontinued the lower remittance of VAT (see also pages 153 and 197).
- Restatement IFRS 16: The Implementation of IFRS 16 resulted in two new significant temporary differences: one on the right-of-use assets and one on the lease liabilities. For tax purposes, the former IFRS principles continue to apply (see also Note 2 page 105).
- Restatement IFRS 15 and 9: The final outcome of the discussion with the Dutch tax authorities on the change in accounting of our mobile propositions was in line with the expected outcome recorded in 2018.
- Changes in the corporate structure, such as mergers, liquidations, divestments and other changes like brand integrations, bond issues (including tenders), etc.
- Tax allowance for labor costs relating to R&D activities ("WBSO"); KPN is continuously monitoring its innovation activities to substantiate the tax allowance for labor costs.
- Update of the definition of KPN's tax strategy and policy (see ir.kpn.com) and formalizing its mission and vision.
- Further improvement of KPN's TCF, especially with regard to the VAT position, which has been acknowledged and confirmed by the Dutch tax authorities.
- Good progress in further automation of the CIT compliance process; increasing quality and limiting lead time.

Taxes paid (€ million)



Tax and regulations

Forward-looking

Based on current projections, KPN expects to fully utilize its Dutch realized and unrealized losses well within the expiration limits of applicable tax law. Through offset of available losses in the Netherlands, KPN expects to pay limited but increasing amounts of corporate income tax for the coming years. KPN will continue to extend and optimize its tax control framework, supported by simplification and automation. To obtain additional assurance, KPN engaged a third party to perform an objective review of KPN's corporate income tax position.

KPN expects to continue the discussions with the Dutch tax authorities on the change in the VAT calculation methodology regarding vouchers.

KPN continues active participation in representative associations that seek to develop best practice around disclosures. Furthermore, KPN is closely monitoring developments on tax, such as the initiative of The Dutch government to explore a reform of the Corporate Income Tax Act.

The following tax metrics apply for 2019

Eff. tax rate (ETR) 7.3%
in 2018: 42.7%

EBIT tax rate 23.1%
in 2018: 23.7%

Normalized ETR 21.6%
in 2018: 22.7%

Cash tax rate 1.1%
in 2018: 1.7%

The reported difference between the effective tax rate and the cash tax rate is mainly caused by the impact of available tax losses (carry forward). See also Note 8 page 120. The reported corporate income taxes paid relate to taxable profits that cannot be offset against these losses (payable by entities not part of the relevant tax group). The EBIT tax rate is lower than the statutory rate mainly due to the impact of the innovation box facility.

Tax overview for continuing operations per country

In € million or FTE		Total unrelated income[1]	Total related income[1]	Profit before tax excl. associates and joint ventures	Corporate income tax expense	ETR	Corporate income tax cash flow	Corporate Income tax receivable/payable	Other tax cash flow mainly VAT & payroll	Property plant and equipment	Employees end of year
NL (regular operating activities)	2019	5,633	453	678	-49	7.2%	-6	–	-1,106	5,432	11,241
	2018	5,465	558	535	-223	41.2%	-7	1	-1,111	5,593	12,226
GERM (regular operating activities)	2019	1	9	–	–	–	-1	–	–	–	7
	2018	1	5	–	–	–	–	–	–	2	15
IRL (main activity: insurance)	2019	–	6	2	–	–	–	–	–	–	–
	2018	–	5	3	–	–	–	–	–	–	–
UK (main activity: pension)[2]	2019	–	–	-5	–	–	–	–	–	–	–
	2018	3	1	-11	–	–	–	–	–	–	11
USA (main activity: pension)[2]	2019	1	2	-5	–	–	–	–	–	–	–
	2018	219	3	-5	–	–	-2	–	–	–	149
Other	2019	1	1	-1	–	–	–	–	–	–	–
	2018	–	–	1	–	–	–	-1	–	–	30
Total 2019		**5,636**	**471**	**669**	**-49**	**7.3%**	**-7**	**–**	**-1,106**	**5,432**	**11,248**
Total 2018		**5,691**	**574**	**523**	**-224**	**42.7%**	**-9**	**–**	**-1,111**	**5,595**	**12,431**

1 Unrelated income is the total of revenues and (other) financial income.
2 See Note 17 Retirement benefits (page 145 – 147)

Regulation affects our business

KPN is subject to sector-specific regulation and enforcement thereof by regulatory authorities, such as the Netherlands Authority for Consumers and Markets (ACM). As described in the chapter 'Compliance and risk', KPN's internal risk management and control systems are designed to minimize the risk of non-compliance with regulation.

European developments

Regulation of the electronic communications markets is largely based on European legislation. The EU's roaming and open internet access regulations are directly applicable in all member states. The application of the regulation of operators with significant market power is enforced nationally, but under coordination of the European Commission. This still affects KPN in some fixed markets and on fixed and mobile call termination services. Licensing regimes for frequencies are based on national law. Increasingly, also other regulation (such as privacy law and content-related law) has an impact.

The national implementation of the 2018 European Electronic Communications Code, which amends the regulation for the electronic communications sector, should be finalized by 21 December 2020. The scope of this amended regulation Is extended to all interpersonal communications services (including over-the-top), thereby creating an increased level playing field for comparable services. A draft new e-Privacy Regulation (in addition to the General Data Protection Regulation, replacing the existing e-Privacy Directive) is still being discussed by the EU institutions. Various legislative instruments that may have impact on KPN (though sometimes to a lesser extent) are also still being discussed (such as a draft e-Evidence Regulation).

Security concerns based on geopolitical developments

Both at the European and national level increased attention has been given to security concerns in relation to control over telecom operators via investment and to potential security risks in networks. A Foreign Direct Investment Screening Regulation will come to effect on 11 October 2020, aimed at information exchange between EU member states on potential risks for national security and public order in relation to investments. At national level, a draft sector specific regulation, creating new powers for the government to prevent undesirable control (related to security risks for public order or national security) over telecom operators which have a significant role in the market, is still in discussion in parliament. Furthermore, discussions have started at EU level on security requirements for 5G networks. In the Netherlands, legislation has come into effect which allows the minister to impose specific security requirements for network equipment and to mandate operators not to use equipment from certain vendors in specifically designated critical parts of their networks.

Spectrum licenses

The preparations for an auction in 2020 of the 700, 1,400 (L-band) and 2,100 MHz bands are ongoing. In December 2019, a consultation started on the draft rules of the auction, which is expected to start at the end of Q2 2020. The consulted rules include spectrum caps for operators of 40% of available spectrum, both in lower spectrum bands (under 1 GHz) and in total, and define usage and roll-out obligations for the spectrum and minimum prices. Although the 3.5GHz band at European level is seen as the primary band for 5G, severe restrictions on the use of this spectrum still apply in the Netherlands to prevent interference by the use of this band with an earth satellite station of the Dutch Ministry of Defense. It was announced in December 2018 that this spectrum will be released for 5G, after an alternative has been found for the satellite earth station. This spectrum is currently expected to be available by September 2022. An auction is expected to be scheduled in 2022.

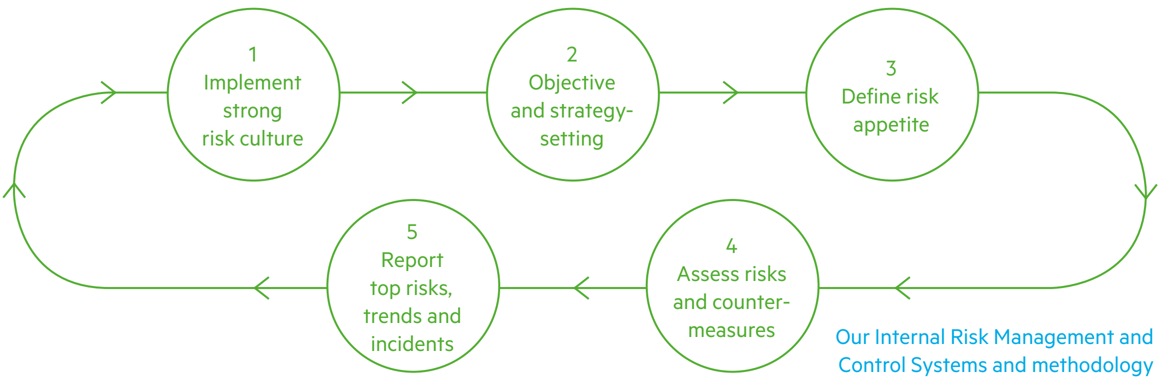
Market analysis decisions in the Netherlands

A decision related to the market for unbundled access to fixed networks came into effect on 1 October 2018. KPN and VodafoneZiggo were designated by ACM as having joint significant market power in this market. Consequently, both KPN and VodafoneZiggo must offer (virtual) access to their networks. ACM's decision is under appeal.

Compliance and risk

Maintaining effective risk management

Deploying effective risk management is a key success factor for realizing our company's objectives. For this reason, KPN has implemented Internal Risk Management and Control Systems. The underlying methodology is based on relevant criteria as set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). Key components of the systems are discussed in more detail below.



Our Internal Risk Management and Control Systems and methodology

Maintaining effective Internal Risk Management and Control Systems requires a continuous and iterative process involving several steps. A strong risk culture and control environment forms an important foundation of our control systems. After setting the strategy, the Board of Management defines its willingness to accept risks (risk appetite) in the pursuit of strategic objectives. Management subsequently assesses the main risks that could hinder the realization of the strategic objectives and defines and implements countermeasures to mitigate such risks, taking into account the risk appetite. Periodically, KPN's performance, top risks, countermeasures, trends and incidents are reported to and discussed with the Board of Management, which defines further remedial actions if necessary.

1. Implement a strong risk culture (control environment)

KPN strives for a business culture in which compliance and integrity are self-evident for all employees. This is, among others, realized by the following actions:

- The KPN Code of Conduct (the Code) applies to all KPN employees, including the Board of Management, the Supervisory Board and temporary staff. It describes how we work in an open, transparent, honest and socially responsible way. We communicate the Code on our corporate website (ir.kpn.com), our intranet, via a mandatory e-learning training for all our employees and via online learning interventions ('Workouts') that target specific segments of the employee population. We have a stringent approach to bribery and corruption (see page 44), fraud and all other forms of (illegal) misconduct, including facilitation payments. The effectiveness of, and compliance with, the Code is structurally assessed by:
  - Actively detecting and investigating any alleged misconduct and taking appropriate disciplinary action if misconduct is substantiated.
  - Monitoring that all staff (both internal and external) completed the e-learning training for the Code.
  - Structural reporting of incidents to the Board of Management and (at least annually) to the Supervisory Board.
- To strengthen the tone at the top and in other management levels, we frequently conduct fraud risk assessments, including a risk assessment on attitude and behavior, and provide integrity training.
- To emphasize our desired company culture and behavior and create awareness in the business, we have implemented a communication and training program on compliance and integrity subjects. Information that is important to share because of (changes in) applicable policies, laws or regulations or because of a necessity or demand in business (risk or need-based) is shared by e-learning, workshop or classroom training.

- The Business Control Framework (BCF) comprises all corporate policies and guidelines that are mandatory for all of KPN's segments and entities. In 2019, KPN conducted a complete review of the BCF and updated the policies where necessary.
- KPN requires all employees and encourages external parties to (anonymously, if desired) report any misconduct by KPN employees (or suspicion thereof). Our whistleblower policy complies with the Dutch Whistleblower Act.
- We periodically measure the state of organizational culture, compliance and integrity as perceived by our employees and report results as well as plans for improvement to senior management, and initiate responses, if deemed necessary.
- The Board of Management has a discretionary authority to adapt the variable compensation of senior executives, based on their demonstrable efforts in promoting a culture of compliance and integrity.

2. Objective and strategy setting

KPN's objectives and strategy are described on page 12. During the objective- and strategy-setting process, top management takes into account the company's known risks and opportunities, and its risk appetite (see next step). The objectives and strategy are discussed with the Supervisory Board.

3. Define risk appetite

Pursuing any business objective inevitably leads to taking risks. Risks can jeopardize achieving those objectives in various ways. Each type of risk encountered is being dealt with in a manner that matches the risk appetite of the Board of Management. The risk appetite is the total residual impact of risks that KPN is willing to accept in the pursuit of its (strategic) objectives. The risk appetite per strategic objective or risk area is determined annually by the Board of Management. These risk areas comprise themes such as financial, operational, strategic, compliance and (information) security themes.

Risk areas with a low risk appetite, and hence a low acceptable residual risk, require strong risk management and strong internal controls. Risk areas with a high risk appetite require relatively less risk management and internal control effort. Our main risks and our response to those risks are summarized on page 70 of this Integrated Annual Report.

KPN has a prudent risk appetite, which can be described per risk category as follows:
- Strategic risks: In the pursuit of our strategic objectives, KPN is willing to accept reasonable risks in a responsible way, taking into account our stakeholders' interests.
- Operational risks: KPN is committed to a high quality of customer service resulting in an increasing NPS. We aim to limit the number of interruptions in our networks, services and systems as much as possible. We implement strict policies to keep our customer data private, safe and secure.
- Financial risks: We strive for the right balance between a prudent financing policy, sufficient investments in the business and fair shareholder remuneration. KPN is committed to an investment-grade credit profile. See Note 12 to the Financial Statements. For tax matters, KPN has defined a detailed tax risk appetite dashboard.
- Compliance risks: We are committed to fully complying with relevant laws and regulations and have a zero tolerance approach to bribery and corruption, fraud and all other forms of (illegal) misconduct.
- Financial reporting risks: We have effective control frameworks in place to minimize the risk of material misstatements and errors in our financial statements.

4. Assess risks and countermeasures

KPN has implemented effective Internal Risk Management and Control Systems to manage its main risks. The main part of these systems comprises seven KPN Internal Control Systems, that cover the most relevant risk areas for KPN, as summarized in the table below:

KPN Control System	Control system objective
Liquidity Management and Financial Framework	Maintaining sufficient liquidity for continuity purposes and maintaining financing flexibility
Year Plan & Year Outlook	Creating value
Network Service Levels	Maintaining customer service delivery levels
RFR GRIP Framework	Maintaining investor trust
Compliance Frameworks	Maintaining licenses to operate
Main non-financial KPIs	Measuring strategic success & integrated reporting
IT Security and Continuity	Mitigating cyber threats

Compliance and risk

For each category of objectives (strategic, operational, financial, compliance and reliable financial reporting) KPN has defined different control systems.

Strategic objectives

Every year, we assess the top risks at Group (top down approach) and Segment level (bottom up) and, if necessary, we implement countermeasures to mitigate them within the defined risk appetite. We conducted risk assessments with our Commercial and Operations segments, as well as with selected staff functions in the Corporate Center. The business objectives are detailed in a strategic business plan. Every quarter, segments perform a 'most likely' forecast four to six quarters ahead on their main financials and key performance indicators (the rolling forecast). Segments update main risks and opportunities, resulting in a bandwidth of outcomes around expected performance. Each month, segment management discusses their actual performance with the Board of Management.

Operational objectives

KPN has business continuity plans in place to safeguard the continuity of services to customers and critical systems and processes. To manage our information security and privacy risks, we have implemented the KPN Security Policy as part of the BCF (for more details, see chapter Safeguarded privacy and security on pages 42-44).

We have implemented ISO standards in designated areas to certify operational processes. Additionally, we continuously simplify and digitalize services and processes. We implemented quality improvement plans and continued to focus on improving NPS.

Our main suppliers comply with the Supplier Code of Conduct. Via this code, suppliers confirm that they support and respect the protection of internationally proclaimed human rights and operate in the spirit of the Charter of the United Nations (e.g. by preventing discrimination, child labor or forced labor, and by recognizing and respecting the environment in their business operations). Compliance with environmental law is covered by our ISO14001 certificate.

Sustainability objectives

Risks related to climate change and compliance with new environmental legislations are incorporated in our risk management and control systems. For example, flooding risks (caused by heavy rainfall or rising sea levels) or continuing drought and heat could damage our networks, systems and cables. As such, these risks are managed in KPN's business continuity strategy. With our climate-neutral performance for our own operations and continued focus on absolute energy reduction, we are in a very good position to meet new regulations and customers' expectations (see chapter Environmental performance and responsible supply chain, pages 48-53). Read more in Appendix 3 Transparency, materiality and stakeholder engagement on our alignment in our reporting with the TCFD framework (Task Force on Climate-related Financial Disclosures).

Circularity

Circular Economy aims to reduce the impact of using materials for the product and services we put on market. This strategy not only reduces risk of future materials price volatility, but also prepares our company for future market demands, as our society aims to become more sustainable and decrease its carbon impact. At the same time circular business models require rethinking the business and new innovations arise. We have also noticed the importance of a leading sustainable strategy to attract and retain talent.

Sustainable employability

See chapter Sustainable employability on pages 45-47.

Financial objectives

KPN's Corporate Treasury department manages risks related to cash positions, finance agreements, credit ratings, currency and interest exposures, and non-life insurance (see Note 12 to the Financial Statements). Corporate Treasury has defined policies with clear boundaries for these risks. Compliance with these policies is monitored frequently.

As part of KPN's tax strategy, the Corporate Tax department recommends the most tax-efficient and responsible approach in the interest of all stakeholders, while adhering to KPN's tax policy and complying with all relevant tax laws and regulations. This determines KPN's overall tax risk appetite. As KPN proactively engages with (Dutch) tax authorities, tax exposures (if any) are contained and under control. Besides a potential tax exposure, reputational risk is always part of the consideration to apply particular tax planning. See also the separate Tax and regulations chapter on pages 63-65.

Financial reporting objectives

Our internal controls for Reliable Financial Reporting (also known as RFR GRIP Framework) ensure that material misstatements in KPN's Financial Statements are prevented or detected in a timely manner. Each quarter, Risk Management and KPN Audit assess the overall effectiveness of the controls before publication of the quarterly figures.

The Disclosure Committee examines all reports and documents containing financial information that are intended for external publication, to ensure that these fairly present KPN's financial position and results.

Compliance objectives

Our compliance risk assessment (CRA) framework comprises an integrated framework that oversees risks mainly related to compliance with telecommunications, competition, financial services (e.g. credit) and privacy legislation. Additionally, we monitor compliance with Solvency II requirements (KPN Insurance). For compliance risks, relevant processes and controls have been implemented and are continuously monitored. For risks related to our regulated business (as designated by the Netherlands Authority for Consumers & Markets to have significant market power), compliance controls are tested by dedicated staff all year round.

5. Report top risks, trends and incidents

Segment management provides the Board of Management with a quarterly assurance letter regarding the reliability of their financial reporting, the effectiveness of their internal controls over financial reporting, risk management and compliance with telecommunication laws, internal policies and other laws and regulations. Twice a year, Corporate Control reports top risks and countermeasures to the Board of Management, including main improvement actions, if any.

Summary of main risks and countermeasures

The table on page 70 provides a summary of KPN's main risks and countermeasures, including the expected trends and impact. It also lists a selection of KPIs that are used to monitor the development of the risks and the realization of our risk appetite. The KPIs are frequently monitored in KPN's planning and control cycle and discussed in the Board of Management's business reviews with segment management, including improvement actions where necessary. This is important as the risks of increasing competition, service interruptions, threats to confidentiality, integrity or availability of networks and increased costs as a result of frequency auctions might directly affect our external stakeholders and the value that we create.

For a more extensive list of our risks and countermeasures, see Appendix 4.
This extensive list also reflects three emerging risks that KPN identifies for the near term:

- Geopolitical volatility, driven by rising international tensions, protectionism and security concerns, may impact our ability to do business in any part of the world. These concerns could lead to international bans and other sanctions on suppliers of hardware and software. See also Appendix 4, page 199.
- The increase in new entrants offering alternative or private networks, e.g. for telecom or IoT services. Due to these alternative networks, customers are no longer dependent on the networks of existing providers, which could lead to higher churn in the longer run and lower cash flows to finance new investments. KPN addresses this upcoming risk by implementing the best converged smart infrastructure e.g. by accelerating fiber roll-out and full modernization of our mobile network. See also Appendix 4, page 194.
- Continued climate changes in the future could lead to rising sea levels, extreme rainfall or extreme heat and drought. These weather conditions could disrupt our systems and networks and consequently could negatively affect the quality of our services and customer satisfaction. KPN manages this upcoming risk by investing in a high quality and resilient design of our networks. Additionally, KPN has a strong Business Continuity Management program, with adequate back-up and recovery plans in case of emergencies. See also Appendix 4, pages 195-196.

As stated in section 3 sub 1.c of the Non-financial Information Disclosure Decree (Besluit bekendmaking niet-financiële informatie) of 14 March 2017, KPN identified and assessed its main risks regarding environmental, social and personnel matters, human rights and anti-bribery and corruption. For more details on these risks, see Appendix 4.

The table on pages 189-191 of Appendix 3 provides an overview of parties for whom we consider ourselves responsible for the implementation of our non-financial policy.

Compliance and risk

Strategic objective	Risk	Risk category and risk appetite	Main countermeasures (summary)	Impact
Organic sustainable growth; Focusing on profitable growth segments	Increased competition from current competitors or new market entrants, or new emerging disruptive technologies. Trend: ↗	Strategic risk KPN is willing to accept reasonable risks in a responsible way.	• Offer converged services such as KPN ÉÉN MKB and KPN Hussel • Implement the best converged smart infrastructure e.g. by accelerating fiber roll-out and full modernization of mobile network • Focus on profitable segments and high-value customers with one strong KPN brand • Improve NPS and offer high quality of service to customers • Develop new additional services for customers	High: the described risk could lead to lower profitability as well as lower market shares. In the longer run, it could impact our continuity. **Monitoring KPI:** Market shares Service revenues
Best converged smart infrastructure; Accelerating simplification and digitalization	Damage, service interruptions, operational issues in KPN's technical infrastructure and IT Insufficient transformation progress by reducing complexity, legacy and costs in KPN's operations Trend: →	Operational risk KPN is committed to a high quality of customer services and to limit disruptions as much as possible.	• Accelerating fiber roll-out and full modernization of mobile network, moving to All IP • Network stability program to ensure availability of our (critical) services • Business Continuity Management, back-up and recovery plans in case of emergencies (e.g. 'be alert' procedures) • Implement lean operating model, including digitalization, rationalization of networks, IT and portfolio	Medium; the incidents could negatively impact KPN's customer satisfaction, reputation and profitability. **Monitoring KPI:** NPS Weighted downtime reduction # Major incidents
Best converged smart infrastructure; Organic sustainable growth	Threats to the confidentiality, integrity or availability of KPN's networks, systems or (customer) data caused by cyber attacks or terrorism Trend: ↗	Operational risk KPN is committed to limiting incidents as much as possible and implements strict policies to keep our customer data private, safe and secure.	• Continue and reinforce strategic security programs, such as Permanent Vulnerability Management • Continue implementation of the KPN Security Policy • Continue and strengthen Security Operations Center	High; the incidents could lead to loss/theft of customer data, higher costs, penalties and reputational damage. This risk could impact our continuity. **Monitoring KPI:** Potential harm of security incident # data leakages
Organic sustainable growth	New regulatory decisions in the EU and the Netherlands. Non-compliance with regulation, including privacy and tax regulations Trend: →	Compliance risk KPN is committed to full compliance with relevant laws and regulations.	• Proactive stakeholder and reputation management including dialogue with regulators • Strengthening the effectiveness of the compliance organization and internal controls • Proactive internal compliance investigations	Medium; the risk could affect KPN's future operations and profitability and cause reputational damage. **Monitoring KPI:** Fines # incidents reported to regulators
Best converged smart infrastructure (100% 5G ready by end 2021)	Spectrum auctions in the Netherlands could entail high costs. Trend: →	Strategic and financial risk KPN is willing to accept reasonable risks in a responsible way.	• Preparation of auctions by experienced KPN team and external experts; simulation of auctions • Investigate alternative combinations of spectrum and advanced techniques to meet customer demands	High; KPN could pay a high price for the required spectrum. This risk could impact our continuity. **Monitoring KPI:** N/a

↗ risk is increasing (worsening) → risk is stable ↘ risk is decreasing (improving)

Governance of risk management and compliance – three lines of defense

Although the Board of Management is ultimately responsible for risk management and compliance, it is business management's duty to effectively identify, assess and manage the main risks of the company, in line with the steps discussed in the previous paragraphs (first line of defense). The Risk Management and Compliance departments (second line) are responsible for the design of the risk management and compliance policies, and to support and challenge business management in their assessment and management of top risks. KPN Audit (third line) performs, where necessary, independent reviews of the design and operational effectiveness of the Internal Risk Management and Control Systems. The main results of both the risk assessments and the evaluation of the internal Risk Management and Control Systems are shared with the Audit Committee of the Supervisory Board and discussed with the external auditor.

Internal audit

KPN's internal audit function (KPN Audit) assesses, in line with Dutch Corporate Governance requirements, the design and effectiveness of the Internal Risk Management and Control Systems and provides assurance to both the Board of Management and the Audit Committee concerning the 'In Control status' of KPN's organization and processes. Moreover, KPN Audit conducts ad hoc financial, information technology, strategic and operational audits and special investigations. KPN Audit conducts its activities in a manner based on a continuous evaluation of perceived business risks and has full and unrestricted access to all activities, documents, records, properties and staff. The Chief Auditor reports to KPN's CEO, quarterly KPN Audit reports are submitted to and discussed with both the Board of Management and the Audit Committee. KPN Audit liaises extensively with the external auditor, inter alia, based on International Standard on Auditing 610.

Description and evaluation of the Internal Risk Management and Control Systems

As stated in principle 1.2 of the Dutch Corporate Governance Code and related best practice provisions, KPN has designed and implemented Internal Risk Management and Control Systems to identify and manage the risks associated with the company's strategy and activities. In 2019, KPN Audit systematically assessed the effectiveness of these systems. A summary of the main Internal Risk Management and Control Systems is provided in the preceding paragraphs. During the assessment of the design and operating effectiveness of the systems, certain weaknesses and improvement actions were identified and implemented. However, none of these were classified as a major failing, as referred to in best practice provision 1.4.2 sub iii.

Despite our strong Internal Risk Management and Control Systems, KPN faced a number incidents in 2019, including most notably:

- A critical network disruption on 24 June 2019 took KPN's fixed and mobile services, including the primary emergency services number 112, out of service. KPN took immediate action to resolve the outage and, after thorough investigations by experts, implemented improvement actions to prevent recurrence in the future. See page 34 for more information on this subject.
- On 13 September 2019, ACM ruled that KPN had violated the transparency obligations towards consumers on the websites of Telfort and Simyo, on 1) reference to a fair use policy in combination with an 'unlimited' proposition, and 2) wrong page-positioning of the information on the one-time costs. This decision, with a fine of EUR 3.4m, was published on 30 December 2019. KPN has appealed this decision.

Compliance and risk

Statement by the Board of Management and Responsibility Statement

Statement by the Board of Management

The Board of Management is responsible for the effectiveness of the design and operation of KPN's Internal Risk Management and Control Systems. These have been designed to manage the risks that may prevent KPN from achieving its objectives. However, these Internal Risk Management and Control Systems cannot provide absolute assurance that material misstatements, fraud and violations of laws and regulations have been avoided.

The Board of Management reviewed and analyzed:
- The strategic, operational, financial, financial reporting and regulatory and compliance risks, as discussed in section Summary of main risks and countermeasures on pages 69 and 70; and
- The design and operational effectiveness of the Internal Risk Management and Control Systems, as discussed on pages 66 to 69 of this Integrated Annual Report.

The results of this review and analysis were shared with the Audit Committee and Supervisory Board and discussed with KPN's external auditors.

With reference to best practice provision 1.4.3 of the Dutch Corporate Governance Code and the chapter 'Compliance and risk', including Appendix 4, in this Integrated Annual Report, the Board of Management states that, to the best of its knowledge:

i. This Integrated Annual Report provides sufficient insights into major failings in the effectiveness of the Internal Risk Management and Control Systems. There are no major failings to report, see also paragraph 'Description and evaluation of the Internal Risk Management and Control Systems' on page 71.

ii. The aforementioned systems provide reasonable assurance that the financial reporting, as included in the Financial Statements on pages 98 to 164, does not contain any material inaccuracies.

iii. Based on the current state of affairs, it is justified that the financial reporting, as included in the Financial Statements on pages 98 to 164, is prepared on a going concern basis.

iv. This Integrated Annual Report states those material risks and uncertainties that are relevant to the expectation of the company's continuity for the period of twelve months after the preparation of this report.

Responsibility Statement

With reference to section 5.25c paragraph 2c of the Financial Markets Supervision Act, the Board of Management states that, to the best of its knowledge:
- The Financial Statements of 2019 give a true and fair view of the assets, liabilities, financial position and profit or loss of KPN and its consolidated companies.
- The Integrated Annual Report gives a true and fair review of the position as at 31 December 2019, the development during 2019 of KPN and its group companies included in the Financial Statements, together with a description of the top risks KPN faces.

Rotterdam, 21 February 2020

Joost Farwerck
Chairman of the Board of Management and
Chief Executive Officer

Jan Kees de Jager
Member of the Board of Management

Chris Figee
Member of the Board of Management and
Chief Financial Officer

Jean-Pascal Van Overbeke
Member of the Board of Management and
Chief Consumer Market

Marieke Snoep
Member of the Board of Management and
Chief Business Market

Babak Fouladi
Member of the Board of Management and
Chief Technology and Digital Officer

Hilde Garssen
Member of the Board of Management and
Chief People Officer

Composition of the boards

Board of Management

The Board of Management manages KPN's strategic, commercial, financial, CSR and organizational matters. The Board of Management currently consists of seven members.

Mr. Ibarra resigned from office as Chairman of the Board of Management and CEO effective 30 September 2019. He was succeeded by Mr. Farwerck (until 1 December 2019 on an ad interim basis). Following the decision to expand the Board of Management to include technology, key business and people leaders Mr. Van Overbeke (Chief Consumer Market), Ms. Snoep (Chief Business Market), Mr. Fouladi (Chief Technology and Digital Officer) and Ms. Garssen (Chief People Officer) were appointed as members of the Board of Management effective 1 December 2019. Mr. De Jager will resign as CFO on 1 February 2020 and as member of the Board of Management on 1 March 2020. Mr. Figee was appointed as member of the Board of Management and CFO on 1 February 2020.

All members of the Board of Management comply with clause 2:132a of the Dutch Civil Code, which limits the number of positions on a supervisory or management board that a director may hold.

Composition of the Board of Management

Name	Position	Year of birth	Start of term	End of current term
J.F.E. Farwerck	Chairman of the Board of Management Chief Executive Officer	1965	April 2013/ April 2017*/ December 2019*	2024
J.C. de Jager	Board member	1969	September 2014 April 2018*	1 March 2020
H.C. Figee	Board member and Chief Financial Officer	1972	February 2020	2024
J.-P. Van Overbeke	Board member and Chief Consumer Market	1965	December 2019	2024
M.W.M. Snoep	Board member and Chief Business Market	1971	December 2019	2024
B. Fouladi	Board member and Chief Technology and Digital Officer	1969	December 2019	2024
H. Garssen	Board member and Chief People Officer	1973	December 2019	2024

* Reappointment

Composition of the boards

Joost Farwerck

Mr. Farwerck was appointed as Chairman of the Board of Management and Chief Executive Officer on 1 October 2019. He has been a member of the Board of Management since September 2014. Mr. Farwerck started working at KPN in 1994 and has held senior management positions in various divisions. In February 2012, he was appointed as Managing Director Netherlands, so becoming responsible for all of KPN's activities in the Netherlands. In September 2014, he became Chief Operating Officer and took on responsibility for KPN's operating activities. Mr. Farwerck is a member of the executive committee of VNO-NCW, a member of the board of NL-ICT, of the board of FME and a member of the Cyber Security Council. Mr. Farwerck is a Dutch citizen.

Jan Kees de Jager

Mr. De Jager is a member of the Board of Management. From November 2014 until 1 February 2020 he was Chief Financial Officer at KPN. From 2007 to 2012, Mr. De Jager was a member of the Dutch government, first as State Secretary for Finance (from 2007 to 2010), thereafter as Minister of Finance (from 2010 to 2012). As Minister of Finance, Mr. De Jager's responsibilities encompassed the budget, general financial and economic policy, supervision of financial markets and cooperation with international financial institutions. As State Secretary for Finance, Mr. De Jager was responsible for many change processes, among others within the Dutch Tax and Customs Administration. From 1992 to 2007, Mr. De Jager founded and was Managing Partner at ISM eCompany, an e-business solutions company, for which he acted as special advisor after resigning from the Dutch Cabinet until he was appointed to the board of KPN in September 2014. Mr. De Jager is a member of the board of Stichting AECA Nederland, the chair of the Economic Board Zuid-Holland and member of the Supervisory Board of KLM N.V. Mr. De Jager is a Dutch citizen.

Chris Figee

Mr. Figee has been a member of the Board of Management and Chief Financial Officer since 1 February 2020. Prior to his appointment at KPN, Mr. Figee was CFO of ASR Nederland N.V. Before joining ASR, Mr. Figee worked for five years at Achmea, most recently as a member of the Achmea Group Committee and Director of Group Finance. In 1999, he joined McKinsey, where he rose to the role of partner in 2006, a role he fulfilled until he joined Achmea in 2009. Mr. Figee started his career at Aegon, where he held various positions, including that of Senior Portfolio Manager. Mr. Figee is currently also a member of the Supervisory Board of UNICEF Netherlands. Mr. Figee is a Dutch citizen.

Jean-Pascal Van Overbeke

Mr. Van Overbeke has been a member of the Board of Management since 1 December 2019 and Chief Consumer Market since 1 September 2018. In this role, he oversees the day-to-day operations of KPN's Consumer activities. Mr. Van Overbeke is a senior executive with extensive strategic, commercial and operational experience in the B2C telecommunications market. In addition, he also has a broad expertise in transforming telecom companies to digital players. Prior to joining KPN, Mr. Van Overbeke served as Executive Director of SFR. Before that, he was Deputy Group CEO of Lebara, Group Chief Operating Officer at Maxis Communications Group, and Chief Marketing Officer and Chief Commercial Officer at Orange. In his earlier career, he was Head of Trade Marketing, Director Marketing residential market and Director Strategy & Transformation Programs at Mobistar. Mr. Van Overbeke is a Belgian citizen.

Marieke Snoep

Ms. Snoep has been a member of the Board of Management since 1 December 2019. She was appointed as Chief Business Market effective on 1 February 2019. As Chief Business Market, Ms. Snoep oversees the day-to-day operations of KPN's Business activities. She is a senior executive with extensive strategic and commercial experience in the Dutch telecommunications market. Prior to joining KPN, Ms. Snoep was a member of the Board of T-Mobile Netherlands since 2012. She served as Chief Commercial Officer Consumer at T-Mobile Netherlands from October 2017 onwards. Since 2002, Ms. Snoep held numerous management positions in her time at T-Mobile Netherlands, including Chief Commercial Officer Business, CCO Enterprise and Chief Customer Operations, and Director Sales Operations & Process Management. In her earlier career, she held consultancy roles with Solvision (currently Ordina) and Atos Origin. Ms. Snoep is a Dutch citizen.

Babak Fouladi

Mr. Fouladi has been a member of the Board of Management since 1 December 2019. He was appointed as Chief Technology & Digital Officer on 4 December 2018. In this role, he is responsible for KPN's network technologies and the digitalization of processes and services. Mr. Fouladi is an executive with extensive experience in the telecommunications, media and ICT sectors. He has broad expertise in strategy and technology, and a proven track record in digital transformation, product and systems development, network deployment, infrastructure and operations. Prior to joining KPN, Mr. Fouladi has served as Group Chief Technology and Information Officer at MTN Group (South Africa) since 2016. Before that, he formed part of the executive team as Chief Technology Officer of Vodafone Spain and Vodafone Romania. He was also Director for IT Development and Vice President for Multimedia and System Integration in the UK and later Vice President, Systems Integration in Russia for Ericsson. Mr. Fouladi is a British citizen.

Hilde Garssen

Ms. Garssen has been a member of the Board of Management since 1 December 2019. She was appointed as Chief People Officer effective on 10 December 2018. In this role, she is responsible for implementing KPN's HR policy. Ms. Garssen is an experienced HR executive with more than 20 years of experience in developing HR strategies to meet changing business needs, creating innovative and effective HR strategies to attract and retain talent, and establishing talent management processes. Prior to joining KPN, Ms. Garssen served as Senior Managing Director Business Services at ABN AMRO Bank for over two years. Since 1998, she has held numerous HR roles at ABN AMRO Bank, including Chief Human Resources Officer and Managing Director Change, Integration and Management Group Coordination & Reward. Ms. Garssen is a Dutch citizen.

Composition of the boards

Supervisory Board

The Supervisory Board oversees strategic and commercial policymaking by the Board of Management and the way in which it manages and directs KPN's operations. KPN's Supervisory Board currently consists of eight members. At the AGM on 10 April 2019, Ms. Sap and Mr. Hartman were reappointed as members of the Supervisory Board. All members of the Supervisory Board comply with clause 2:142a of the Dutch Civil Code, which limits the number of positions on a supervisory or management board that a director may hold. One vacancy will arise at the closure of the AGM of Shareholders in 2020, as Mr. Van Bommel will be stepping down, having reached the end of his four-year term of office. Mr. Spanbroek, General Counsel and Company Secretary acts as secretary to the Supervisory Board.

Name	Year of birth	Start of term	End of current term	Strategy & Organization Committee	Nominating & Corporate Governance Committee	Audit Committee	Remuneration Committee
D.W. Sickinghe (Chairman Supervisory Board)	1958	9 April 2014 18 April 2018*	2022	x	x		x
P.A.M. van Bommel	1957	12 April 2012 13 April 2016*	2020			x	
C.J. García Moreno Elizondo	1957	10 April 2013 12 April 2017*	2021			x	
D.J. Haank (Vice-Chairman)	1953	7 April 2009 10 April 2013* 12 April 2017*	2021	x	x		x
P.F. Hartman	1949	15 April 2015 10 April 2019*	2023	x	x		x
E.J.C. Overbeek	1967	4 September 2017	2021	x			
J.C.M. Sap	1963	15 April 2015 10 April 2019*	2023			x	
C.J.G. Zuiderwijk	1962	9 April 2014 18 April 2018*	2022	x	x		x

* Reappointment X Chairman X Member

D.W. Sickinghe

Mr. Sickinghe was (re)appointed as a member of the Supervisory Board on 18 April 2018 and has chaired the Supervisory Board since 15 April 2015. His current (second) term of office ends in 2022. Mr. Sickinghe is Managing Director of Fortino Capital (Belgium). Furthermore, he is Chairman of the Supervisory Board of Van Eeghen & Co (the Netherlands), member of the board of uniBreda (Belgium) and member of the board of Guberna (Belgium). Mr. Sickinghe was previously Chief Executive Officer and member of the Board of Telenet N.V. (Belgium) in the period 2001-2013. Prior to that, he held various management positions at Hewlett-Packard (Switzerland), NeXT Computer (France), Wolters Kluwer (the Netherlands) and was founder of Software Direct (France). Mr. Sickinghe is a Dutch citizen.

P.A.M. van Bommel

Mr. Van Bommel was (re)appointed as a member of the Supervisory Board on 13 April 2016 and his current (second) term expires in 2020. Mr. Van Bommel is currently member of the board of management and CFO of ASM International N.V. and, as part of that position, also a non-executive director of ASM PT (Hong Kong). Mr. Van Bommel is also member of the Supervisory Board of Neways Electronics International N.V. Before his appointment as CFO at ASMI, Mr. Van Bommel was CFO at Odersun (a start-up company in the solar industry), CFO at NXP and CFO at various divisions of Phillips. Mr. Van Bommel is a Dutch citizen.

C.J. García Moreno Elizondo

Mr. García Moreno Elizondo was (re)appointed as a member of the Supervisory Board on 12 April 2017 and his current (second) term ends in 2021. Mr. García Moreno Elizondo is currently Chief Financial Officer of América Móvil. Mr. García Moreno Elizondo holds several supervisory and advisory positions, including those of Banco Inbursa and Nacional Financiera. Prior to joining América Móvil, Mr. García Moreno Elizondo held a range of positions, including at the Mexican Ministry of Finance as the Director General of Public Credit and at the Swiss bank Corporation Warburg as executive director and managing director. Mr. García Moreno Elizondo is a Mexican citizen.

D.J. Haank

Mr. Haank was (re)appointed as a member of the Supervisory Board on 12 April 2017 and is its Vice-Chairman. His current (third) term of office ends in 2021. Mr. Haank is currently Chairman of the Supervisory Board of TomTom N.V., a member of the Supervisory Board of Singel Uitgeverijen, a member of the Supervisory Board of Albelli B.V. and a non-executive board member of SPI Technologies Singapore. Mr. Haank was the CEO of SpringerNature, and prior to that the CEO of Elsevier Science and Executive Board member of Reed Elsevier PLC. Mr. Haank is a Dutch citizen.

P.F. Hartman

Mr. Hartman was appointed as a member of the Supervisory Board on 15 April 2015. His current (second) term of office ends in 2023. Mr. Hartman is the chairman of the Supervisory Board of Fokker Technologies Group and of Texel Airport N.V., non-executive director of Constellium B.V. and member of Advisory Board of AviationGlass & Technology. He has been vice-chair of the Supervisory Board of Air France/KLM Group in 2013 - 2017. Before that, he spent 40 years working for KLM, the last seven of those as CEO. Mr. Hartman is a Dutch citizen.

E.J.C. Overbeek

Mr. Overbeek was appointed as a member of the Supervisory Board on 4 September 2017. His current (first) term of office ends in 2021. Mr. Overbeek is Chief Executive Officer of HERE Technologies. Having spent nearly 30 years in the ICT industry, Mr. Overbeek has gained extensive experience in the global digital and communication industry. Prior to joining HERE Technologies, he held several management roles at Cisco, including leading the global services organization and the Asia-Pacific, Japan & China region. Mr. Overbeek is a Dutch citizen.

J.C.M. Sap

Ms. Sap was appointed as a member of the Supervisory Board on 15 April 2015. Her current (second) term of office ends in 2023. Ms. Sap dedicates herself to making the business world and society at large more sustainable. She occupies several supervisory and other functions, including chairing the Supervisory Boards of the GGZ affiliate Arkin, the Netherlands Public Health Federation and Fairfood International. Ms. Sap is also a member of the Supervisory Board of KPMG N.V. and non-executive director of Renewi PLC. Between 2008 and 2012, Ms. Sap represented the Dutch Green Party, GroenLinks, in the lower house of the Dutch parliament, during the last two years of which she was party leader. Before that she worked as an economist in the fields of science, policy and business. She was, inter alia, head of the Incomes Policy department at the Ministry of Social Affairs and Employment, and director of the LEEFtijd center of expertise, a consultancy for sustainable employment issues. Ms. Sap is a Dutch citizen.

C.J.G. Zuiderwijk

Ms. Zuiderwijk was (re)appointed as a member of the Supervisory Board on 18 April 2018 and her current (second) term of office ends in 2022.

Ms. Zuiderwijk is chair of the Board of Management of the Dutch Chamber of Commerce. In addition, she is a member of the supervisory boards of APG and a member of Forum Smart Industry and the NL2025 network. Between 1993 and 2003, Ms. Zuiderwijk worked at PinkRoccade, holding various management posts. Thereafter, Ms. Zuiderwijk was chair of the board of the Hilversum hospital and – following the merger with the Gooi Noord hospital – chair of the board of the Tergooi hospitals. Ms. Zuiderwijk was also a member of the Innovation Platform of the Dutch government (2007 - 2010) and a member of the Care Innovation Platform of the Dutch Ministry of Health (2008 - 2010). Ms. Zuiderwijk is a Dutch citizen.

Composition of the boards

Insider transactions

KPN employees who have access to inside information because of their role profession or duties, including all members of the Board of Management and the Supervisory Board, are subject to the Code of Conduct 'Inside Information'. This Code of Conduct comprises rules for the possession of and transactions in KPN securities by such employees. Members of the Board of Management and Supervisory Board are furthermore subject to reporting obligations to the AFM. The following table provides an overview of transactions in 2019 by members of KPN's Board of Management and Supervisory Board.

Date	Name	Transaction	Price per share
11 April	J.F.E. Farwerck	Award of 195,170 conditional KPN shares	EUR -
11 April	M. Ibarra	Award of 437,962 conditional KPN shares	EUR -
11 April	J.C. de Jager	Award of 210,784 conditional KPN shares	EUR -
15 April	J.F.E. Farwerck	Vesting of 42.50% of the 149,424 conditional KPN shares awarded as LTI 2016 into 37,917 ordinary KPN shares (after sale of part of the shares to finance the income tax)	EUR -
15 April	J.C. de Jager	Vesting of 42.50% of the 162,417 conditional KPN shares awarded as LTI 2016 into 41,215 ordinary KPN shares (after sale of part of the shares to finance the income tax)	EUR -
1 December	J.-P. Van Overbeke	Award of 311,509 conditional KPN shares	EUR -
1 December	M.W.M. Snoep	Award of 156,136 conditional KPN shares	EUR -
1 December	B. Fouladi	Award of 196,732 conditional KPN shares	EUR -
1 December	H. Garssen	Award of 62,454 conditional KPN shares	EUR -

Share ownership Board of Management [1]

Number of ordinary shares	31 December 2019	31 December 2018
J.F.E. Farwerck	407,153	369,236
J.C. de Jager	532,499	491,284
J.-P. Van Overbeke	311,509	–
M. Snoep	156,136	–
B. Fouladi	196,732	–
H. Garssen	62,454	–

1 Shares held by current members of the Board of Management (including vested shares in lock-up period). Share ownership relates to ordinary shares. A share ownership applies, under which the members of the Board of Management are encouraged to acquire company shares equal to 150% of the annual fixed compensation for members of the Board of Management (excluding CEO) and 250% of the annual fixed compensation for the CEO.

Share ownership Supervisory Board

Number of ordinary shares	31 December 2019	31 December 2018
D.W. Sickinghe	380,000	380,000
P.A.M. van Bommel	114,000	114,000
D.J. Haank	24,351	24,351

Report by the Supervisory Board

Supervisory Board Report

2019 was a year with two different focus points for KPN's Supervisory Board. First of all, it was the first full year of the implementation of the company's strategic plan, as announced during the Capital Markets Day in November 2018, of which progress was closely monitored by the Supervisory Board. Secondly, the Supervisory Board was confronted with the unexpected resignation of Mr. Ibarra as CEO, which ultimately lead to changes to the governance of the company.

In all its efforts, the Supervisory Board strives to safeguard the long-term value of our company, in the interest of its various stakeholders – most notably our customers, shareholders and employees. By enabling our employees to use their talents and skills to provide the best services to our customers, we create returns to our shareholders' investments in a sustainable manner – a balance we constantly seek.

The year 2019

Strategy and Business

The company's strategy, presented at the Capital Markets Day in November 2018, got off to a good start in 2019. The Supervisory Board reviewed key aspects of the implementation of the 2019-2021 strategic plan. In 2019, we most notably paid attention to the fiber roll-out strategy, the mobile network upgrade, the brand strategy and its impact, and the impact of our continued focus on simplification on our employees and the employment at KPN. During its regular meetings, the Supervisory Board structurally discussed and reviewed the business performance and related financial performance.

The roll-out of our fiber network gained traction over the course of the year. We strongly support the investments in fiber, as this is our main asset for long-ter m value creation. We discussed with the Board of Management the vendor strategy, in particular in the mobile network, and noted that careful considerations were made in light of geopolitical developments and security considerations. We support the choices made by the Board of Management to implement the multi-vendor strategy and opt for Western suppliers in our mobile core network, while choosing Huawei as supplier for our radio access network. We follow the ongoing dialogue with the government on security matters.

Another key element of the strategy that we carefully monitored was our brand strategy, with the goal of focusing fully on the KPN brand, including the (future) integration of services offered under the Telfort, Yes Telecom and XS4ALL brands into the KPN brand. We discussed the various stakeholder interests with the Board of Management, and were kept closely informed on the progress, most notably around Telfort and XS4ALL. We took note of the public debate that emerged around the integration of XS4ALL. Taking the different stakeholder interests into account, we believe the chosen approach is ultimately in the best interest of the company and its stakeholders.

On the afternoon of 24 June, a critical network disruption took KPN's fixed and mobile services, including the primary emergency services number 112, out of service. KPN took immediate action to resolve the outage, but clearly this had a major impact. The Supervisory Board reviewed the analysis by the Board of Management, including expert investigations. It also monitored the implementation of the improvement actions defined, to ensure that the chances of such outages occurring again are kept to the absolute minimum.

In the first quarter of the year, the Supervisory Board monitored the closing of the intended sale of iBasis to Tofane. Throughout the year, it reviewed the intended divestment of a number of assets that were, in light of the company's strategy, no longer seen as core. The divestments of NLDC (data centers), International Network Services, KPN Consulting and Argeweb are in line with the strategy to accelerate the simplification of the company. The Supervisory Board reviewed the strategic rationale as well as the key terms of such transactions and, where required, ultimately granted its approval thereto.

Corporate social responsibility ('CSR') has, in the past years, become an integral part of KPN's strategy. KPN is conscious of its contributions to society and the UN Sustainable Development Goals, whether directly through its products and services, through the way it runs its business, or via its charity fund 'KPN Mooiste Contact Fonds'. At the same time, it is very much aware that this requires ongoing focus to further reduce its electricity consumption levels, remain CO_2e-neutral, and to become close to circular by 2025. The Supervisory Board continues to support this integral approach towards sustainability.

In order to stay abreast of developments in the industry, the Supervisory Board took note of the views of independent consultants on their views on key challenges – and potential scenario's – for telecom operators going forward. As part of its regular practices, the Board also evaluated its procedures and readiness for responding to a potential take-over attempt on the company or its assets.

Governance

In terms of the governance, an unexpected occurence was Mr. Ibarra's decision in late June to resign from his position as CEO and Chairman of the Board of Management, effective September, due to pressing family reasons. It was unfortunate that this announcement coincided with the major network outage.

The Supervisory Board immediately began a succession process, evaluating both internal and external options, and appointed Ms. Dominique Leroy as the intended CEO. Shortly after this announcement however, Belgian authorities (both the financial markets regulator FSMA and the public prosecutor's office) started an investigation into a share transaction by Ms. Leroy in shares of Proximus. The Supervisory Board closely monitored the situation, and heard the views of various stakeholders and advisors on the matter. Ultimately, we had to conclude that the duration of the investigation was uncertain and unpredictable, which we believed not to be in the interest of our company and its stakeholders. Late September, we therefore decided to withdraw the intended appointment of Ms. Leroy.

Soon after, we nominated Mr. Joost Farwerck as the company's new CEO and Chairman of the Board of Management. His extensive experience at KPN and in the sector, his knowledge of the company, his strong network in the Netherlands, his execution skills, his support from both management and other employees, and his support for the strategy made him the best candidate to lead the Board of Management, and continue the execution and further shaping of the strategy.

At the same time, we announced the intended appointment of Mr. Chris Figee as the company's new CFO per 1 February 2020. Mr. Figee was previously CFO of ASR Nederland, and prior to that held various positions at Achmea, McKinsey and Aegon. Mr. Figee succeeded Mr. De Jager, who held the position of CFO for the past five years. He will leave KPN to continue his entrepreneurial career. We are grateful to Mr. De Jager for his leadership and contribution to the company.

Finally, the Supervisory Board decided to amend the governance structure of the company per 1 December 2019, with an expansion of the Board of Management to six members: next to the CEO, CFO, the positions of Chief Commercial Market, Chief Business Market, Chief Technology and Digital Officer and the Chief People Officer were added to the Board of Management. The incumbents on these positions (Mr. Van Overbeke, Ms. Snoep, Mr. Fouladi and Ms. Garssen, respectively) became members of the Board of Management. This decision emphasizes the joint (statutory) responsibility of this team to manage the company as a whole, and ensures continuity for the longer term. The Executive Committee was dissolved per the same date.

By combining all these decisions – a new CEO, a new CFO and an expansion of the Board of Management – the Supervisory Board intended to create immediate clarity on the future leadership of the company for all stakeholders. We are also very pleased that the new Board of Management now has two female members, which is a third of the Management Board. This is in line with our aim to increase diversity and to comply with the recommendation of the Dutch law (Wet Bestuur en Toezicht) of at least 30% female board members.

Although Mr. Ibarra's resignation and the appointment process following that were certainly not a scenario we could have foreseen, we believe that with Joost Farwerck as the new CEO, and an extended Board of Management, we have a very strong, experienced and motivated team to lead KPN into the future. The Supervisory Board continued to have a regular dialogue with the Central Works Council, and appreciates the open and professional relationship between the Central Works Council, the Board of Management and the Supervisory Board.

About the Supervisory Board

The composition of the Supervisory Board remained un-amended in 2019, with the reappointments of the Ms. Sap and Mr. Hartman at the shareholders meeting in April. The Supervisory Board has a strong mix of backgrounds and experience, supporting a diverse view on a wide range of topics. For an overview of the current skills and competences in the Supervisory Board, please see the skills matrix. See Note 23 of the Consolidated Financial Statements for information on related party transactions.

At all times, the composition of the Supervisory Board was such, that the members were able to act critically and independently of one another, the Board of Management and any particular interest involved, as provided for under best practice provisions 2.1.7 to 2.1.9 of the Dutch Corporate Governance Code.

Report by the Supervisory Board

Skills / Characteristics	D.W. Sickinghe	D.J. Haank	P.A.M. van Bommel	C.J. García Moreno	C.J.G. Zuiderwijk	P.F. Hartman	J.C.M. Sap	E.J.C. Overbeek
Business leadership	x	x	x	x	x	x		x
Industry knowledge (Telco)	x			x				x
Industry knowledge (IT)	x				x			x
Commercial	x	x			x	x		x
Operational	x				x	x		x
Employment / social relations					x	x	x	
Society / government relations					x	x	x	
Corporate Social Responsibility							x	
Financial markets	x	x	x	x				
Finance, Audit & Risk	x	x	x	x			x	
Audit Committee Financial Experts			x	x				
International experience	x	x	x	x		x		x
Executive / Non-executive								
(Full-time) Executive position at another company	x	x	x	x	x			x
Mainly non-executive role						x	x	
Diversity								
Male	x	x	x	x		x		x
Female					x		x	

Throughout the year, seven members of the Supervisory Board, including the Chairman, were independent from the company within the meaning of these provisions. Mr. García Moreno Elizondo, who was appointed upon the nomination of América Móvil, is not considered independent under provision 2.1.8 of the Dutch Corporate Governance Code.

At the end of the 2020 AGM, Mr. Van Bommel will have reached the end of his second term of office, and will therefore step down. In line with the Dutch Corporate Governance Code, Mr. Van Bommel will not be nominated for reappointment. The Supervisory Board is grateful to Mr. Van Bommel for his eight-year contribution to the company, with his extensive financial knowledge.

For the vacancy thus arising, the Supervisory Board has nominated Ms. Catherine Guillouard, currently chairwoman and CEO of the French public transport company RATP Group. Ms. Guillouard brings a wealth of financial knowledge and expertise to the Board, as well as executive experience in large companies and network industries. The Central Works Council and the Board of Management support the nomination. Please also see the activities of the Nominating & Corporate Governance Committee below on this nomination.

With the appointment of Ms. Guillouard, as of April 2020, the Supervisory Board will consist of three women and five men, and hence comply with the recommendation in Dutch law to have at least 30% female board members. We continue to endorse the principle, whether enacted or not, that a Board should have a diverse composition, in gender, but also with regard to skills and experience. Our skills matrix, as set out above, helps us in evaluating our own diversity and setting the right profile for vacancies arising.

The Supervisory Board annually evaluates its own performance. This year's evaluation was carried out in March/April with the support of an independent expert. The evaluation was based on interviews with the members of the Supervisory Board, the Board of Management and the Executive Committee, as well as written questionnaires. The expert reported on its findings during a board meeting, and the Supervisory Board discussed these findings. A number of actions and next steps were defined, including as to the composition of the Supervisory Board (increase number of female members, international background), the effectiveness of board meetings (making good use of closed sessions, improved agenda setting), information provision to the Board (clear expression of needs by the Board), the balance between committees and the Board (role of the Strategy & Organization Committee; evaluation of the Board of Management) and the interaction with the Central Works Council.

Meetings

The Supervisory Board met on 23 occasions in 2019, of which seven were regularly scheduled. The high number of meetings was mainly due to the deliberations around the CEO succession. The overall attendance at the Supervisory Board meetings was 87%. Attendance at regularly scheduled meetings was 91%. As ad hoc meetings were sometimes scheduled only shortly before the meeting took place, the attendance rate was somewhat lower at 85%, e.g. due to travel schedules or conflicting commitments. An overview of attendance per member of the Supervisory Board and per Committee is provided in the table below. In the event members could not join a meeting, the Chairman discussed the matters at hand before and/or after the meeting, in order to obtain the input and views of all Supervisory Board members. Supervisory Board members were also in frequent contact outside of formal board meetings.

Name	Board (23)	Audit (6)	RemCo (6)	NomCo (8)	SOC (0)[1]
Mr. Van Bommel	83%	100%			
Mr. García Moreno	65%	50%			
Mr. Hartman	96%		100%	100%	
Mr. Haank	83%		83%	88%	N/a
Mr. Overbeek	87%				N/a
Ms. Sap[1]	96%	100%	0%		
Mr. Sickinghe	100%		100%	100%	N/a
Ms. Zuiderwijk	87%		100%	100%	
Total	**87%**	**83%**	**92%**	**97%**	**N/a**

1 As of 1 December 2019, Ms. Sap became a member of the Remuneration Committee by law, as she was appointed on the nomination of the Works Council. Due to a conflicting meeting schedule, she could not attend the meeting in December.

Meetings of the Supervisory Board normally commence with a closed part, in which only the members of the Board and (partly) the CEO participate. In the quarterly meetings, this closed session is typically followed by a meeting in which all members of the Board of Management are present. This 'open' part of the meeting typically starts with presentations by management on the state of the business, followed by a discussion on one or more strategic or otherwise relevant topics, the review of the quarterly disclosures and any decisions that need to be taken. When deemed relevant, the meetings may also end with a 'closed' part. The meetings around the CEO succession in 2019 took place without the members of the Board of Management attending. In such meetings, the Company Secretary and Chief People Officer often supported the Supervisory Board.

Committee Reporting

The Supervisory Board has established four Committees: The Audit Committee, the Remuneration Committee (RemCo), the Nomination and Corporate Governance Committee (NomCo) and the Strategy and Organization Committee (SOC). The main considerations and conclusions of each Committee were shared with the full Supervisory Board.

Audit Committee

The Audit Committee had six meetings in 2019 (of which five had been regularly scheduled), all of which were also attended (at least in part) by the CFO, the external auditor Ernst & Young Accountants LLP ('EY'), the internal auditor and the Director Corporate Control. The Chairman of the Supervisory Board attended the meetings when this was deemed relevant. The Audit Committee – as well as the Chairman of the Supervisory Board – met separately with the external auditor.

In line with its tasks, the Audit Committee reviews and discusses all financially relevant matters that are presented to the Supervisory Board, most notably the quarterly and annual reporting and (the financial and risk-related aspects of) the business plan. It has a specific focus on the effectiveness and outcome of the internal control framework and the risk-management systems of the company, for which it receives and reviews reports by the internal auditor, the Compliance Office and the Disclosure Committee. Each quarter, the Audit Committee also reviews the conclusions of the external auditor, as included in its Board Report. Overall, the Committee is satisfied with the processes around external reporting as operated by the company, as is also confirmed by the reports from the internal and external auditors. The audit plans, both for the internal and external auditor, are annually reviewed by the Committee, and are subsequently submitted to the full Supervisory Board for its approval.

Report by the Supervisory Board

During 2019, the Audit Committee also monitored KPN's financing policy and profile. It reviewed and supported the proposals for dividend payments throughout the year and concluded that, although the total dividend paid over 2018 was slightly higher than the profit available for distribution, and therefore required a withdrawal from the freely distributable reserves, such decision could be taken in reason, taking into account the stakeholders' interests. The Committee also oversaw the divestment of the final stake in Telefónica Deutschland, the closure of a EUR 300m credit facility from the EIB, the tender of a USD 1bn bond and the issuance of a new EUR 500m hybrid bond.

In a special meeting, the Committee reviewed the implementation of IFRS 16 accounting standard for leases that had a material impact on KPN's balance sheet and P&L accounts. For transparency purposes and internal steering, the Committee supported the introduction of a new alternative performance metric of adjusted EBITDA after leases (adjusted EBITDA AL).

The Audit Committee furthermore discussed other topics that were within its scope of attention, including compliance, fraud management, tax (including tax risk analysis) and cybersecurity. Specific attention was paid to safety matters, where an increasing number of incidents of aggression, most notably against our mechanics and shop employees, was noted. Although it concluded that KPN's practices were agreed overall, and the risk appetite for such incidents was low, it urged management to stay on top thereof.

Finally, the Audit Committee reviewed the performance evaluation of EY over 2019. It concluded, also based on inputs from management and the internal auditor, that EY had done a good job, had sufficient objectivity and independence, being both critical when necessary, and constructive when possible. It therefore recommended to the full Supervisory Board to nominate EY for appointment to the 2020 General Meeting of Shareholders as the company's independent external auditor for the financial year 2021.

Strategy and Organization Committee

The Strategy and Organization Committee functions as a standing sounding committee on strategic matters for the Board of Management. During 2019, its members had ad hoc contacts with the CEO or other members of the Board of Management on specific matters related to the strategy, including the follow-up on the network outage in June, the vendor strategy in light of the geopolitical debate, and divestments. No formal meetings were held, as the choice was made to have the more fundamental discussions on the strategy in the full Supervisory Board.

Remuneration Committee

The Remuneration Committee met on six occasions during 2019. The CEO attended parts of the Committee meetings. The Committee assisted the Supervisory Board in executing and reviewing KPN's remuneration policy and ensuring that members of the Board of Management are compensated consistently with that policy.

As part of its annually recurring tasks, the Committee defined the level of pay-out for individual members of the Board of Management as part of the STI plan 2018 and LTI grant 2016, and determined the financial and non-financial targets and performance criteria for the STI and LTI plans 2019 for the Board of Management.

In the first months of 2019, the Committee finalized its review of the remuneration policy by proposing a number of amendments thereto to the AGM. The main elements of the change include (i) an adjustment of the targets of the LTI plan, consisting of a reduction in the number of performance criteria, a rebalancing of the weight between the financial- and non-financial criteria, the introduction of strategic performance criteria and an extended holding period for vested shares; (ii) increased share ownership guidelines (including partial payment of the annual STI variable pay in shares until such guidelines have been met) and (iii) an updated employment market reference peer groups. Reference is made to the remuneration report, included on page 87 of this Integrated Annual Report 2019.

The Remuneration Committee was involved in determining the remuneration packages (in line with the company's remuneration policy) for both Ms. Leroy, Mr. Farwerck, Mr. Figee, and the four members of the Executive Committee that were appointed to the Board of Management per 1 December 2019.

During an annual evaluation meeting with the individual members of the Board of Management, the Committee took note of the views of their members on their own remuneration. The Committee also reviewed the remuneration of the members of the Executive Committee. Further details on the remuneration policy are provided in the 'Remuneration Report' starting on page 86.

Nomination and Corporate Governance Committee

The Nomination and Corporate Governance Committee met on eight occasions in 2019. The Committee steered the selection process for a new CEO upon the departure of Mr. Ibarra, including the intended appointment of Ms. Leroy, the subsequent withdrawal thereof, and the appointment of a new Board of Management, headed by Mr. Farwerck. Given the impact of this matter for the company, most meetings around this process were held with the full Board. Reference is made to the description of the process under 'Governance', above.

The Committee also steered the selection process for a new CFO, ultimately leading to the appointment of Mr. Figee on 1 February 2020, and was pleased this process could be dovetailed perfectly with the other changes to the Board of Management, as announced on 1 October. With Mr. Figee, the Committee believes to have found a strong and experienced CFO, that can lead KPN and its finance function into the next era.

With the new top structure, based on an enlarged Board of Management, and without the Executive Committee, it was also necessary to update the Board of Management By-Laws, as well as related provisions in other corporate documentation. The Nominating Committee oversaw this process and recommended the adoption thereof to the full Supervisory Board.

Given the upcoming end of the second term of appointment for Mr. van Bommel, the Committee also set out to search for a successor for him. Given the skills matrix of the Supervisory Board, and in light of the knowledge and experience that would be lost with the departure of Mr. van Bommel, the Committee set out to search for a candidate with a strong financial and audit profile. Given the overall profile of the Supervisory Board and the skills matrix, the candidate needed to have an international (business) background, ideally with experience in telecommunications or other network-related industries. Given the current composition, the candidate also preferably needed to be female, and have an international background. With support from a recruitment firm, a number of candidates was selected, and the Committee could finally recommend Ms. Catherine Guillouard, currently chairwomen and CEO of RATP to the Supervisory Board, which happily accepted this recommendation. Ms. Guillouard brings along a wealth of financial and managerial experience in both telecom (satellite) and other network-related industries (airlines, public transport).

The Committee is very pleased that, with the changes announced in 2019, both the Board of Management (two out of six) and the Supervisory Board (three out of eight) will have more than 30% female members. We continue to believe that a diverse composition of teams, whether they are formal Boards or management teams within the company, both in terms of gender and other characteristics, is beneficial to the company and its stakeholders in both short and longer term.

Financial Statements

The Financial Statements for the year ended 31 December 2019, were prepared by the Board of Management and approved by the Supervisory Board. The Report of the Independent Auditor, Ernst & Young Accountants LLP, is included in the 'Other Information' on pages 165 - 173. The Supervisory Board recommends that the AGM adopts these Financial Statements.

Final remarks

The Supervisory Board remains grateful to all stakeholders for their contribution to our company. We thank our customers for their trust. Our employees strive to improve our services to our customers every day. Our shareholders and bondholders enable us to reach our goals through their financial means. Together, we create The network of the Netherlands.

Duco W. Sickinghe, Chairman
Peter A.M. van Bommel
Carlos J. García Moreno Elizondo
Derk J. Haank
Peter F. Hartman
Edzard J.C. Overbeek
Jolande C.M. Sap
Claudia J.G. Zuiderwijk

Remuneration Board of Management

Remuneration Report

Introduction

The objective of the remuneration policy for the Board of Management is to attract, reward and retain necessary leadership talent, in order to support the execution of the company's strategic objectives. We aim for organic, sustainable growth. Our focus is on creating value over volume, and building an efficient and simple organization supported by our three strategic pillars:

1. Offering the best converged smart infrastructure
2. Focus on profitable growth segments
3. Acceleration of simplification and digitalization

We made good progress on the execution of our strategy and our financial results in 2019 were solid and continue to reflect a mix of an ongoing competitive environment and the impact of our strategic actions.

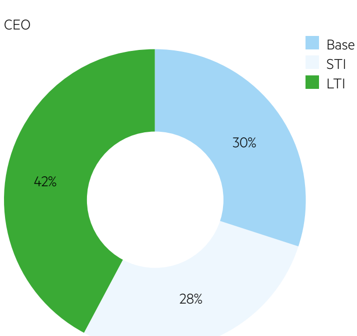
The integrated remuneration policy was subject to an internal review in 2018/2019 to ensure further alignment with the company's strategic direction. The proposed adjustments to the integrated remuneration policy (enhancing simplicity, long-term focus and share ownership) were approved by the AGM in April 2019. Annually, the Remuneration Committee prepares this remuneration report on the application of the remuneration policy and the individual remuneration of members of the Board of Management. This remuneration report was prepared as much as possible in line with the new requirements stemming from the implementation of the Shareholder Rights Directive in Dutch law, noting however that it refers to the Remuneration Policy 2019, which was not yet based on this new legislation. This report will be submitted to the General Meeting of Shareholders for an advisory vote.

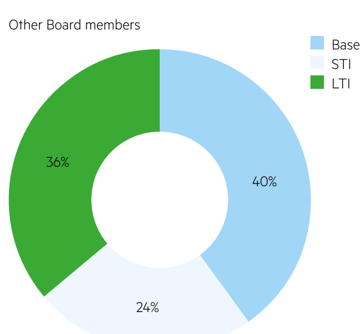
Remuneration policy Board of Management

The main principles of KPN's remuneration policy as described below are based on a balanced approach between market competitive standards, the ratio between fixed and variable pay and the economic and social contribution of the company linked to the non-financial parameters of the variable pay:

- Paying at market-competitive level (considering all fixed and variable components of the remuneration policy) achieved through benchmarking against an employment market peer group
- Pay-for-performance by driving financial and non-financial performance that generates long-term sustainable and profitable growth. Target remuneration aims at 30-40% of pay in base pay and 60-70% in variable pay in order to maintain a strong alignment with the company's financial performance goals and long-term value creation strategy
- Differentiating by experience and responsibility through alignment of the pay with the responsibilities, relevant experience, required competences and performance of individual jobholders
- Balancing all stakeholder interests, including the views of shareholders and society (a.o. dialogue with works council) by complying with best practices in corporate governance, defining targets for the variable pay plans based on financial and non-financial targets and a transparent and clear remuneration policy.

The following pie charts represent the fix/variable pay mix for both the CEO and other board members in the case of an on-target performance:





The following adjustments to the remuneration policy were proposed to and approved by the AGM in 2019:

1 A revised employment market peer group, comprising 50% AEX companies and 50% industry peers:

Akzo Nobel	Telecom Austria
DSM	Iliad
Randstad	Telia Company
Ahold Delhaize	Telecom Italia
Philips	Telenor
ASML	Proximus
Signify	Swisscom

2 Adjusted targets for the long-term incentive (LTI) plan:
- 70% based on financial targets, of which 45% on cumulative free cash flow over the plan period and 25% on relative Total Shareholder Return (TSR) measured against the STOXX Europe 600 Telecommunications index.
- 30% based on non-financial targets determined at the start of a new plan by the Supervisory Board from the following categories:
  - (I) Sustainability
  - (II) Reputation
  - (III) Social
  - (IV) Key business projects
  - (V) Market share

3 Increase in the share ownership guideline for the CEO from 200% to 250% of annual base salary, and for the other members of the Board of Management from 100% to 150% of annual base salary. To further stimulate reaching the anticipated share ownership levels, any payments under the short-term incentive (STI) plan, after deduction of taxes, are paid for a maximum of 50% in shares, if the share ownership guideline levels have not yet been reached.

4 Holding period for any shares received under the LTI plan adjusted from two to three years.

Main features of the short and long-term incentive plan

Short-term incentive (STI) plan 2019

Component	Short-term incentives
Form of compensation	Cash, possible pay-out for maximum 50% in shares, if share ownership guideline levels have not yet been reached
Value determination (on-target level)	CEO: 90% of base salary and other members Board of Management: 60% of base salary
Financial- and non-financial targets	Financial (70% weight) and Non-financial targets (30% weight), subject to the financial circuit-breaker; linear vesting
Scenario at or below threshold performance	At threshold: 25% of the on-target incentive paid. Below threshold no pay-out
Scenario on-target performance	100% of the on-target incentive paid
Scenario maximum performance	150% of the on-target incentive paid
Discretionary factor	A factor between 0.7, reducing the incentive by 30%, and 1.3, increasing the incentive by 30%

Long-term incentive (LTI) plan 2019

Component	Long-term incentives
Form of compensation	Shares
Value determination (on-target level)	CEO: 135% of base salary and other members of Board of Management: 90% of base salary
Financial- and non-financial targets	Financial (70% weight) and non-financial targets (30% weight); linear vesting
Scenario at or below threshold performance	At threshold: 25% of granted shares vest (TSR 75%, i.e. 50th percentile peer group). Below threshold: no vesting.
Scenario on-target performance	100% of the granted shares vest (for TSR linear between 50th percentile and first position peer group).
Scenario maximum performance	200% of the granted shares vest (for TSR first position in the peer group)
Holding period	3 years after vesting

Remuneration Board of Management

Composition Board of Management

The composition of the Board of Management changed importantly in 2019, with the appointments of Joost Farwerck as CEO and Chairman of the Board of Management per 1 October 2019, Jean-Pascal Van Overbeke as Chief Consumer Market (CCM), Marieke Snoep as Chief Business Market (CBM), Babak Fouladi as Chief Technology and Digital Officer (CTDO), Hilde Garssen as Chief People Officer (CPO), all per 1 December 2019, and Chris Figee as Chief Financial Officer (CFO) as of 1 February 2020. All appointments were made for a period of four years.

As Maximo Ibarra decided to resign from his position as CEO and Chairman of the Board of Management effective 30 September 2019, he was not entitled to any payment as part of the STI 2019 plan. In addition, all outstanding LTI grants forfeited as of 30 September 2019 and the agreed one-off retention fee was not due as the agreed terms and conditions were not fulfilled. He was also not entitled to a severance payment.

Jan Kees de Jager will resign from the Board of Management per 1 March 2020. As part of the arrangements made around his resignation, he is entitled to a severance payment in 2020 equal to one year's base salary, and will be treated as a good leaver under the outstanding STI and LTI plans.

Remuneration Board of Management in 2019

The actual remuneration of the members of the Board of Management has been determined by the Supervisory Board according to the remuneration policy as approved by the AGM.

Remuneration packages individual current members of the Board of Management:

Member	Position	Base salary	On-target STI (% annual base salary)	On-target LTI (% annual base salary)
Joost Farwerck	CEO	EUR 875,000	90%	135%
Jan Kees de Jager[1]	CFO	EUR 675,000	60%	90%
Jean-Pascal Van Overbeke	CCM	EUR 650,000	60%	90%
Marieke Snoep	CBM	EUR 650,000	60%	90%
Babak Fouladi	CTDO	EUR 650,000	60%	90%
Hilde Garssen	CPO	EUR 500,000	60%	90%

1) Chris Figee appointed as CFO effective as of 1 February 2020 based on the same remuneration package.

Details actual pay-out level STI 2019

			Bandwidth pay-out level			
Plan	Target	Weight	Minimum	On-target	Maximum	Actual performance
STI 2019	Financials (70% weighting):					
	- Adjusted EBITDA-AL	25%	25%	100%	150%	Between on-target and maximum level
	- Total Revenue	15%	25%	100%	150%	Slightly below on-target level
	- FCF (excl. TEFD dividend)	30%	25%	100%	150%	Maximum level
	Non-financials (30% weighting):					
	- NPS NL	15%	25%	100%	150%	Slightly above on-target level
	- Employee engagement	15%	25%	100%	150%	Below minimum threshold level
	Total pay-out level	100%				104% of on-target level[1-2]

1 With the exception of Mr. De Jager, it is assumed that other board members will obtain 50% of the STI pay-out in shares to further stimulate reaching the anticipated share ownership levels. The Supervisory Board did not deviate from the standard discretionary factor of 1.0.
2 Pay-out CLA population around 141% of on-target

The STI 2019 outcome in the overview above reflects the fact that we delivered on our financial guidance aspects for 2019, supported by a strong Consumer NPS performance and a continued solid progress on simplification and digitalization. We continued to execute disciplined cost control resulting in solid growth in adjusted EBITDA after leases. The employee engagement target for 2019 was related to the employee's views on the future of the company and their individual contribution to the strategy supported by further simplification of processes. Although the employees were overall more optimistic about the future of the company and their individual contribution, the threshold of the employee engagement target was not reached, predominantly the result of a continuing need for improvement on processes as part of a more simplified operating model.

Details actual pay-out (vesting) level LTI 2017: vesting period 2017-2019

Plan	Target	Weight	Bandwidth pay-out level: Minimum	Bandwidth pay-out level: On-target	Bandwidth pay-out level: Maximum	Outcome	Actual vesting %
LTI 2017	Financials (75% weighting):						
	TSR versus peer group	25%	75% 6th position peer group	100% 5th position peer group	200% 1st position peer group	75%	18.75%
	Free cash flow	25%	25%	100%	200%	28%	7.10%
	Earnings per share (EPS)	25%	25%	100%	200%	0%	0.0%
	Non-financials (25% weighting)						
	Reputation target	12.5%	25%	100%	200%	200%	25.0%
	Energy reduction target	12.5%	25%	100%	200%	103%	12.93%
	Vesting %	100% (on-target)					63.78% (total vesting)

The LTI plan 2017 vests in April 2020 and final TSR was measured mid-February 2020. The plan vested based on the TSR performance with a 6th position in the peer group, supported by KPN's progressive dividend policy. During the vesting period 2017-2019, KPN's results on free cash flow performed slightly above the ambitious threshold level of the bandwidth which contributed to a progressive regular dividend and deleveraging. Earnings per share (EPS) performed below the threshold and therefore did not contribute to the vesting of the LTI plan. EPS performance was, for example, partly impacted by additional finance expenses related to the repurchase of USD 405m senior bonds in 2019, a transaction that lowers KPN's interest expenses going forward, delivering significant value.

The energy reduction target was aligned with a reduction of KPN's energy consumption during the vesting period compared to the baseline in 2016. The energy reduction (compared to the baseline in 2016) during the vesting period was equal to -5.02% and resulted in a vesting slightly above the on-target level which was set at -4.9%. This was the result of additional energy savings in our networks, data centers and offices, despite an exponential increase in the volume of our IT services. The energy figures are based on external sources and validated by both our internal and external auditors.

The reputation target is set based on external data, which are measured and conducted by the Reputation Institute, the leading international organization devoted to advancing knowledge about corporate reputations. The external data are measured by the Reputation Institute through an online survey among a representative sample of the general public. The bandwidth of the reputation target is based on the 12-month moving averages of the data collected by the Reputation Institute prior to the vesting period. The reputation target for the LTI plan 2017 was measured based on three attributes, i.e. 'providing good value for money', 'being a profitable company' and 'being fair in the way it does business', stressing the belief that customer and societal satisfaction, whilst at the same time being financially solid, are vital for the company's license-to-operate. The composite performance of the three attributes was 71.4 and outperformed the maximum level of the bandwidth set at 70.0, indicating a significant growth and a steep improvement of KPN's reputation during the vesting period 2017-2019.

Targets LTI 2019, vesting period 2019-2021

For the LTI plan issued in 2019, the financial targets are based on relative TSR, 25% weight, and free cash flow, 45% weight and the non-financial targets have been determined based on circularity and reputation, each with a weight of 15%.

Circularity was selected as a non-financial target to reflect our long-term ambition on sustainability. We built a road-map to reach our ambition of having close-to-100% circular operations by 2025. This road-map is governed by the Energy & Environmental Board. The circularity target was aligned to a close to 100% performance on re-use and recycling (i.e. outflow of materials and waste) by 2025. The on-target ambition for 2021 on re-use and recycling was set at 82% versus a baseline of on or about 75% in 2018. The measurement and conduct of the sustainability KPI's has been included in Appendix 3.

Reputation was selected as a non-financial target to maintain continued focus on our role in Dutch society during the execution of the new strategy, that is, next to offering the best converged smart infrastructure and focus on profitable growth segments, also based on acceleration of simplification and digitalization. The 2 attributes "excellent managers" and "well-organized company" were selected as main drivers to measure the successful implementation and execution of the new strategy, while the attribute "positive influence on society" was selected for KPN's continuous commitment to Dutch society. The on-target ambition for the composite performance of the three new attributes was set at 67.2.

Remuneration Board of Management

Total remuneration of the Board of Management – individual remuneration received by current members of the Board of Management during the year shown by each pay component (in thousands of EUR).

See Note 5 for full disclosure of remuneration cost under IFRS principles (also including former members).

Name	Position	Year	Base	STI[1]	Actual vested LTI[1]	Pension cost and social security	Total[4]	% Fixed[5]	% Variable[5]
Joost Farwerck[2]	CEO	2019	688	497	382	162	1,729	44%	56%
	COO	2018	625	393	219	147	1384	51%	49%
Jan Kees de Jager	CFO	2019	675	421	386	134	1,616	46%	54%
	CFO	2018	668	382	238	131	1419	52%	48%
Jean-Pascal Van Overbeke[3]	CCM	2019	54	34	–	10	98	61%	39%
Marieke Snoep[3]	CBM	2019	54	34	–	9	97	61%	39%
Babak Fouladi[3]	CTDO	2019	54	34	–	9	97	61%	39%
Hilde Garssen[3]	CPO	2019	42	26	–	7	75	62%	38%

1 Final measurement of the 2017 share grant was conducted in February 2020, which leads to 63.78% vesting of the shares in April 2020. The amounts give an indication of the value of the shares that will vest based on the closing share price of KPN at 14 February 2020 (EUR 2.50). The STI 2019 is paid in 2020.
2 Actual total remuneration as COO and CEO.
3 Actual remuneration since appointment in the Board of Management with an effective date of 1 December 2019.
4 All remuneration was borne by KPN B.V, please see Note 5 to the Consolidated Financial Statements for the individual pension benefits.
5 Excluding pension cost and social security.

Change in remuneration for members of the Board of Management versus company performance over five years and remuneration of average employee.

The tables includes the current members of the Board of Management and a comparison is disclosed over the last five years as far as a 'like for like' comparison was possible (i.e. full year appointment during the five years period).

	2015	2016	2017	2018	2019
Remuneration Joost Farwerck (Appointed April 2013)	1,260,000	1,418,000	1,904,000	1,384,000	1,733,000
-Year-on-year difference (EUR)	+391,000	+158,000	+486,000	-520,000	+349,000
-Year-on-year difference (%)	+45%	+ 13%	+34%	-27%	+25%
Remuneration Jan Kees de Jager (Appointed September 2014)	1,270,000	1,490,000	2,022,000	1,419,000	1,632,000
-Year on year difference (EUR)	Not comparable	+220,000	+532,000	-603,000	+213,000
-Year on year difference (%)	Not comparable	+17%	+36%	-30%	+15%
TSR position (part of LTI) - Position peer group	8th (no vesting)	6th (75% vesting)	3rd (150% vesting)	8th (no vesting)	6th (75% vesting)
Free cash flow (part of STI/LTI)	Performance:	Performance:	Performance:	Performance:	Performance:
- STI bandwidth pay-out level	Maximum	Close to target	Maximum	Around maximum	Maximum
- LTI bandwidth pay-out level	Not applicable	Below threshold	Between on-target and maximum	Below threshold	Slightly above threshold
EBITDA (part of STI)	Performance:	Performance:	Performance:	Performance:	Performance:
- Pay-out level STI bandwidth	Around maximum	Between threshold and on-target	Between threshold and on-target	Around on-target	Between on-target and maximum
Average cost per FTE (IFRS)	70,658	79,924	82,967	85,355	88,445
Pay ratio CEO (IFRS)	42	33	36	29	30

The main drivers for the fluctuation in actual pay levels during the five reference years is predominantly the result of the outcome of the STI and LTI combined with the relative high emphasis on pay for performance reflected in the short and long-term incentives. The STI pay-out (in terms of performance versus the assigned targets) was aligned with the level of pay-out to senior management and the CLA employees as the same financial and non-financial targets were applied in these variable pay plans when compared to the assigned targets of the Board of Management. The average STI pay-out over the five-year period is close to 95% of the on-target level and the LTI plans vested over the five-year period on average close to 70% of the on-target level reflecting the ambitious targets set for variable incentive plans.

Considering the five years outcome, variable pay on financial and non-financial targets is strongly linked with KPN's performance against peers (TSR) and its outcomes on key metrics FCF and EBITDA ensuring alignment with financial performance goals and long-term value creation strategy. Lower revenues were offset by ongoing savings from simplification and digitalization of services. KPN generates FCF which supports a progressive regular dividend and deleveraging and remains committed to an investment grade credit profile.

KPN's internal pay ratio

To ensure transparency and clarity, KPN applies a methodology to calculate the internal pay ratio that is IFRS-driven. KPN's internal pay ratio is calculated as the total CEO compensation under IFRS principles divided by the average employee compensation (total personnel expenses of KPN employees divided by the average number of KPN FTEs).

In the 5-years table the pay ratio for the years 2015-2017 relates to Eelco Blok and for the year 2018 to Maximo Ibarra. When calculating the pay ratio for 2019, the CEO compensation for 2019 was based on the total remuneration of Joost Farwerck in his position as COO and CEO during the calendar year. Consequently, KPN's calculated pay ratio in 2019 is 22 (2018: 29). The pay ratio in 2019 was 30 if Joost Farwerck had been CEO for the full 12 months of 2019. This outcome is in line with KPN's acceptable bandwidths.

For further details, see Note 5 to the Consolidated Financial Statements.

Remuneration Board of Management

The table below presents the number of shares and current share plans for the current Board members.

	Grant date	Granted as of 1 January 2019	Vested	Granted or forfeited in 2019[1,2]	As of 31 December 2019	Pre-tax fair value on grant date (EUR)[3]	Pre-tax market value on vesting date or end of lock-up in 2019 (EUR)	End of lock-up period
Joost Farwerck	11 April 2019	–	–	302,514	302,514	874,265	–	11 April 2025
	19 April 2018	227,733	–	-	227,733	498,735	–	19 April 2023
	13 April 2017	202,396	–	–	202,396	542,421	–	13 April 2022
	14 April 2016[4]	162,938	-72,068	-90,870	-	473,674	218,693	14 April 2021
Jan Kees de Jager	11 April 2019	–	–	210,784	210,784	609,166	–	11 April 2025
	19 April 2018	245,951	–	–	245,951	538,633	–	19 April 2023
	13 April 2017	210,492	–	–	210,492	564,119	–	13 April 2022
	14 April 2016[4]	177,106	-85,419	-91,687	-	514,862	237,656	14 April 2021
Jean-Pascal Van Overbeke	11 April 2019	–	–	196,732	196,732	568,555		11 April 2024
	19 April 2018	114,777	–	–	114,777	251,362	–	19 April 2023
Marieke Snoep	11 April 2019	–	–	156,136	156,136	451,233	–	11 April 2024
Babak Fouladi	11 April 2019	–	–	196,732	196,732	568,555	–	11 April 2024
Hilde Garssen	11 April 2019	–	–	62,454	62,454	180,492	–	11 April 2024

1 The shares granted to the Board of Management represent 34% (2018: 25%) of the total number of shares and share-based awards granted in 2019 to all employees. The 2019 grant numbers do not include any deferred dividend during the vesting period.
2 The deferred dividend during the vesting period will be additionally granted in shares.
3 Value is calculated by multiplying the number of share awards by the fair value at grant date.
4 Final TSR measurement for the 2016 share grant was conducted in February 2019, which resulted in 42.5% vesting in April 2019.

See page 78 for stock ownership of members of the Board of Management and Supervisory Board and see Note 5 to the Consolidated Financial Statements for a further description and valuation of the share plans.

Claw-back clause

The claw-back clause was not applied in 2019.

Developments for 2020

The integral remuneration policy for 2020 onwards has been written in accordance with the new requirements stemming from the implementation of the Shareholder Rights Directive in Dutch law per 1 December 2019 and will be submitted for approval by the AGM in April 2020 in line with the implementation of the Shareholders Rights Directive in Dutch law per 1 December 2019.

The Supervisory Board proposes to remove the discretionary factor as part of the Short Term Incentive (i.e. STI) plan design.

The reason for the proposed forfeiture of the STI discretionary factor lies in the fact that the use of such a factor is no longer perceived to be in line with common market practice and evolving insights of good corporate governance practices. This conclusion is also supported by the collected input and views from the stakeholder engagement process.

No other adjustments to the current remuneration policy of the Board of Management are proposed in 2020, also considering the recent adjustments proposed to and approved by the AGM in April 2019.

Remuneration Supervisory Board

The objective of the remuneration policy for the Supervisory Board is to reward the members appropriately for their work based on market-competitive fee levels. Members are appointed for a four-year term. To the extent applicable, the same principles of the Board of Management remuneration policy apply to the Supervisory Board remuneration policy.

KPN has a fixed annual fee and annual committee membership fees for the members of the Supervisory Board. Members receive an additional fee of EUR 1,500 per meeting.
if a meeting is held in a country other than the member's country of residence.

AEX-listed companies with a two-tier board serve as a reference to determine market-competitive fee levels. Supervisory Board members do not receive any variable compensation and are not granted any shares as a form of pay.

As a policy, the company does not provide loans or guarantees to its Supervisory Board members.

The table below shows the annual fixed fee structure for the members of the Supervisory Board and the members of the committees, which did not change in the last 5 years.

Position	Annual fee in EUR
Chairman Supervisory Board	100,000
Vice-chairman Supervisory Board	70,000
Member Supervisory Board	60,000
Chairman Audit Committee	20,000
Member Audit Committee	10,000
Chairman Strategy & Organization Committee	12,500
Member Strategy & Organization Committee	7,500
Chairman Remuneration Committee	10,000
Member Remuneration Committee	5,000
Chairman Nominating & Corporate Governance Committee	10,000
Member Nominating & Corporate Governance Committee	5,000

Remuneration Supervisory Board

Supervisory Board

The table below shows the actual fee each current member of the Supervisory Board received in 2015-2019.

Amounts in €	Membership fee 2019	Committee and international meeting fee 2019	Total 2019	Total 2018[1]	Total 2017[1]	Total 2016[1]	Total 2015[1]
D.W. Sickinghe Chairman	100,000	15,000	115,000	116,875	122,500	123,929	112,916
D.J. Haank Vice-chairman	70,000	17,500	87,500	86,250	82,500	84,643	100,417
P.A.M. van Bommel Member	60,000	20,000	80,000	80,000	80,000	77,143	70,000
C.J. García Moreno Elizondo Member	60,000	13,000	73,000	73,000	73,000	73,000	73,000
C.J.G. Zuiderwijk Member	60,000	10,000	70,000	71,875	77,500	77,500	75,313
P.F. Hartman Member	60,000	15,000	75,000	76,875	82,500	80,357	53,125
J.C.M. Sap Member	60,000	10,000	70,000	70,000	70,000	70,000	49,583
E. Overbeek Member	60,000	12,500	72,500	71,250	16,875	–	–
Total	**530,000**	**113,000**	**643,000**	**646,125**	**604,875**	**586,572**	**534,354**

1 Restated for international meeting fees

Developments for 2020

The eligibility for committee fees will be limited to two committees. If a member of the Supervisory Board is a member of more than two committees, such member will be entitled to two membership fees of the committees attended. The international meeting fee of EUR 1,500 will no longer be applicable for new appointments or re-appointments to the Supervisory Board.

The integral remuneration policy for the Supervisory Board will be submitted for approval by the AGM in April 2020 in line with the implementation of the Shareholders Rights Directive in Dutch law per 1 December 2019.

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Consolidated Statement of Profit or Loss

For the year ended 31 December

€ million	Notes	2019	2018 (Restated)
Revenues	[4.1]	5,499	5,633
Other income	[4.2, 21]	202	6
Total revenues and other income		**5,702**	**5,639**
Cost of goods & services		1,301	1,332
Personnel expenses	[5]	1,027	1,103
Information technology/Technical infrastructure		353	412
Other operating expenses	[6]	443	439
Depreciation, amortization and impairments	[10/11, 19]	1,537	1,533
Total operating expenses		**4,661**	**4,819**
Operating profit		**1,041**	**820**
Finance income		24	55
Finance costs		-307	-348
Other financial results		-90	-3
Financial income and expenses	**[7, 19]**	**-372**	**-296**
Share of the profit/loss (-) of associates		-6	-9
Profit before income tax from continuing operations		**663**	**515**
Income taxes	[8]	-49	-224
Profit for the year from continuing operations		**614**	**292**
Profit/loss (-) for the year from discontinued operations	[15]	12	-10
Profit for the year		**626**	**282**
Profit attributable to non-controlling interests		–	–
Profit attributable to equity holders of the company		626	281

Earnings per ordinary share after taxes attributable to equity holders of the company for the year in EUR	**[9]**		
> Basic (continuing operations)		0.15	0.06
> Diluted (continuing operations)		0.15	0.06
> Basic (discontinued operations)		–	–
> Diluted (discontinued operations)		–	–
> Basic (total, including discontinued operations)		0.15	0.06
> Diluted (total, including discontinued operations)		0.15	0.06

Consolidated Statement of Other Comprehensive Income

For the year ended 31 December

€ million	Notes	2019	2018 (Restated)
Profit for the year		**626**	**282**
Other comprehensive income, net of tax			
Other comprehensive income to be reclassified subsequently to profit or loss when specific conditions are met:			
Net gain/loss (-) on cash flow hedges	[16]	115	-20
Currency translation differences[1]	[16]	-21	4
Net other comprehensive income/loss (-) to be reclassified to profit or loss in subsequent periods		**94**	**-16**
Items of other comprehensive income not to be reclassified subsequently to profit or loss:			
Retirement benefits remeasurements		8	-1
Net gain/loss (-) on equity instruments designated at fair value through other comprehensive income	[12]	-84	-116
Net other comprehensive income/loss (-) not to be reclassified to profit or loss in subsequent periods		**-76**	**-117**
Other comprehensive income/loss (-) for the year, net of tax		**18**	**-133**
Total comprehensive income for the year, net of tax		**644**	**149**
Total comprehensive income for the year, net of tax, attributable to:			
Equity holders of the company		644	149
Non-controlling interests		–	–
		644	**149**
Total comprehensive income/loss (-) attributable to equity holders of the company arises from:			
Continuing operations		644	159
Discontinued operations[1]		–	-10

1 In 2019, EUR 11m of cumulative currency translation gains were recycled to the profit or loss and included in the book result on the sale of iBasis, resulting in a total comprehensive income from discontinued operations of nil.

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Consolidated Statement of Financial Position

Assets

€ million	Notes	31 December 2019	31 December 2018 (Restated)	1 January 2018 (Restated)
Non-current assets				
Property, plant and equipment	[10]	5,432	5,595	5,755
Intangible assets	[11]	2,995	3,169	3,341
Right-of-use assets	[19]	847	878	971
Equity investments accounted for using the equity method		3	17	21
Equity investments measured at fair value through other comprehensive income	[12.1]	32	26	20
Derivative financial instruments	[12.3]	236	185	168
Deferred income tax assets	[8]	662	720	927
Trade and other receivables	[13.1]	111	197	138
Contract assets and contract costs	[13.2]	32	33	35
		10,350	**10,820**	**11,377**
Current assets				
Inventories		54	58	54
Trade and other receivables	[13.1]	756	780	717
Contract assets and contract costs	[13.2]	37	106	287
Income tax receivables	[8]	–	–	1
Equity investments measured at fair value through other comprehensive income	[12.1]	–	449	1,071
Derivative financial instruments	[12.3]	22	–	–
Other current financial assets	[12.1]	275	50	329
Cash and cash equivalents	[14]	766	594	856
		1,909	**2,036**	**3,314**
Assets and disposal groups classified as held for sale	**[15]**	**44**	**148**	**1**
Total assets		**12,304**	**13,005**	**14,692**

Equity and liabilities

€ million	Notes	31 December 2019	31 December 2018 (Restated)	1 January 2018 (Restated)
Equity				
Share capital		168	168	168
Share premium		8,445	8,445	8,445
Other reserves		-300	-398	-402
Retained earnings		-6,302	-6,338	-5,885
Equity attributable to holders of perpetual capital securities		496	–	1,089
Equity attributable to equity holders of the company		**2,507**	**1,877**	**3,415**
Non-controlling interests		1	–	–
Total equity	**[16]**	**2,507**	**1,878**	**3,415**
Non-current liabilities				
Borrowings	[12.2]	5,722	6,939	7,523
Lease liabilities	[19]	785	827	930
Derivative financial instruments	[12.3]	136	302	328
Deferred income tax liabilities	[8]	–	–	1
Provisions for retirement benefit obligations	[17]	188	206	218
Provisions for other liabilities and charges	[18]	105	110	93
Contract liabilities	[20]	184	206	155
Other payables	[20]	12	5	9
		7,132	**8,596**	**9,257**
Current liabilities				
Trade and other payables	[20]	1,256	1,357	1,517
Contract liabilities	[20]	228	253	270
Borrowings	[12.2]	937	580	8
Lease liabilities	[19]	145	149	142
Derivative financial instruments	[12.3]	4	16	–
Income tax payables	[8]	–	–	16
Provisions for other liabilities and charges	[18]	63	78	66
		2,634	**2,434**	**2,020**
Liabilities directly associated with the assets and disposal groups classified as held for sale	**[15]**	**30**	**98**	**–**
Total equity and liabilities		**12,304**	**13,005**	**14,692**

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Consolidated Statement of Changes in Equity

€ million, except number of shares	Notes	Subscribed ordinary shares	Share capital	Share premium	Other reserves	Retained earnings	Equity attributable to holders of perpetual capital securities	Equity attributable to equity holders of the company	Non-controlling interests	Total equity
Balance at 1 January 2018		**4,202,844,404**	**168**	**8,445**	**-402**	**-5,818**	**1,089**	**3,482**	**–**	**3,482**
Transition impact IFRS 16	[2]		–	–	–	-67	–	-67	–	-67
Balance at 1 January 2018 Restated		**4,202,844,404**	**168**	**8,445**	**-402**	**-5,885**	**1,089**	**3,415**	**–**	**3,415**
Profit for the year			–	–	–	281	–	281	–	282
Other comprehensive income for the year			–	–	-16	-117	–	-133	–	-133
Total comprehensive income for the year			**–**	**–**	**-16**	**165**	**–**	**149**	**–**	**149**
Share-based compensation	[5]		–	–	–	-15	–	-15	–	-15
Sold treasury shares			–	–	20	–	–	20	–	20
Repayment of EUR hybrid bond (including paid coupon)[1]			–	–	–	-73	-1,089	-1,162	–	-1,162
Dividends paid			–	–	–	-529	–	-529	–	-529
Total transactions with owners, recognized directly in equity			**–**	**–**	**20**	**-618**	**-1,089**	**-1,687**	**–**	**-1,687**
Balance at 31 December 2018 Restated		**4,202,844,404**	**168**	**8,445**	**-398**	**-6,338**	**–**	**1,877**	**–**	**1,878**
Profit for the year			–	–	–	626	–	626	–	626
Other comprehensive income for the year			–	–	94	-76	–	18	–	18
Total comprehensive income for the year			**–**	**–**	**94**	**550**	**–**	**644**	**–**	**644**
Share-based compensation	[5]		–	–	–	-2	–	-2	–	-2
Sold treasury shares			–	–	4	–	–	4	–	4
Issuance of EUR hybrid bond	[12.2]		–	–	–	–	496	496	–	496
Dividends paid			–	–	–	-512	–	-512	–	-512
Other			–	–	–	–	–	–	1	1
Total transactions with owners, recognized directly in equity			**–**	**–**	**4**	**-514**	**496**	**-14**	**1**	**-14**
Balance at 31 December 2019		**4,202,844,404**	**168**	**8,445**	**-300**	**-6,302**	**496**	**2,507**	**1**	**2,507**

1 As of 1 January 2019, IAS 12 Income Taxes has been amended and as a result, the income tax gain on the EUR hybrid bond dividends of EUR 12m has been recognized in the Statement of Profit or Loss. See page 161 for more information.

Consolidated Statement of Cash Flows

For the year ended 31 December

€ million	Notes	2019	2018 (Restated)
Profit before income tax from continuing operations		663	515
Adjustments for:			
– Net financial expense	[7]	372	296
– Share-based compensation	[5]	2	-3
– Share of the profit/loss (-) of associates		6	9
– Depreciation, amortization and impairments	[10/11, 19]	1,537	1,533
– Other non-cash income and expense		-202	-5
– Changes in provisions (excluding deferred taxes)		-51	56
Changes in working capital relating to:			
– Current assets		61	54
– Current liabilities		-70	-62
Dividends received	[12.1]	24	54
Income taxes paid/received		-7	-9
Interest paid		-329	-339
Net cash flow from operating activities from continuing operations		**2,005**	**2,099**
Net cash flow from operating activities from discontinued operations		**1**	**9**
Net cash flow from operating activities		**2,006**	**2,108**
Disposal of equity investments measured at fair value through other comprehensive income	[12.1]	347	464
Acquisition of subsidiaries and associates (net of acquired cash)		-3	-17
Disposal of subsidiaries and associates (net of cash)	[21]	258	1
Investments in software		-255	-289
Investments in other intangible assets		–	-1
Investments in property, plant and equipment		-859	-817
Disposals of property, plant and equipment		4	5
Changes in other current financial assets	[12.1]	-233	274
Net cash flow from investing activities from continuing operations		**-742**	**-379**
Net cash flow from investing activities from discontinued operations	**[21]**	**35**	**-7**
Net cash flow from investing activities		**-707**	**-387**
Dividends paid		-512	-529
Paid coupon perpetual hybrid bonds		–	-67
Issuance and repayment of perpetual hybrid bonds		495	-1,100
Repayments of borrowings and settlement of derivatives	[12]	-982	-116
Repayments of lease liabilities	[19]	-141	-149
Other		-5	–
Net cash flow from financing activities from continuing operations		**-1,145**	**-1,962**
Net cash flow from financing activities from discontinued operations		**–**	**–**
Net cash flow from financing activities		**-1,145**	**-1,962**
Total net cash flow from continuing operations		**118**	**-242**
Total net cash flow from discontinued operations		**37**	**2**
Changes in cash and cash equivalents		**154**	**-240**
Net cash and cash equivalents at 1 January		612	852
Net cash and cash equivalents at 31 December		**767**	**612**
Bank overdrafts		**–**	5
Cash classified as held for sale		-1	-24
Cash and cash equivalents	**[14]**	**766**	**594**

● Consolidated Financial Statements

General notes to the Consolidated Financial Statements

[1] General information

Koninklijke KPN N.V. (KPN or the company) was incorporated in 1989 and is domiciled in the Netherlands. KPN is registered at the Chamber of Commerce (file no. 02045200). The address of KPN's registered office is Wilhelminakade 123, 3072 AP, Rotterdam. KPN's shares are listed on Euronext Amsterdam.

KPN is a leading telecommunications and IT provider in the Netherlands, offering fixed and mobile telephony, fixed and mobile broadband internet and TV to retail consumers. KPN is market leader in the Netherlands in infrastructure and network related IT solutions to business customers. KPN also provides wholesale network services to third parties.

The Financial Statements were authorized for issue by both the Supervisory Board and the Board of Management on 21 February 2020 and are subject to adoption by the Annual General Meeting of Shareholders on 15 April 2020.

[2] Summary of significant accounting policies

Basis of preparation
The Consolidated Financial Statements of KPN have been prepared in accordance with International Financial Reporting Standards as adopted by the European Union (IFRS) and with the statutory provisions of Part 9, Book 2 of the Dutch Civil Code, under the historical cost convention, except for certain equity investments accounted for using the equity method, and certain equity investments and derivative financial instruments measured at fair value, and on a going concern basis.

Comparative financial information for 2018 has been restated to reflect the implementation of IFRS 16 and other adjustments.

All amounts are presented in millions unless stated otherwise. Certain figures may not tally exactly due to rounding.
In addition, certain percentages may have been calculated using rounded figures.

Summary of significant accounting policies
The general accounting policies as applied are described below. Significant accounting policies are described in the Notes to the Consolidated Financial Statements.

Changes in accounting policies and disclosures
KPN applies new standards and amendments issued by the International Accounting Standards Board (IASB), when effective and endorsed by the European Union. KPN has not early adopted any standards. Only changes with a significant impact are discussed.

As of 1 January 2019, only the implementation of IFRS 16 Leases had a significant impact.

KPN has concluded that IFRIC 23 'Uncertainty over Income Tax Treatments' did not affect KPN's tax position.

IFRS 16
This standard introduces on balance sheet accounting for almost all leases. For lessees, the distinction between financial leases ('on balance') and operating leases ('off balance') is removed. For lessors, the accounting requirements remain substantially unchanged and the two types of leases remain in place. IFRS 16 had a significant impact on KPN as a lessee.

KPN has adopted the standard using the full retrospective approach and restated the 2018 financial information for comparison purposes in these 2019 Consolidated Financial Statements. A cumulative transitional adjustment was recorded on 1 January 2018, the date of initial application of IFRS 16.

Application of practical expedients
As of the transition date, KPN applies IFRS 16 only to leases which were previously identified as leases under IAS 17 and IFRIC 4 in accordance with the practical expedient allowed under IFRS 16.

KPN does not apply the practical expedients for low value leases (leases of an underlying asset with a value of less than EUR 5,000) and short-term leases (leases with a total expected term of less than 12 months) except for short-term rental vehicles. Regarding vehicle leases, KPN applies the practical expedient not to separate non-lease components from lease components. Therefore, the full monthly lease fees are reflected in KPN's Statement of Financial Position. For all types of leased assets, electricity and fuel related expenses remain part of operating expenses.

IFRS 16 impact on the Consolidated Statement of Profit or Loss

€ million	Note	2018 Published	IFRS 16	Other adjustments	2018 Restated
Total revenue and other income		**5,639**	**–**	**–**	**5,639**
Cost of goods & services	[d]	1,302	–	30	1,332
Personnel expenses	[a]	1,141	-38	–	1,103
Information technology/Technical infrastructure	[d]	442	–	-30	412
Other operation expenses	[a]	569	-130	–	439
Depreciation, amortization and impairments	[c]	1,397	136	–	1,533
o/w Depreciation right-of-use assets	[a]	–	146	–	146
Total operating expenses		**4,850**	**-31**	**–**	**4,819**
Operating profit		**789**	**31**	**–**	**820**
Finance income and expenses	[c]	-267	-29	–	-296
o/w Interest lease liabilities	[a]	–	-33	–	-33
Share of the profit of associates		-9	–	–	-9
Profit/Loss (-) before income tax from continuing operations	[b]	**513**	**2**	**–**	**515**
Income taxes	[d]	-233	-3	12	-224
Profit/Loss (-) for the period from continuing operations		**280**	**-1**	**12**	**292**
Profit/Loss (-) for the period from discontinued operations		-10	**–**	**–**	-10
Profit/Loss (-) for the period		**271**	**-1**	**12**	**282**

The impact of the IFRS 16 adjustments on the Consolidated Statement of Profit or Loss mainly consists of:

[a] Lease expenses (fixed fees only) previously reported under operating expenses have been replaced by depreciation of the right-of-use assets and interest expense on the lease liabilities. Variable lease fees and lease related expenses remain part of operating expenses. The operating expenses removed from personnel expenses mainly relate to vehicles. The amounts removed from other operating expenses relate to the underlying assets of the networks (mobile and fixed) and real estate (shops and office buildings).

[b] The sum of the depreciation expenses of the right-of-use assets and the interest expenses on the lease liabilities does not equal the operating expenses removed as the interest expenses on the lease liabilities do not follow a linear pattern.

[c] The total impact on depreciation expenses does not equal the amount recognized as depreciation of the right-of-use assets due to the removal of depreciation expenses previously recognized for financial leases. A similar effect occurred in the finance expenses. As KPN applies IFRS 16 using the full retrospective approach, the carrying values for these contracts have been restated accordingly.

[d] The other adjustments on the Consolidated Statement of Profit or Loss relate to a reclassification of expenses from IT/TI to cost of goods & services (EUR 30m) and an adjustment to KPN's tax expenses following an amendment to IAS 12 (EUR 12m additional tax benefit). The 2018 tax expenses were restated to record the income tax consequences of (hybrid) dividends in line with the past transactions or events that generated distributable profits.

The restatements did not change reported earnings per share.

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IFRS 16 impact on the Consolidated Statement of Financial Position

€ million	Note	31 December 2018 Published	IFRS 16	31 December 2018 Restated	1 January 2018 Published	IFRS 16	1 January 2018 Restated
Assets							
Non-current assets							
Property, plant and equipment	[b]	5,641	-46	5,595	5,811	-56	5,755
o/w Financial lease assets (IAS 17)	[b]	46	-46	–	56	-56	–
Right-of-use assets (IFRS 16)	[a]	–	878	878	–	971	971
Deferred income tax assets	[e]	702	18	720	907	20	927
Current assets							
Trade and other receivables	[d]	802	-22	780	735	-19	717
Total assets		**12,177**	**828**	**13,005**	**13,776**	**916**	**14,692**
Total equity	[e]	**1,945**	**-68**	**1,878**	**3,482**	**-67**	**3,415**
Non-current liabilities							
Borrowings	[b]	6,986	-47	6,939	7,579	-56	7,523
o/w Financial lease liabilities (IAS 17)	[b]	47	-47	–	56	-56	-
Lease liabilities (IFRS 16)	[a]	–	827	827	–	930	930
Provisions	[c]	119	-9	110	103	-10	93
Other payables	[d]	17	-12	5	22	-13	9
Current liabilities							
Trade and other payables	[d]	1,361	-4	1,357	1,517	–	1,517
Borrowings	[b]	589	-9	580	18	-10	8
o/w Financial lease liabilities (IAS 17)	[b]	9	-9	–	10	-10	–
Lease liabilities (IFRS 16)	[a]	–	149	149	–	142	142
Total equity and liabilities		**12,177**	**828**	**13,005**	**13,776**	**916**	**14,692**

Only affected accounts are presented and discussed.

The impact of the IFRS 16 adjustments on the Statement of Financial Position mainly consists of:

[a] Recognition of the right-of-use assets and lease liabilities, split into a non-current and a current portion.

[b] Reversal of the (IAS 17-based) carrying values of KPN's financial lease assets and financial lease liabilities as these contracts have been recalculated under application of IFRS 16 and absorbed in the total carrying values of the right-of-use assets and lease liabilities.

[c] The (restructuring) provision related to the onerous building leases is replaced by an impairment of the right-of-use asset for the related lease contracts.

[d] Reversal of deferred lease incentives, as under IFRS 16 these are deducted from the carrying value of the right-of-use assets or integrated in the measurement of the lease liabilities, depending on the nature of the incentive.

[e] The net impact on equity of the items described above is partly offset by a deferred tax asset.

IFRS 16 impact on the Consolidated Statement of Cash Flows

€ million	2018 Published	IFRS 16 Adjustment	2018 Restated
Net cash flows from operating activities from continuing operations	1,959	140	2,099
Net cash flow from financing activities from continuing operations	-1,822	-140	-1,962

The impact of the IFRS 16 adjustments on the Consolidated Statement of Cash Flows is limited to a reclassification only. The cash flow related to the repayments of the lease liabilities is transferred from the cash flow from operating activities to the cash flow used in financing activities. The interest paid on the lease liabilities remained part of cash flow from operating activities. The total net cash flow for 2018 is not affected.

Composition of KPN's lease portfolio

KPN's lease portfolio mainly consists of mobile network elements (site rentals, mobile towers), fixed network components (data centers, technical buildings), real estate (shops, office buildings) and vehicles.

The table below shows the difference between KPN's total lease commitments reported under IAS 17 compared to the carrying value of the lease liabilities under IFRS 16:

€ million	31 December 2018	1 January 2018
Lease commitments reported under IAS 17		
Operating leases (off balance sheet obligations)	714	775
Financial lease liabilities	56	66
Total IAS 17 lease commitments	**770**	**841**
Total IFRS 16 lease liabilities	**976**	**1,072**

The previously reported off balance sheet obligations were determined based on the nominal contract values of KPN's operating leases, not taking into account any renewal options unless they have been exercised. IFRS 16 requires the lease liabilities to be recognized at discounted value and, among other factors, requires that the likelihood of early terminations or use of renewal options is taken into account. The total lease liabilities recognized under IFRS 16 exceeds the total lease commitments reported under IAS 17 due to a mix of renewal options deemed reasonably certain, early termination options which are reasonably certain not to be exercised and fixed indexation taken into account under IFRS 16.

The 'on balance' recognition of KPN's lease liabilities did not have an impact on KPN's financing arrangements as these do not contain any financial covenants.

Summary of new (IFRS 16) accounting principles

Below a summary of KPN's main accounting principles related to IFRS 16.

Lease liabilities

At the commencement date of a lease (i.e. the date on which the underlying asset of the lease is available for use by KPN), KPN recognizes a lease liability measured at the present value of future lease payments to be made over the term of the lease. These future lease payments include fixed fees (including in-substance fixed payments) taking into account any lease incentives (such as rent-free periods or fee discounts), variable lease payments that depend on an index or a rate, and amounts expected to be paid under residual value guarantees. KPN does not have purchase options to be taken into account. Penalties for early termination of a lease are not included when KPN is reasonably certain that the related early termination will not take place.
All contracts of KPN that contain variable lease payments depend on a consumer price index or a rate. However, should other types of fees occur, these variable fees will be accounted for in the operating expenses.

After the commencement date, the lease liabilities increase due to the accrual of interest and decrease due to the payments of the fees due. The lease liabilities are remeasured when a change occurs in the fees due, the lease term deemed reasonably certain and/or changes to the scope of a lease. Upon remeasurement of the lease liability of a contract, the applied discount rate (incremental borrowing rate) is revised unless the remeasurement relates to a fee change following a change in consumer price index or rate.

The total lease liability recognized is split into a non-current and a current portion. The current lease liabilities reflect only the part of the payments due within one year related to the repayment of the total lease liabilities.

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Lease term

KPN determined the lease term as the non-cancellable term of a contract together with any periods covered by an option to extend the lease if it is reasonable certain to be exercised, or any periods covered by an option to terminate the lease if it is reasonably certain not to be exercised.

Most of KPN's lease contracts have extension options with a wide range of renewal terms.
KPN applies judgement when assessing if the use of an option is reasonably certain. Factors included are KPN's asset and network strategy, technological development and other circumstances that may impose an economic incentive affecting the expected use of an underlying asset.

For vehicles, renewal options are not included in the initial assessment of the lease term as KPN's policy prescribes the return of vehicles to the lessor at the end of the lease term.
After the commencement of a lease, KPN reassesses the lease term if there is a significant event or change in circumstances that is within KPN's control and effects KPN's ability to exercise or not to exercise the option to renew or to terminate a lease.

Incremental borrowing rate

As the implicit discount rates of KPN's leases were not readily available, with the exception for vehicles, KPN applies the incremental borrowing rate applicable at commencement date of a lease to determine the discounted value of the lease liabilities. Upon modification of a lease, the remeasurement of the lease liability is performed using the applicable discount rate at the date of the remeasurement. KPN's incremental borrowing rates are mainly determined using a risk-free rate combined with a spread reflecting KPN's credit risk. The applicable rate per contract is primarily dependent on the total expected term of a lease at its commencement date (new leases), or the total expected remaining lease term in case of a remeasurement of a lease.

Right-of-use assets

The right-of-use assets are recognized at commencement date of a lease as counterpart to the lease liabilities. The right-of-use assets are measured at cost, less accumulated depreciation and impairment losses and adjusted for any remeasurement in the corresponding lease liabilities. The cost of the right-of-use assets includes the initially recognized amount of the corresponding lease liabilities, initial direct costs incurred in obtaining the lease (if any) and lease payments made at or before commencement of the lease. Lease incentives received are deducted from the carrying value of the right-of-use assets. The right-of-use assets are depreciated on a straight-line basis over the shorter of the estimated useful life of the underlying asset and the lease term.

Right-of-use assets are subject to impairment.

Standards issued but not yet effective

Interest rate benchmark reforms

The IASB has issued amendments to IFRS 9, IAS 39 and IFRS 7, effective 1 January 2020, that provide temporary reliefs which enable hedge accounting to continue during the period of uncertainty before replacement of an existing interest rate benchmark with an alternative nearly risk-free interest rate (an RFR).

KPN will implement the amendment as required as of 1 January 2020 and expects no impact on its hedge relationships.

Definition of material

The amendments to IAS 1 and IAS 8, effective 1 January 2020, aim to align the definition of 'material' across the standards and to clarify certain aspects of the definition. The new definition states that 'information is material if omitting, misstating or obscuring it could reasonably be expected to influence decisions that the primary users of general purpose financial statements make on the basis of those financial statements, which provide financial information about a specific reporting entity'.
The amendments explain that information is obscured if it is communicated in a way that would have a similar effect as omitting or misstating the information. The amendments replaced the threshold 'could influence' with 'could reasonably be expected to influence'. As a result, the materiality assessment will need to take into account only reasonably expected influence on economic decisions of primary users of the financial statements.

The amendments must be applied prospectively.

KPN does not expect that the updated definition of material will have a significant impact on KPN's Financial Statements.

Basis of consolidation

KPN's Consolidated Financial Statements include the financial results of its subsidiaries and incorporate KPN's share of the results from associates.

Subsidiaries are all entities directly or indirectly controlled by KPN. Control is defined as the power over an entity, i.e. the ability to govern the financial and operating policies, resulting in obtaining the gains or losses from the entity's activities. Subsidiaries are fully consolidated from the date on which control is obtained by KPN and are deconsolidated from the date on which KPN's control ceases. All intercompany transactions, balances and unrealized results on transactions with subsidiaries are eliminated.

Changes in ownership interests in subsidiaries without change of control that do not result in loss of control are accounted for as equity transactions. Gains or losses on disposals to non-controlling interests are also recorded in equity.

Foreign currency translation

The Financial Statements are presented in euro (EUR), which is KPN's presentation currency as well as functional currency. Transactions in foreign currencies are translated into euro using the exchange rates applicable at transaction date. At reporting date, monetary assets and liabilities denominated in foreign currencies are translated to euro using the rates at reporting date. Exchange rate differences are recognized in profit or loss except when these differences are related to qualifying cash flow hedges and qualifying net investment hedges in which case the exchange rate differences are recorded in OCI.

Exchange rate differences on non-monetary assets and liabilities are reported as part of the fair value gain or loss from that asset or liability. Exchange rate differences arising from the translation of the net investment in foreign entities, of borrowings and other currency instruments designated as hedges of such investments are recognized in OCI.

Goodwill and fair value adjustments arising on the acquisition of a foreign entity are treated as assets and liabilities of the foreign entity and translated at the closing rate at the reporting date.

Subsidiaries

For consolidation purposes, the results and financial position of subsidiaries are translated to EUR at closing rate of the date of the financial position (assets and liabilities) or at the average exchange rates applicable for the specific reporting period (income and expenses). All resulting exchange differences are recognized in OCI.

Statement of Cash Flows

The Statement of Cash Flows is prepared using the indirect method. Cash flows denominated in currencies other than EUR are translated at average exchange rates. Cash flows relating to interest and taxes on profits and tax deductions relating to interest on perpetual hybrid bonds are included in the cash flow from operating activities. The consideration paid in cash for acquired subsidiaries is included in the cash flow from investing activities net of cash acquired. Cash flows resulting from the disposal of subsidiaries are disclosed separately, net of cash sold.

Significant accounting estimates, judgments and assumptions made by management

These are evaluated continuously and are based on historic experience and other factors, including expectations of future events thought to be reasonable under the circumstances. Actual results may deviate from the estimates applied. Estimates are revised when material changes to the underlying assumption occur.

The accounting estimates, judgments and assumptions deemed significant to KPN's financial statements relate to:

Determination of deferred tax assets for losses carry forward and provisions for tax contingencies	Note 8 and 20
Determination of value in use of cash-generating units for goodwill impairment testing	Note 11
Assessments of exposure to credit risk and financial market risks	Note 12.4
The 'more likely than not' assessment required to determine whether or not to recognize a provision for idle cables, which are part of a public electronic communications network	Note 18 and 22
The assumptions used to determine the fair value less costs of disposal of assets and liabilities held for sale, including discontinued operations	Note 15
The assessment of the lease terms deemed reasonably certain of KPN's lease contracts and the incremental borrowing rate used to measure the lease liabilities.	Note 19
Assessment whether revenue for variable consideration is probable or highly probable, This concerns revenue related to disputes and revenue related to VAT regarding unused multipurpose bundles	Note 4 and 20

In preparing the Financial Statements, KPN has applied the concept of materiality to the presentation and level of disclosures. Only essential and mandatory information is disclosed which is relevant to a reader's understanding of these Financial Statements.

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[3] Segment reporting

Operating segments are reported in a manner consistent with the internal reporting to KPN's CEO, who is the Chief Operating Decision-Maker according to IFRS 8 'Operating Segments'.

Comparative financial information for 2018 has been restated to reflect the implementation of IFRS 16 and several relatively small changes to the organizational structure of KPN Group. KPN no longer reports on the subtotal 'The Netherlands'. The former segment 'Other activities' and 'Other The Netherlands' are now combined in 'Other'.

As the sale of iBasis has been completed, this segment is no longer included in KPN's segment information.

Almost all of KPN's operating activities are in the Netherlands.

Operational Segments

KPN's operational segments comprise of Consumer, Business, Wholesale and Network, Operations & IT (NOI). For general information on these segments, read more in chapters 'Shareholder value' and 'Flexible, simple and converged products and services'.

Other

Other comprises KPN Holding, Corporate Center and eliminations.

Segment performance

As part of the simplification process, KPN has limited the intercompany charges to charges that are considered relevant for tax purposes.

As of 2019, KPN introduced EBITDA after lease (EBITDA AL) as a new alternative performance measure following the implementation of IFRS 16. See Appendix 1 for further details.

The EBITDA AL of Consumer, Business and Wholesale represents the contribution margin of these segments and the EBITDA AL of NOI consists mostly of operating expenses. Due to the fact that KPN neither allocates interest expenses to segments nor accounts for taxes in the segments, the disclosure is limited to operating profit for the year.

Investments in property, plant and equipment and intangible assets (Capex) are centrally managed and reported to KPN's Chief Operating Decision-Maker on KPN Group level, not on a segment level.

For an explanation of incidental transactions included in Revenues, Other income and EBITDA AL, see Appendix 1.

Segmentation 2019

€ million	Consumer	Business	Wholesale	NOI	Other[3]	Total KPN Group
Statement of Profit or Loss						
External revenues[1]	2,907	2,021	565	3	3	5,499
Other income	–	30	171	2	–	202
Inter-division revenues	9	16	82	1	-109	–
Total [4]	**2,916**	**2,067**	**818**	**6**	**-105**	**5,702**
Operating expenses	-1,069	-1,135	-141	-652	-127	-3,124
EBITDA[2]	**1,847**	**932**	**677**	**-646**	**-233**	**2,578**
DA&I	-208	-81	-14	-1,179	-55	-1,537
Operating profit	**1,639**	**851**	**663**	**-1,825**	**-287**	**1,041**
EBITDA[2]	1,847	932	677	-646	-233	2,578
DA&I right-of-use assets [19]	-10	-6	-4	-65	-53	-138
Interest lease liabilities [19]	-3	–	-3	-16	-6	-28
EBITDA after lease	**1,835**	**926**	**670**	**-728**	**-292**	**2,412**
Total assets	4,531	2,906	811	8,993	-4,938	12,304
Total liabilities	4,592	2,865	811	9,007	-7,479	9,796

Segmentation 2018 (Restated)

€ million	Consumer	Business	Wholesale	NOI	Other[3]	Total KPN Group
Statement of Profit or Loss						
External revenues[1]	2,975	2,116	517	7	18	5,633
Other income	–	–	–	6	–	6
Inter-division revenues	10	21	107	1	-139	–
Total [4]	**2,986**	**2,137**	**623**	**14**	**-121**	**5,639**
Operating expenses	-1,118	-1,143	-154	-729	-142	-3,286
EBITDA[2]	**1,868**	**994**	**469**	**-714**	**-263**	**2,353**
DA&I	-221	-85	-26	-1,135	-65	-1,533
Operating profit	**1,647**	**908**	**443**	**-1,850**	**-328**	**820**
EBITDA[2]	1,868	994	469	-714	-263	2,353
DA&I right-of-use assets [19]	-11	-6	-9	-63	-57	-146
Interest lease liabilities [19]	-3	–	-4	-19	-6	-33
EBITDA after lease	**1,853**	**987**	**455**	**-796**	**-327**	**2,173**
Total assets	4,545	2,646	1,040	9,520	-4,746	13,005
Total liabilities	4,607	2,585	1,037	9,191	-6,292	11,127

1 External revenues mainly consist of rendering of services
2 Earnings before interest, tax and depreciation, amortization and impairments
3 Including eliminations

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Notes to the Consolidated Statement of Profit or Loss

[4] Revenues and Other income

[4.1] Revenues

€ million	2019	2018
Service revenues	5,110	5,186
Non-service revenues	378	429
Revenues from contracts with customers	**5,488**	**5,615**
Rental and other revenues	11	18
Total	**5,499**	**5,633**

Service revenues are all revenues recognized over time and includes fees for usage of KPN's network and facilities, for example monthly subscription fees and revenues from customer specific IT solutions.
Non-service revenues are revenues recognized at a point in time and includes for example sale of handsets, peripheral equipment as well as software licenses sold without ongoing support.

The application of KPN's accounting policies on revenue recognition, including relevant judgements, and information about KPN's performance obligations is summarized below:

Contracts for fixed-voice/internet/television:

- Installation services offered to consumer customers are generally considered a separate performance obligation, as the customer can choose to make use of an engineer or to self-install. Installation services treated as a separate performance obligation include installation of customer premises equipment (CPE), for example set-top boxes, setting up in-home wifi and installation of customers' own devices. Revenue from installation services is allocated to the installation service at the start of the contract, and recognized as revenue at a point in time (at completion of the installation). The difference between the amount of revenue recognized and the amount charged to the customer is recognized as a contract asset. The CPE itself is considered part of KPN's network. These hardware elements are capitalized as part of property, plant and equipment as KPN retains ownership and control over the economic benefits, and are therefore not considered a separate performance obligation.
- Network access is considered a separate performance obligation. Revenue is recognized over time during the subscription period. In general content, for example TV content is considered part of the network access performance obligation, and revenue is recognized on a gross basis. Revenue for streaming services, which are contracted and billed to customers separately, are recognized on a net basis as KPN acts as an agent.
- One-off connection fees are not separate performance obligations as they are considered to be necessary to get access to the network. The fees charged to the customer are recognized as a contract liability and bundled with the performance obligation for network access.

Postpaid mobile contracts via KPN shops and website:

- The sale of the handset is a separate performance obligation and is recognized as revenue at a point in time (upon delivery of the handset equipment). The amount of revenue allocated to the handset less the amount charged to the customer upfront is recognized as a contract asset if the payment to be received for the handset is conditional on the delivery of telco services and as a financial receivable if the payment to be received is unconditional.
- As of 1 May 2017, KPN is legally required to treat a handset combined with a postpaid subscription as a consumer loan under the Dutch Financial Supervision Act (Wet op het financieel toezicht) if the consumer customer repays the handset in monthly instalments and the credit amount is above EUR 250. The outstanding handset credit is considered a contract asset because the payment is conditional on the delivery of telco services. As of 1 January 2018, the contract with consumer customers for the instalment payments of the handset has changed in both direct and indirect channels and is no longer conditional on the delivery of the telco services. Therefore, a financial receivable is recognized for the instalments to be received (see Note 13). Taking into account the low interest rates and contract duration, these receivables do not include a significant financing component.
- Network access is considered a separate performance obligation. Revenue is recognized over time during the subscription period.

Postpaid mobile contracts via third parties:

- The handsets sold and delivered by third parties, related to KPN subscription contracts, are not performance obligations for KPN. Handset-related dealer fees result in an unbilled receivable on the Statement of Financial Position, which is decreased when handset instalments are billed to the end-customer.
- Transaction related dealer fees paid to acquire or retain subscribers are capitalized as contract costs and expensed on a straight-line basis over the contract term of the underlying customer contract.

Workspace and related services:

- Transition projects for corporate customers are considered separate performance obligations, as the customer can benefit from the project deliverables on its own. Revenue is recognized over time (percentage of completion during the project phase). Transition projects sometimes include the delivery of peripheral equipment and software licenses. These are not considered to be separate performance obligations if KPN performs the installation and/or must provide ongoing support as part of the transition project. If not part of a transition project, revenue for peripheral equipment is recognized as revenue at a point in time (upon delivery of the equipment), whereas revenue for licenses is recognized over time (on a monthly basis).
- Exploitation services are considered a separate performance obligation. Revenue is recognized over time during the contract period.

Wholesale services:

- The Wholesale segment bills customers at (regulated) tariffs that may be disputed by other operators and regulators. A contract liability is recognized in case the invoiced revenue is not considered highly probable.
- Exploitation services are considered a separate performance obligation and revenue is recognized over time.
- One-off connection fees are not separate performance obligations.

In 2018 and 2019, the time value of money was not significant and therefore not recorded.

Generally, the payment term is two weeks in the consumer market and 30 days in the business market.

KPN applies the practical expedients provided in IFRS 15 under which disclosure of amounts of consideration allocated to the remaining performance obligations (unsatisfied or partially satisfied) do not need to be disclosed. This applies to contracts with an original expected duration of less than one year or when KPN bills a fixed amount for network services provided. KPN recognizes revenue from network services in the amount to which KPN has a right to invoice the customer and this amount corresponds directly with the value of KPN's performance completed to date.
The remaining performance obligations expected to be recognized in future periods relating to the transition & transformation projects for workspace services with business customers were nil as at 31 December 2019 (EUR 5m as at 31 December 2018).

Revenues, disaggregated information[1]:

€ million	2019	2018 (Restated)
Unbundled fixed lines service revenues	269	294
Bundled fixed lines service revenues	1,605	1,569
Other (mainly peripheral equipment)	42	51
Consumer Residential Communication Services	**1,916**	**1,914**
Mobile service revenues	779	833
Other (mainly handsets)	221	238
Consumer Mobile Communication Services	**999**	**1,071**
Total Consumer revenues	**2,916**	**2,986**
Mobile service revenues	457	502
Internet of Things	53	46
Broadband & network services	370	382
Fixed-voice	276	342
Other (mainly handsets, peripheral equipment and software licenses)	112	112
Business Communication Services	**1,268**	**1,385**
IT services[2]	268	271
Professional services & consultancy[3]	487	470
Other	14	12
Other Business revenues	**770**	**753**
Total Business revenues	**2,038**	**2,137**
Mobile service revenues	139	124
Fixed lines revenues	509	499
Total Wholesale revenues	**648**	**623**
Other (including eliminations)	-103	-114
Total	**5,499**	**5,633**

1 Including inter-division revenues.
2 Including security, cloud and workspace service except for large corporate customers.
3 Including workspace and related services for large corporate customers.

[4.2] Other income

Other income in 2019 includes the gains on the sale of KPN's subsidiaries NLDC B.V. (EUR 171m), Argeweb B.V. (EUR 4m) and KPN's International Network Services (EUR 25m), as well as the book gain on the sale of various other fixed assets. See Note 21 for further information on the sale of subsidiaries.
Other income in 2018 related to the sale of a technical building and various other fixed assets.

Accounting policy: Revenues

The core principle is that revenue is recognized to depict the transfer of promised goods or services to the customer in an amount that reflects the consideration to which KPN expects to be entitled in exchange for those goods or services. Revenue is recognized when it is probable that the economic benefits associated with a transaction will flow to KPN and the amount of revenue and associated costs can be measured reliably.

KPN follows the five-step process of IFRS 15 to recognize revenue. After a contract with a customer has been entered into, the separate performance obligations are identified which are the distinct goods and services promised to the customer (the customer can benefit from the good or service either on its own, or together with other resources that are readily available to the customer, and the transfer of goods or services to the customer are separately identifiable from other promises in the contract). The next steps are the determination of the transaction price and the allocation to the performance obligations. Allocation of the transaction price to performance obligations is based on standalone selling prices which are based on our price lists and therefore readily available. The final step is to recognize revenue when a performance obligation is satisfied. Revenue is recognized either at a point in time or over time. In general, telco and IT services are delivered over time, whereas handsets and peripheral and network equipment, in case they are treated as separate performance obligations, are delivered at a point in time.

Revenue for variable considerations, including revenue under dispute, is recognized only when it is highly probable which, in some cases, requires significant judgement.

An adjustment for the time value of money is made to a transaction price for the effects of financing, if time between recognition of revenue and cash receipt is expected to exceed 12 months and if it provides the customer with a significant benefit.

If KPN transfers goods or services to a customer before the customer pays consideration or before payment is due, a contract asset is recognized in case the earned consideration is conditional. A financial receivable is recognized if KPN's right to an amount of consideration is unconditional (only the passage of time is required before payment of the consideration is due).

KPN recognizes contract liabilities in the Statement of Financial Position for considerations received in respect of unsatisfied performance obligations. Contract liabilities are recognized as revenue when KPN performs under the contract. At the start of a contract with a customer, in case services or goods are delivered by sub-contractors, KPN determines whether its performance obligation is to provide the specified goods or services itself (acting as a principal) or to arrange for another party to provide those goods or services (acting as an agent) based on the agreed terms and conditions with the customer and the sub-contractor, as well as the nature of the goods and services promised to the customer.

Accounting policy: Costs to obtain and/or fulfill a contract

The incremental costs of obtaining a contract with a customer are recognized as an asset if KPN expects to recover those costs. Costs to obtain a contract that would have been incurred regardless of whether the contract was obtained are recognized as an expense when incurred, unless those costs are explicitly chargeable to the customer regardless of whether the contract is obtained or not.
Costs to fulfill a contract are recognized as an asset if:

- The costs relate directly to a contract; and
- The costs generate or enhance resources that will be used in satisfying performance obligations in the future; and
- The costs are expected to be recovered.

Capitalized contract costs are amortized on a linear basis over the period in which KPN transfers the related goods or services to the customer. KPN applies the practical expedient to immediately expense contract costs when the asset that would have resulted from capitalizing such costs would have been amortized within one year or less.

Assets recognized for costs to obtain a contract and costs to fulfill a contract are subject to impairment testing.

Accounting policy: Other income

Other income includes gains on the sale of property, plant and equipment as well as other gains not related to KPN's operating activities.

[5] Personnel expenses

€ million	2019	2018 (Restated)
Salaries and wages	822	848
Retirement benefits	87	91
Social security contributions	111	113
Additional labor capacity	99	130
Own work capitalized	-119	-114
Other	29	36
Total personnel expenses	**1,027**	**1,103**

Employee redundancy costs are not included in personnel expenses but in other operating expenses. See Note 18 for information on employee redundancy costs.

Number of own personnel (FTE) per segment	31 December 2019	31 December 2018
Consumer	2,699	3,054
Business	4,033	4,487
Wholesale	194	249
Network Operations & IT	3,322	3,534
iBasis	–	238
Other	1,001	1,108
Total FTE	**11,248**	**12,669**
> Of which discontinued operations	–	238

Share plans

KPN has granted shares (equity-settled) and share-based awards (cash-settled) on its shares to members of the Board of Management and senior management. The conditionally granted awards will vest after three years if the employee is still employed by KPN. Vesting is based on individual vesting of 25% relative total shareholder return (TSR) versus peer group, 25% free cash flow, 25% earnings per share, 12.5% on sustainability/ environmental targets and 12.5% on stakeholder/customer targets. Vesting of non-financial targets is subject to achieving a cumulative net profit during the vesting period of three years (i.e. a qualifier for vesting). The peer group and the vesting schedule can be found under 'Long-term incentives' in the 'Remuneration Report'.

As of 2019, the targets for the LTI plan are set as follows: 70% financial targets, of which 45% on cumulative free cash flow over the plan period and 25% on relative TSR measured against the STOXX Europe 600 Telecommunications index and 30% non-financial targets, determined at the start of a new plan by the Supervisory Board from the following categories: (i) Sustainability; (ii) Reputation; (iii) Social; (iv) Key business projects; and (v) Market share.

The main features of the awards granted to KPN management are summarized below.

	Board of Management	Senior management	Maximum term	Settlement type[1]	Vesting period	Holding period after vesting of/until
2015	X		5 years	Equity[2]	3 years	2 years
		X	3 years	Cash	3 years	–
	X (CCO)		4 years	Equity[2]	4 years	–
2016	X		5 years	Equity[2]	3 years	2 years
		X	3 years	Cash	3 years	–
2017	X	X	5 years	Equity[2]	3 years	2 years
		X	3 years	Cash	3 years	–
2018	X	X	5 years	Equity[2]	3 years	2 years
	X (CEO)[3]		4 years	Equity[2]	4 years	–
		X	3 years	Cash	3 years	–
2019	X	X	5 years	Equity[2]	3 years	3 years
		X	3 years	Cash	3 years	–

1 The cash-settled share awards will be settled in cash and no holding restrictions apply. An exception to the holding period for equity-settled plans is made with respect to shares that were sold upon vesting to cover the tax obligation on the vested shares. After vesting, the holder is able to sell a number of unconditional granted shares only up to the amount necessary to settle the wage taxes liability relating to the profit made on the stock compensation plan. Wage tax in the Netherlands is generally around 50% of the total vested amount.
2 Including deferred dividend.
3 In May 2018, KPN's former Chief Executive Officer, Mr. Ibarra was granted shares that would vest in April 2022 if he would still employed by KPN. For this plan, no other performance measures are applicable.

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The total compensation expense associated with the share plans was EUR 4m in 2019 (2018: EUR 4m). The related liability (for cash-settled shares) on 31 December 2019 was EUR 4m (31 December 2018: EUR 4m). This liability is included under Other payables. For the 2016 Share Plan and share-based awards, the service conditions were met in the year 2019. The intrinsic value at vesting was EUR 3m (2018: EUR 13m).

The following table presents the number of shares and share-based awards in thousands under the share plans.

		Total 31 Dec 2017	Granted/ additional vesting[1,2]	Exercised/ Vested	Forfeited	Total 31 Dec 2018[3]	Granted/ additional vesting[2]	Exercised/ Vested	Forfeited[4]	Total 31 Dec 2019[3]	-of which: Non-vested
2015	Share-based awards Sr. man.	2,073	1,510	-3,583	–	–	–	–	–	–	–
2015	Shares BoM	943	876	-1,819	–	–	–	–	–	–	–
2015	Shares CCO	53	–	-53	–	–	–	–	–	–	–
2016	Share-based awards Sr. man.	2,359	–	–	-151	2,208	–	-938	-1,270	–	–
2016	Shares BoM	900	–	–	-132	768	–	-327	-442	–	–
2017	Share-based awards Sr. man.	1,165	143	–	-167	1,141	–	–	-80	1,061	1,061
2017	Shares BoM/Sr. man.	2,306	195	–	-531	1,970	–	–	-98	1,872	1,872
2018	Share-based awards Sr. man.	–	1,384	–	-52	1,332	51	–	-174	1,209	1,209
2018	Shares CEO	–	80	–	–	80	–	–	-80	–	–
2018	Shares BoM/Sr. man.	–	3,109	–	-124	2,985	–	–	-800	2,184	2,184
2019	Share-based awards Sr. man.	–	–	–	–	–	2,059	–	–	2,059	2,059
2019	Shares BoM/Sr. man.	–	–	–	–	–	1,614	–	-438	1,176	1,176

1 On the basis of a 100% grant. The equity-settled share numbers do not include any deferred dividend during the vesting period. The deferred dividend during the vesting period will be granted in additional shares.
2 At grant date, the fair value is calculated using a Monte Carlo Simulation model. In April 2019, the fair value was EUR 2.64 (2018 grant: EUR 1.95) for the 2018 share-based award (cash-settled) and EUR 2.89 (2018 grant: EUR 2.19) for the 2018 equity-settled share grant for the Board of Management (excluding deferred dividend). Final TSR measurement for the 2016 share grant was conducted in February 2019 which resulted in 42.50% vesting in April 2019.
3 The fair value of each cash-settled share-based award was measured on 31 December 2019 using recent strategic plans, forecasts and a Monte Carlo Simulation model, based on the most recent available share price of KPN and its performance compared with peer companies at the moment of valuation (i.e. closing share prices as at 31 December 2019). The fair value on 31 December 2019 was EUR 1.22 (2018: EUR 1.74) for the 2017 share-based award, EUR 2.12 (2018: EUR 2.38) for the 2018 share-based award and EUR 2.62 for the 2019 share-based award.
4 At the end of 2019, KPN held the 6th position with respect to the 2017 share grant and at the end of 2018, KPN held the 8th position with respect to the 2016 share grant. This position and the outcomes of the other targets will lead to a 63.78% vesting in April 2020 of the 2017 share grant. Final TSR measurement for the 2017 share grant was conducted in February 2020.

The fair value of each award at the grant date is determined using the following assumptions:

€ million	2019 LTI	2018 CEO	2018 LTI
Risk-free interest rate based on euro government bonds for remaining time to maturity of 2.7 years	-0.2%	-0.0%	-0.0%
Expected dividend for KPN (based on one year's historical daily data preceding the date of award)	4.5%	4.1%	4.1%
Expected volatility (PSP grant based on 2.7 years' historical daily data) used for TSR	20.4%	N/a	23.8%
Share price at date of award (closing at grant date)	EUR 2.88	EUR 2.42	EUR 2.47

The following paragraphs detail the actual remuneration of the Board of Management and the Supervisory Board. Please refer to the Remuneration Report for the executive pay policy.

Details of actual remuneration

The remuneration of the Board of Management, representing the costs incurred by the company measured under IFRS principles, is as follows:

Name current member	Year	Salary	Severance (EUR)	STI[1] (EUR)	LTI[2] Share awards (EUR)	Pension costs[3] & social security (EUR)	Total (EUR)
J.F.E. Farwerck	2019	687,500	–	497,250	602,478	162,290	1,949,518
	2018	625,000	–	392,687	503,383	146,946	1,668,016
J.C. de Jager	2019	675,000	675,000	421,200	563,054	133,948	2,468,202
	2018	667,569	–	381,562	537,855	130,608	1,717,594
J. Van Overbeke[4]	2019	54,167	–	33,800	23,088	9,663	120,718
M. Snoep[4]	2019	54,167	–	33,800	12,787	8,994	109,748
B. Fouladi[4]	2019	54,167	–	33,800	16,112	9,350	113,429
H. Garssen[4]	2019	41,667	–	26,000	5,115	6,999	79,781
Total current members	**2019**	**1,566,668**	**675,000**	**1,045,850**	**1,222,634**	**331,244**	**4,841,396**
	2018	**1,292,569**	**–**	**774,249**	**1,041,238**	**277,554**	**3,385,610**

Name former member	Year	Salary	Severance (EUR)	STI[1] (EUR)	LTI[2] Share awards (EUR)	Pension costs[3] & social security (EUR)	Total (EUR)
M. Ibarra[1] (since 18 April 2018, up to and including September 2019)	2019	701,244	–	–	-328,275	137,032	510,001
	2018	657,092	–	703,647	328,275	129,108	1,818,122
E. Blok (up to and including April 2018)	2019	–	–	–	–	–	–
	2018	283,333	850,000	315,577	374,031	86,819	1,909,760
F.H.M. van der Post (up to and including September 2018)	2019	–	–	–	–	–	–
	2018	525,000	1,050,000	459,816	788,378	130,261	2,953,455
Total former members	**2019**	**701,244**	**–**	**–**	**-328,275**	**137,032**	**510,001**
	2018	**1,465,425**	**1,900,000**	**1,479,040**	**1,490,684**	**346,188**	**6,681,337**

1 Actual STI relates to performance in the current year but paid out in the following financial year. Please see the 'Short-term incentives' section in the Remuneration Report for the actual pay-out levels per target in 2018. For transition activities and professional services prior to becoming CEO in 2018, Mr. Ibarra received monthly advisory fees totaling EUR 195,000 in cash which are not included in the table.
2 The amounts in the table represent the cost recognized for shares in 2019 and 2018 based on their fair values at grant date. The fair value of the share-based award is recorded as cost over the vesting period. Please see the 'Long-term incentives' section in the Remuneration Report for a further explanation. The EUR 200,000 in cash subject to a 3-year retention period and EUR 200,000 in shares subject to a 4-year retention period for Mr. Ibarra are included in the amounts over the retention period.
3 The pension costs include the costs for survivor's pension, disability coverage, administration as well as the gross allowances. The fixed gross allowance (for the base pay part above EUR 105,075) in 2019 was, EUR 92,553 for Mr. Farwerck (2018: EUR 82,980), EUR 79,777 for Mr. De Jager (2018: EUR 80,131), EUR 4,972 for Mr. Van Overbeke, EUR 4,972 for Ms. Snoep, EUR 4,972 for Mr. Fouladi and EUR 3,597 for Ms. Garssen. For the former members the fixed gross allowance in 2019 was EUR 86,927 for Mr. Ibarra (2018: EUR 82,005, EUR 0 for Mr. Blok (2018: EUR 49,595) and EUR 0 for Mr. Van der Post (2018: EUR 81,542).
4 Remuneration since 1 December 2019.

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See the Remuneration Report for the number of shares under the share plans per individual board member.

See page 78 for stock ownership of members of the Board of Management and Supervisory Board.

Supervisory Board

Please see the Remuneration Report for the actual fee received by each member of the Supervisory Board. The total fee for 2019 is EUR 643,000 (restated 2018: EUR 646,125).

Accounting policy: Share-based compensation

For equity-settled plans, the fair value of shares granted to employees is measured at grant date. For cash-settled plans, the fair value of the liability for the awards granted is remeasured at each reporting date and at settlement date. The costs of share-based compensation plans are determined based on the fair value of the shares and the number of shares expected to vest. On each balance date, KPN determines whether it is necessary to revise the expectation of the number of shares that will vest. The fair value is recognized as personnel expense in profit or loss over the vesting period of the shares against an increase in equity in the case of equity-settled share-based compensation plans and against the recognition of a liability in the case of cash-settled share-based compensation plans.

[6] Other operating expenses

Other operating expenses comprise, among others, a net addition to the restructuring provision, see Note 18.

Auditor's fees

The fees listed below relate to the services provided to KPN and its consolidated group entities by Ernst & Young Accountants LLP, as well as by other Dutch and foreign- based EY individual partnerships and legal entities, including their tax services and advisory groups:

€ million	2019	2018
Financial statements audit fees	3.6	4.1
Other assurance fees	1.0	0.5
Total audit fees	4.6	4.6
Tax fees	0.2	0.2
Total	**4.8**	**4.8**

The total fees of Ernst & Young Accountants LLP charged to KPN and its consolidated group entities amounted to EUR 4.6m in 2019 (2018: EUR 4.6m). The financial statements audit fees include the fees for professional services rendered for the audit of KPN's annual financial statements and the annual statutory financial statements of subsidiaries or services that are normally provided by the auditor in connection with the audits. The other assurance fees include the fees incurred for assurance and related services that are reasonably related to the performance of the audit or review of KPN's financial statements, such as revenue and IT-related assurance services and regulatory-related assurance services.

Accounting policy: Operating expenses

Operating expenses are divided into direct cost (cost of goods and services) and indirect cost (IT/TI, personnel expenses and other operating expenses).

Cost of goods and services are costs incurred in the context of a sales transaction and include subscriber acquisition and retention costs and traffic expenses. These costs are expensed as incurred, except handset fees paid to dealers and transaction related dealer commissions that are capitalized and amortized over the contract term . The cost of a handset is expensed when the handset is sold (as incurred), both as individual sale or as component of a transaction in combination with a subscription.

Information technology (IT) expenses relate to KPN's IT environment and include licenses and maintenance expenses for software and/or IT hardware when not directly related to a sales transaction. Technical Infrastructure (TI) expenses are expenses related to KPN's fixed and mobile networks.

Personnel expenses are all expenses related to KPN's workforce, both related to own employees and external personnel.
Other operating expenses include expenses related to marketing and communication, billing and collection, housing and facilities.

[7] Financial income and expenses

€ million	Notes	2019	2018 (Restated)
Finance income		**24**	**55**
Interest on borrowings		-268	-306
Interest on lease liabilities	[19]	-28	-33
Interest on other provisions		-6	-5
Other interest expenses		-5	-4
Finance costs		**-307**	**-348**
Amortizable part of hedge reserve	[12.1]	-17	-15
Amortization discontinued fair value hedges	[15]	38	38
Derivative financial instruments not qualified for hedge accounting	[12]	-29	-31
Exchange rate differences		1	3
Bond tender premiums and hedge unwinds	[12.2]	-95	–
Other		13	2
Other financial results		**-90**	**-3**
Total		**-372**	**-296**

Finance income included a dividend received from Telefónica Deutschland of EUR 24m (2018: EUR 54m).

Finance costs decreased by EUR 41m, which was mainly related to regular bond redemptions during the year. Interest on borrowings included a non-cash amount of EUR 9m (2018: EUR 8m) relating to debt issuance and similar costs, which are amortized over the remaining life of the respective bonds using the effective interest rate method.

Other financial results increased by EUR 87m (higher net cost), mainly due to the bond tender that KPN completed on 15 November 2019, repurchasing 40.5% of its outstanding 8.375% USD 1.0bn senior bonds due October 2030. The tender and unwind of associated hedges resulted in a net charge of EUR 95m. This was partially offset by the ineffectiveness of continued hedge relationships (EUR 9m gain).

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[8] Taxation

The Netherlands

The tax book loss, which is recognized as a result of the sale of E-Plus in 2014, was used to offset KPN's taxable income in the Netherlands in 2014 up to and including 2019, and will be used to offset most of KPN's taxable income in the Netherlands in the coming years. Dividends received and/or capital gains realized (proceeds above tax book value), on KPN's shareholding in TEFD were subject to Dutch corporate income tax, but could be offset against aforementioned tax book loss (note: dividends qualifying as specific capital repayments are tax exempt). The summary of the remaining tax book loss is provided below. In 2019, KPN sold it's shareholding in TEFD.

KPN has an agreement with the Dutch tax authorities with respect to the application of the Dutch innovation box tax regime. This is a facility under Dutch corporate income tax law whereby profits attributable to innovation are taxed at an effective rate of 7.0% (2018: 7.0%). The application of the innovation box resulted in a benefit of EUR 16m over 2019 (2018: EUR 10m).

See Note 21 for the impact of the acquisitions, which are separately liable for income taxes, and disposals of subsidiaries and business units.

Income tax expense

€ million	2019	2018
Current tax	-8	-10
Deferred taxes	-41	-214
Income tax (charge)/benefit from continuing operations	**-49**	**-224**

The reconciliation from the Dutch statutory tax of 25% (2018: 25%) to the effective tax rate (ETR) of 7.3% (2018: 42.7%) is explained in the table below. The book tax expenses decreased with EUR 175m from EUR 224m in 2018 to EUR 49m in 2019. Changes in Dutch tax rates resulted in a benefit of EUR 48m in 2019 (2018: loss of EUR 110m) on the valuation of our net deferred tax assets, while the tax exemption of the result on disposal of subsidiaries and business units resulted in a tax benefit of EUR 50m (2018: nil).

KPN concluded that IFRIC 23, Uncertainty over Income Tax Treatments, does not affect the reported tax positions.

	2019		2018	
	€ million	ETR	€ million	ETR
Profit before income tax from continuing operations excluding associates and joint ventures	**669**		**524**	
Taxes at Dutch statutory tax rates	-167	25.0%	-131	25.0%
Dutch tax rate adjustment	48	-7.1%	-110	20.9%
Not taxable income, non deductible expenses and liquidation losses	50	-7.5%	–	0.0%
Innovation tax facilities current year	16	-2.5%	10	-2.0%
Deferred tax related to current year	8	-1.3%	-1	0.2%
Other	-4	0.6%	7	-1.4%
Income tax benefit/(charge) from continuing operations	**-49**	**7.3%**	**-224**	**42.7%**

Net DTA of the Dutch fiscal unity with regard to the book loss on the sale of E-Plus

€ million	Net DTA	Realized	Unrealized	Offset by DTL	Net Loss
Balance at 31 December 2017 (Restated)	**770**	**330**	**501**	**-61**	**3,080**
Movement 2018	-237	-196	-90	49	-574
Balance at 31 December 2018 (Restated)	**533**	**134**	**411**	**-12**	**2,506**
Movement 2019	55	19	24	12	132
Balance at 31 December 2019	**588**	**153**	**435**	**–**	**2,638**

Deferred tax positions

Deferred tax assets

€ million	Tax loss & other carry forwards[1]	Unrealized liquidation losses[2]	Bonds & hedges[3]	Restriction on depreciation[4]	Fiscal goodwill[5]	Right-of-use assets[9]	Other	Offset by DTL	Total[6,7]
Balance at 31 December 2017 (Restated)	**401**	**501**	**163**	**141**	**38**	**268**	**76**	**-660**	**927**
Income statement benefit/(charge)	-20	–	-15	-11	57	-24	-2	220	205
Transfer to current tax	-169	–	–	–	-4	–	16	–	-156
Tax charged to OCI	–	–	-1	–	–	–	–	–	-1
Tax rate changes[8]	-16	-90	-26	-25	-17	-50	-15	–	-240
Other (exchange, reclassification, change in consolidation)	-1	–	–	–	–	–	-1	–	-3
Transfer to held for sale	-13	–	–	–	–	–	–	–	-13
Balance at 31 December 2018 (Restated)	**183**	**411**	**120**	**104**	**75**	**194**	**74**	**-440**	**720**
Income statement benefit/(charge)	-10	–	-17	-15	-75	4	1	-13	-124
Transfer to current tax	21	–	–	–	7	–	–	–	28
Tax charged to OCI	-3	–	-33	–	–	–	–	–	-37
Tax rate changes[8]	5	24	16	16	15	9	-1	–	85
Other (exchange, reclassification, change in consolidation)	–	–	–	–	–	-4	2	–	-3
Transfer to held for sale	–	–	–	–	-5	-2	–	–	-8
Balance at 31 December 2019	**195**	**435**	**85**	**105**	**16**	**201**	**76**	**-452**	**662**

1 Net offsettable losses expected to be recovered within the expiration limits of applicable tax law. KPN has a history of recent profits. The tax losses mainly relate to the sale of E-Plus.
2 Unrealized losses expected to be realized upon liquidation of the former E-Plus entities. Consequently, expiration limits are not yet applicable.
3 Amounts relate to capitalized costs for tax purposes, derivative positions adjusted for tax purposes and unrealized FX results included in the hedge reserve.
4 Amounts relate to assets depreciated in 5 years for tax purposes and less than 5 years for book purposes.
5 Amounts relate to goodwill depreciated for tax purposes (originated from internal transfers).
6 Of which EUR 140m to be recovered within 12 months (2018: EUR 93m).
7 Recoverability depending on future taxable results. Based on current projections, KPN expects to fully utilize its realized and unrealized losses well within the expiration limits of applicable tax law.
8 Representing the impact of the Dutch corporate tax rate change of which a net benefit of EUR 12m has been added to OCI in 2019 (2018: net loss of EUR 22m).
9 For leases, KPN separately recognizes both deferred tax assets and deferred tax liabilities, based on the underlying temporary difference.

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Deferred tax positions

Deferred tax liabilities

	Taxable temporary differences								
€ million	Software development[1]	DTL recapture[2]	Accelerated depreciation[3]	Goodwill depreciation[4]	PPA[5]	Lease assets[7]	Other	Offset against tax assets	Total
Balance at 31 December 2017 (Restated)	**149**	**61**	**22**	**70**	**71**	**243**	**44**	**-660**	**1**
Income statement (benefit)/ charge	-12	-7	-19	19	-8	-23	-9	220	161
Transfer to current tax	–	–	–	-4	–	–	-2	–	-6
Tax charged to equity	–	–	–	–	–	–	-5	–	-5
Tax charged to OCI	–	-40	–	–	–	–	–	–	-39
Tax rate changes[6]	-27	-3	-1	-17	-11	-46	-5	–	-108
Other (exchange, reclassification, change in consolidation)	–	–	–	–	-1	–	–	–	-1
Balance at 31 December 2018 (Restated)	**110**	**12**	**3**	**68**	**50**	**174**	**22**	**-440**	**–**
Income statement (benefit)/ charge	2	–	-2	16	-8	2	-8	-13	-12
Tax charged to equity	–	–	–	–	–	–	–	–	–
Tax charged to OCI	–	-14	–	–	–	–	–	–	-14
Tax rate changes[6]	14	3	1	3	4	8	-3	–	29
Other (exchange, reclassification, change in consolidation)	–	–	–	-1	-1	1	–	–	-1
Transfer to held for sale	–	–	–	–	–	-2	–	–	-2
Balance at 31 December 2019	**126**	**–**	**1**	**86**	**45**	**183**	**11**	**-452**	**–**

1 Amounts relate to a capitalized software costs which is taken as an expense for tax books.
2 Amounts relate to the unrealized capital gains on the stake in Telefónica Deutschland which are considered taxable in the Netherlands (recapture rule).
3 Amounts relate to a temporary tax allowance (2009-2011 and part of 2013) to accelerate depreciation on investments for tax purposes.
4 Amounts relate to acquired goodwill depreciated for tax purposes (not for book purposes).
5 See Note 21 for the impact of the acquisitions.
6 Representing the impact of the Dutch corporate tax rate change of which net EUR 12m has been charged to OCI in 2019. (2018: net charge to OCI of EUR 22m).
7 For leases, KPN separately recognizes both deferred tax assets and deferred tax liabilities, based on the underlying temporary difference.

Tax loss carry forward

	31 December 2019			31 December 2018 (Restated)		
€ million	Tax loss carry forward	Maximum deferred tax asset	Recognized deferred tax asset	Tax loss carry forward	Maximum deferred tax asset	Recognized deferred tax asset
Koninklijke KPN – corporate tax[1]	823	195	195	782	180	180
Other	65	14	–	73	16	3
Total KPN Group	**888**	**209**	**195**	**855**	**196**	**183**

1 The offset of realized losses with future profits is limited to 9 years for losses incurred in years ending 2019 and is limited to 6 years for losses incurred in 2020 and onwards.

Expiration of the available tax loss carry forward and recognized tax assets

	31 December 2019			31 December 2018 (Restated)		
€ million	Tax loss carry forward	Maximum deferred tax asset	Recognized deferred tax asset	Tax loss carry forward	Maximum deferred tax asset	Recognized deferred tax asset
2019	–	–	–	1	–	–
2020	–	–	–	1	–	–
2021	–	–	–	5	1	1
2022	46	11	11	17	3	3
2023	635	153	153	755	174	174
2024	1	–	–	–	–	–
Later	199	43	31	75	16	4
Unlimited	7	2	–	1	–	–
Total KPN Group	**888**	**209**	**195**	**855**	**196**	**183**

Accounting policy: Taxation

Current income tax

The current income tax charge is calculated in accordance with the prevailing tax regulations and rates, taking into account non-taxable income and non-deductible expenses. The current income tax expense reflects the amount for the current reporting period that KPN expects to recover from or pay to the tax authorities. Current income tax related to items recognized directly in equity/OCI is recorded in equity/ OCI and not in profit or loss , with an exception for (hybrid) financial instruments classified as equity. KPN's management periodically evaluates positions taken in the tax returns regarding situations in which applicable tax regulations are subject to interpretation and establishes provisions when deemed appropriate.

Deferred income taxes

Deferred income tax positions are recognized for temporary differences between the tax basis of assets and liabilities and their carrying values. DTAs are recognized for deductible temporary differences, the carry forward of unused tax credits and any unused tax losses. DTAs are recognized only to the extent that it is probable that future taxable profits will be available against which the temporary differences can be utilized. Both the recognized and unrecognized DTAs are reassessed on each reporting date based on available projections. If future taxable profits are insufficiently available, derecognition may become inevitable unless certain exceptions can be applied. DTAs are recorded for deductible temporary differences associated with investments in subsidiaries and associates and are recorded only to the extent that it is probable that the temporary differences will reverse in the foreseeable future and taxable profit will be available against which the temporary differences can be utilized.

DTLs are recognized for all taxable temporary differences except when they arise from the initial recognition of goodwill or an asset or liability in a transaction that is not a business combination and, at the time of the transaction, affects neither the profit or loss reported in the Statement of Profit or Loss nor the taxable profit or loss. Also, no DTLs are recorded for taxable temporary differences associated with investments in subsidiaries and associates when the timing of the reversal of the temporary differences can be controlled and it is probable that the temporary differences will not reverse in the foreseeable future. Deferred tax positions are stated at nominal value and are measured at the corporate income tax rates KPN expects to be applicable in the year when the asset is realized or liability is settled based on enacted or substantially enacted tax laws.

DTAs and DTLs are netted if there is a legally enforceable right to offset current tax assets against current tax liabilities and the DTAs/DTLs relate to income taxes levied by the same taxation authority on the same taxable entity or if, in the case of different taxable entities, there is an intention either to settle current tax liabilities and assets on a net basis, or to realize the assets and settle the liabilities simultaneously, in each future period in which significant amounts of deferred tax liabilities or assets are expected to be settled or recovered.

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[9] Earnings per share

The following table shows the income and share data used in the calculations of the basic and diluted EPS.

€ million	2019	2018 (Restated)
Profit for the year from continuing operations	614	292
Profit for the year from discontinued operations	12	-10
Profit for the year	**626**	**282**
Profit attributable to non-controlling interests	–	–
Deduction for perpetual capital securities	-1	-58
Adjusted profit (loss) attributable to ordinary shareholders of the company	**624**	**224**
Weighted average number of subscribed ordinary shares	**4,195,770,386**	**4,194,973,500**
Dilution effects: options and non-vested shares	5,554,828	6,385,261
Weighted average number of subscribed ordinary shares including dilution effects	**4,201,325,214**	**4,201,358,761**

Earnings per ordinary share after taxes attributable to equity holders of the company for the year

€	2019	2018 (Restated)
Basic (continuing operations)	0.15	0.06
Diluted (continuing operations)	0.15	0.06
Basic (discontinued operations)	0.00	0.00
Diluted (discontinued operations)	0.00	0.00
Basic (total, including discontinued operations)	0.15	0.06
Diluted (total, including discontinued operations)	0.15	0.06

Diluted earnings per share is calculated by adjusting the weighted average number of ordinary shares outstanding to assume conversion of all dilutive potential ordinary shares. Share options and non-vested shares are regarded to have potential dilutive effects on the ordinary shares.

Coupons and carrying amount adjustments on the perpetual capital securities were deducted from the profit attributable to equity holders, since the perpetual hybrid bonds represented equity but did not constitute profit attributable to ordinary holders.

The total basic earnings per share include EUR 0.01 (2018: EUR 0.05) tax expenses.

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Notes to the Consolidated Statement of Financial Position

[10] Property, plant and equipment

€ million	Land and buildings	Plant and equipment	Other tangible non-current assets	Assets under construction	Total
Balance at 1 January 2018	**466**	**5,042**	**35**	**268**	**5,811**
Transition impact IFRS 16	-56	–	–	–	-56
Balance at 1 January 2018 (Restated)	**410**	**5,042**	**35**	**268**	**5,755**
Investments	36	781	19	-17	820
Depreciation	-53	-880	-16	–	-949
Impairments and retirements	-1	-3	–	-6	-11
Transfer to assets held for sale	–	-19	–	–	-19
Other	–	–	-1	1	–
Closing net book value	**391**	**4,921**	**37**	**246**	**5,595**
Cost	1,572	9,361	101	246	11,280
Accumulated depreciation/impairments	-1,181	-4,440	-65	–	-5,685
Balance at 31 December 2018 (Restated)	**391**	**4,921**	**37**	**246**	**5,595**
Investments	39	852	20	-29	883
Changes in consolidation [21]	-29	-23	-2	–	-54
Depreciation	-49	-909	-15	–	-973
Impairments and retirements	–	-2	–	-15	-17
Other	-1	-1	–	–	-1
Closing net book value	**351**	**4,839**	**40**	**203**	**5,432**
Cost	1,454	9,392	96	203	11,145
Accumulated depreciation/impairments	-1,103	-4,553	-56	–	-5,713
Balance at 31 December 2019	**351**	**4,839**	**40**	**203**	**5,432**

Accounting policy: PPE

PPE are valued at cost less depreciation and impairment. The cost include direct costs (materials, direct labor and work contracted out) and directly attributable overhead costs. Asset retirement obligations are capitalized as part of the cost of tangible fixed assets and expensed as either depreciation over the assets' estimated useful life or as impairment charges.

PPE are depreciated using the straight-line method, based on estimated useful life, taking into account residual value. Land is not depreciated. PPE are reviewed for impairment whenever events or changes in circumstances indicate that the book value of the assets concerned may not be recoverable. An impairment loss is recognized for the amount by which the assets' book value exceeds its recoverable amount.

Impairments are reversed if and to the extent that the impairment no longer exists. The recoverable amount is defined as the higher of an assets' fair value less costs of disposal and its value in use.

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Estimated useful lives of the principal PPE categories

PPE category	Depreciation period
Land	No depreciation
Buildings	14-33 years
Network equipment	3-7 years
Fiber network infrastructure	30 years
Copper network infrastructure	5-10 years
Vehicles	10 years
Office equipment	4-10 years

The assets' residual values and useful lives are reviewed at least annually and adjusted if appropriate. The 2019-2021 strategy includes, amongst others, accelerating the roll-out of fiber affecting the depreciation period of all new investments in copper infrastructure. As of 1 January 2019, depreciations of these investments were capped at 10 years.

Interest is capitalized as an increase in PPE if the construction of assets takes a substantial period of time and the amount is material.

[11] Intangible assets

Statement of changes in intangible assets with finite lives and goodwill

€ million	Goodwill	Customer relationships	Software - Acquired from third parties	Software - Internally generated	Software - In development	Licenses	Other	Total
Balance at 1 January 2018	**1,530**	**279**	**165**	**322**	**53**	**976**	**17**	**3,341**
Investments	11	–	73	179	37	–	–	300
Change in consolidation	-41	5	1	–	–	–	-6	-41
Amortization	–	-30	-105	-194	–	-85	-6	-420
Impairments	–	–	-4	-3	–	–	–	-8
Subsequent PPA, exchange rate differences and other	11	-18	–	–	–	–	3	-4
Closing net book value	**1,510**	**236**	**130**	**304**	**89**	**890**	**9**	**3,169**
Cost	2,167	369	347	644	89	1,385	53	5,055
Accumulated amortization/impairments	-657	-132	-217	-340	–	-495	-44	-1,885
Balance at 31 December 2018	**1,510**	**236**	**130**	**304**	**89**	**890**	**9**	**3,169**
Investments	–	–	72	240	-57	–	–	255
Changes in consolidation [21]	-15	-4	-1	–	–	–	–	-20
Amortization	–	-30	-85	-201	–	-85	-5	-405
Impairments	–	–	–	-1	-3	–	–	-4
Closing net book value	**1,495**	**202**	**117**	**341**	**30**	**805**	**4**	**2,995**
Cost	2,152	362	261	715	30	1,385	18	4,922
Accumulated amortization/impairments	-657	-159	-144	-374	–	-580	-13	-1,927
Balance at 31 December 2019	**1,495**	**202**	**117**	**341**	**30**	**805**	**4**	**2,995**

Goodwill per CGU

€ million	31 December 2019	31 December 2018
Consumer	770	770
Business[1]	689	701
Wholesale[2]	36	40
Total	**1,495**	**1,510**

1 The change in goodwill Business relates to the sale of KPN International (EUR -5m), the sale of Argeweb (EUR -2m) and the held for sale classification of KPN Consulting (EUR -5m).
2 The change in goodwill Wholesale relates to the sale of NLDC.

Goodwill impairment tests

The annual impairment tests as at 31 December 2019 did not indicate that the book value of KPN's goodwill is not recoverable. KPN's market capitalization on 31 December 2019 was higher than the book value of its equity. A test has been performed of the recoverable amount of the book value of each cash-generating unit (CGU), based on their value-in-use, which was determined by using the discounted cash flow method. Key assumptions used in the cash flow projections are estimated EBITDA, Capex, change in working capital and pre-tax weighted average cost of capital (WACC). The cash flow projections are management's best estimate based on the updated strategic plan and extrapolation to terminal values and includes estimated cash out for the upcoming 5G auctions. The WACC is calculated using a Capital Asset Pricing Model. The WACC used for 2019 reflects the impact of the lease liabilities recognized in accordance with IFRS 16, which reduced the WACC with approximately 0.2%. The terminal growth rate for the period after 10 years is updated consistently in line with the changes in the post-tax WACC. In 2019, the post-tax WACC decreased by approximately 1.5% leading to a terminal growth rate of -0.5% in 2019, compared to 1.0% in 2018. For all three CGUs, the annual impairment tests in 2019 and 2018 resulted in significant positive headroom as at 31 December 2019 and 31 December 2018.

Key assumptions in goodwill impairment tests

CGU	EBITDA margin[1]	Capex intensity	Discount rate	Terminal sales growth[2]
Consumer 2019	51% – 53%	25% – 26%	6% – 7%	-0.5%
Consumer 2018	47% – 53%	22% – 23%	8% – 9%	1%
Business 2019	29% – 33%	14% – 16%	6% – 7%	-0.5%
Business 2018	24% – 35%	13% – 15%	8% – 9%	1%
Wholesale 2019	65% – 68%	29% – 32%	6% – 7%	-0.5%
Wholesale 2018	45% – 55%	25% – 28%	8% – 9%	1%

1 The EBITDA margins for 2018 in the table have not been restated for the impact of IFRS 16 (see page 104) and include operating lease expenses which are not included in EBITDA 2019. This increased the EBITDA margin between 2% and 6%

2 Estimates after 10 years.

Sensitivity analysis shows that the headroom of the CGUs is more than sufficient. For example, a 40% lower estimated operating free cash flow would still not result in a goodwill impairment. Therefore, no sensitivity analysis is disclosed for these CGUs.

Accounting policy: Goodwill and intangibles with finite lives

The excess of the consideration transferred over the fair value of the identifiable net assets acquired in a business combination is recorded as goodwill. Goodwill on acquisitions of subsidiaries is included in intangible assets. Goodwill on acquisition of associates is included in investments in associates.

Goodwill is allocated to CGUs for the purpose of impairment testing. The allocation is made to those CGUs or groups of CGUs that are expected to benefit from the synergies of the business combination. Goodwill is carried at cost less accumulated impairment losses and tested for impairment annually or whenever there is an indication that goodwill may be impaired. Goodwill is impaired if the recoverable amount is lower than the book value. The recoverable amount is defined as the higher of the fair value less costs of disposal and the value in use of the CGUs concerned.
Impairment losses on goodwill are not reversed in the event that circumstances that triggered the impairment have changed.

Licenses and software are valued at cost less amortization and impairment. Amortization is calculated using the straight- line method over the economic useful life and commences at the date that services can be offered (available for use).

Internally developed and acquired software, not being an integral part of PPE, is capitalized on the basis of the costs incurred, which include direct costs and directly attributable overhead costs incurred.

Other intangible assets such as customer relationships and trade names acquired in business combinations are capitalized at their fair values at acquisition date and are amortized using the straight-line method over the economic useful life.
Intangible assets are reviewed for impairment whenever events or changes in circumstances indicate that the book value of the asset may not be recoverable. An impairment loss is recognized for the amount by which the book value of the licenses exceeds its recoverable amount. Impairments are reversed if and to the extent that the impairment no longer exists.
Intangible assets not yet available for use are tested annually for impairment or whenever KPN has an indication that the intangible fixed assets may be impaired. For example, licenses are tested as part of a CGU as licenses do not generate independent cash flows.

The amortization periods of the intangible assets with finite lives are 5-20 years for licenses, 3-5 years for software and 4-20 years for other intangible assets.

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[12] Financial assets and financial liabilities

Summary of the financial assets and liabilities at carrying amount and fair value, classified per category.

€ million		31 December 2019 Carrying amount	31 December 2019 Fair value	31 December 2018 (Restated) Carrying amount	31 December 2018 (Restated) Fair value
Financial assets at FVPL					
Other current financial assets	[12.1]	275	275	50	50
Derivatives	[12.3]	258	258	185	185
Cash and cash equivalents, including classified as held for sale	[14]	767	767	618	618
Financial assets at amortised cost					
Trade and other receivables, contract assets and prepayments	[13]	750	750	951	951
Financial assets at FVOCI					
Equity investments	[12.1]	32	32	475	475
Total financial assets		**2,082**	**2,082**	**2,279**	**2,279**
Financial liabilities FVPL					
Derivatives	[12.3]	140	140	318	318
Financial liabilities at amortised cost					
Borrowings	[12.2]	6,659	7,261	7,519	8,015
Lease liabilities	[19]	930	930	976	976
Trade and other payables	[20]	1,074	1,074	1,176	1,176
Total financial liabilities		**8,803**	**9,405**	**9,989**	**10,485**

Fair value measurement hierarchy at 31 December 2019 (€ million)	Level 1	Level 2	Level 3	Total
Financial assets at FVPL				
Derivatives (cross-currency interest rate swap)	–	70	–	70
Derivatives (interest rate swap) and other	–	188	–	188
Financial assets at FVOCI				
Equity investments:				
Unlisted securities	–	–	32	32
Total assets	**–**	**258**	**32**	**290**
Financial liabilities at FVPL				
Derivatives (cross-currency interest rate swap)	–	98	–	98
Derivatives (interest rate swap)	–	42	–	42
Total liabilities	**–**	**140**	**–**	**140**

Fair value measurement hierarchy at 31 December 2018 (€ million)	Level 1	Level 2	Level 3	Total
Financial assets at FVPL				
Derivatives (cross-currency interest rate swap)	–	23	–	23
Derivatives (interest rate swap) and other	–	162	–	162
Financial assets at FVOCI				
Equity investments:				
Listed securities	449	–	–	449
Unlisted securities	–	–	26	26
Total assets	**449**	**185**	**26**	**660**
Financial liabilities at FVPL				
Derivatives (cross-currency interest rate swap)	–	280	–	280
Derivatives (interest rate swap)	–	38	–	38
Total liabilities	**–**	**318**	**–**	**318**

Fair value estimation

Level 1: Fair value of instruments traded in active markets and based on quoted market prices.
Level 2: Instrument is not traded in an active market and fair value is determined by using valuation techniques based on maximum use of observable market data for all significant inputs.
Level 3: One or more of the significant inputs is not based on observable market data, the fair value is estimated using models and other valuation methods. The valuation of available-for-sale unlisted securities is based on a discounted cash flow model.

Accounting policy: Financial assets

Financial assets are classified at initial recognition.
The classification of financial assets at initial recognition depends on the financial asset's contractual cash flow characteristics and KPN's business model for managing them.

KPN initially measures a financial asset at its fair value plus, in the case of a financial asset not at fair value through profit or loss, transaction costs.

For the purposes of subsequent measurement, financial assets are classified in four categories:
- Financial assets at amortised cost (debt instruments).
- Financial assets at fair value through other comprehensive income (OCI) with recycling of cumulative gains and losses (debt instruments).
- Financial assets designated at fair value through OCI with no recycling of cumulative gains and losses upon derecognition (equity instruments).
- Financial assets at fair value through profit or loss.

[12.1] Financial assets

Equity investments measured at fair value through OCI

During the period, KPN disposed of its remaining stake in Telefónica Deutschland (TEFD). KPN sold 131.2m TEFD shares (4.4%) at an average price of EUR 2.65 per share through various transactions during 2019, including a final sale on 13 June 2019. Cumulative losses on the sold shares in 2019 was EUR 197m. The fair value of KPN's stake in TEFD on 31 December 2018 (4.4%) was EUR 449m. During 2019, a net loss of EUR 101m on the fair value of the stake in TEFD was recorded through OCI. In 2019, KPN received a dividend from TEFD of EUR 24m (2018: EUR 54m) which has been recorded as finance income.

This also includes several minority stakes of which the largest is Actility SA, a provider of network solutions and managed information systems for the Internet of Things market with a carrying value of EUR 7m (2018: EUR 7m). No dividends were received from these investments in 2019 or 2018.

These investments were irrevocably designated at fair value through OCI because KPN believes that the fluctuations in the fair value of these investments do not give a fair view of KPN's performance.

Other current financial assets

Other current financial assets include investments in short-term money market funds for EUR 275m (2018: EUR 50m), which are held at fair value through profit or loss (FVPL). These funds have low volatility, with an investment objective of preservation of principal.

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[12.2] Financial liabilities

The carrying amounts and fair value of borrowings is as follows:

	31 December 2019		31 December 2018	
€ million	Carrying amount	Fair value	Carrying amount	Fair value
Eurobonds EUR	3,480	3,610	3,913	4,040
Eurobonds GBP	1,457	1,766	1,493	1,774
Global bonds USD	647	735	1,089	1,131
Hybrid bonds (GBP and USD)	1,002	1,063	967	1,007
Other borrowings	74	88	57	63
Total borrowings	**6,659**	**7,261**	**7,519**	**8,015**
> of which: current	**937**	**951**	**580**	**583**
> of which: non-current	**5,722**	**6,310**	**6,939**	**7,432**

The fair value for eurobonds, global bonds and hybrid bonds is based on the listed price of the bonds. Other borrowings include cash collateral received on derivatives, bank overdraft and other loans.

KPN's weighted average interest rate on total outstanding borrowings on 31 December 2019 was 3.6% after swaps (2018: 4.2%). KPN's weighted average interest rate on the senior bond portfolio on 31 December 2019 was 3.2% after swaps (2018: 3.8%).

Senior bonds

On 4 February 2019, KPN redeemed the 7.50% coupon eurobond 2009-2019 with a remaining outstanding principal amount of EUR 465m, in line with its scheduled maturity.

On 29 May 2019, KPN redeemed the 6.00% coupon (4.58% after swaps) eurobond 2007-2019 with a remaining outstanding principal amount of GBP 96m (EUR 123m after swaps), in line with its scheduled maturity.

On 15 November 2019, KPN tendered the 8.375% coupon (8.517% after swaps) USD global bond 2000-2030, resulting in a repurchase of USD 405m (40.5% take-up rate). The tender resulted in one-off charges of EUR 95m included in Other financial results (see Note 7).

Hybrid bonds

On 30 October 2019, KPN issued a EUR 500m hybrid bond with a 2.00% coupon and a perpetual maturity. The hybrid bond can, at KPN's discretion, be redeemed at any time between 8 November 2024 and 8 February 2025, and annually on 8 February thereafter at par. The ratings for the hybrid bond are BB+ by S&P, Ba2 by Moody's and BB+ by Fitch Ratings. The rating agencies recognize 50% of the hybrid bond as equity in line with the existing hybrid bonds. The new hybrid bond is classified as equity in the Statement of Financial Position ('Perpetual hybrid bonds'). The hybrid bond has been listed on Euronext Dublin GEM.

As at 31 December 2019, three hybrid bonds are outstanding. Two bonds (EUR and USD) are treated for 50% as equity and 50% as debt in KPN's gross and net debt definitions.
Due to the new tendered bond, KPN has decided that the GBP hybrid bond would be repaid. As a result, the bond was classified as a short-term liability as at 31 December 2019. In January 2020, KPN announced it would redeem the GBP hybrid bond on its first call date of 14 March 2020.

million	Nominal	Nominal €	Coupon	Classification	Redemption	First call date	Swapped	Credit rating
GBP hybrid bond	400	460	6.875%	Liability	14 Mar 2073	14 Mar 2020	Fixed 6.78%	BB/Ba2
USD hybrid bond	600	465	7.000%	Liability	28 Mar 2073	28 Mar 2023	Fixed 6.34%	BB/Ba2
EUR perpetual hybrid bond	500	500	2.000%	Equity	Perpetual	8 Feb 2025	N/a	BB+/Ba2

KPN may, at its discretion and subject to certain conditions, elect to defer payments of interest on the hybrid bonds. Arrears of interest must be paid if dividends are paid on ordinary shares, if payments are made on other hybrid bonds, in the event of early redemption, and for the GBP/USD hybrid bonds at final maturity. KPN does not recognize accruals for coupon payments on the EUR perpetual hybrid bond of EUR 10m per annum. If an accrual had been recognized, the amount would have been EUR 2m on 31 December 2019.

Accounting policy: Borrowings

After initial recognition, loans and borrowings are subsequently carried at amortized cost; any difference between the proceeds (net of transaction costs) and the redemption value is recognized in the P&L over the period of the borrowings using the effective interest method. The amortized cost is calculated by taking into account any discounts or premiums on acquisition or issuance and transaction costs. The effective interest rate amortization is recognized in the P&L as finance costs.

Changes in liabilities arising from financing activities

€ million	Borrowings	Derivative financial instruments	Net liability	Lease liabilities	Net liability including lease liabilities
Balance at 1 January 2018 (Restated)	**7,530**	**160**	**7,690**	**1,072**	**8,762**
Exchange differences	47	-47	–	–	–
Movements recorded as net cash flows arising from/used in financing activities:					
Repayments of borrowings and settlement of derivatives[1] and repayments of lease liabilities[2]	-49	–	-49	-149	-198
Fair value adjustments	-13	18	5	–	5
Other movements[3]	4	2	6	53	59
Balance at 31 December 2018 (Restated)	**7,519**	**133**	**7,652**	**976**	**8,628**
Exchange differences	128	-126	2	–	2
Movements recorded as net cash flows arising from/used in financing activities:					
Repayments of borrowings and settlement of derivatives[1] and repayments of lease liabilities[2]	-922	–	-922	-141	-1,063
Fair value adjustments	-60	-149	-209	–	-209
Other movements[3]	-6	24	18	95	113
Balance at 31 December 2019	**6,659**	**-118**	**6,541**	**930**	**7,472**

1 In the Consolidated Statement of Cash Flows this line item includes a payment of EUR 83m in 2019 and EUR 65m in 2018 regarding cash collateral on derivatives (presented as non-current other receivables) and in 2019 a premium of EUR 136m relating to the bond tender.
2 Interest component of the lease payments are presented within cash flow from operating activities.
3 Other movements of the derivative financial instruments are predominantly movements in the interest part of cash flow hedges, other movements of the lease liabilities include interest, additions of new contracts, remeasurements and modifications (see Note 19).

[12.3] Hedging activities and derivatives

KPN uses derivatives solely for the purpose of hedging underlying exposures. The primary risks managed using derivative instruments are foreign currency risk and interest rate risk.

€ million	31 December2019	31 December 2018
Assets (current and non-current)	258	185
Liabilities (current and non-current)	-140	-318
Total derivatives	**118**	**-133**
of which: designated in a hedge relationship	48	-233
of which: other derivatives not designated in a hedge relationship	70	100

During 2019, a total gain of EUR 9m due to hedge ineffectiveness was recognized in the P&L. This is mainly caused by small differences in the valuation of hedging instruments and hedged items due to credit risk and valuation curves in combination with the cumulative change of the fair value of the hedging instrument becoming greater than the change in the fair value of the hedged item. Note that all hedges continue to be highly effective prospectively.

Derivatives positions are reported on a gross basis and include a credit value adjustment attributable to derivative counterparty default risk of EUR nil as at 31 December 2019 (2018: EUR 1m liability). Part of the derivatives portfolio is subject to master

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netting agreements that allow netting under certain circumstances. If netting had been applied, the total derivatives asset position would be EUR 123m and the total derivatives liability position would be EUR 5m at 31 December 2019 (2018: EUR 26m and EUR 159m respectively).
Part of KPN's derivatives portfolio contains reset clauses or collateral postings at pre-agreed dates (see Note 12.4 'Liquidity risk').

Derivatives designated in a hedge relationship

Cash flow hedges

Bonds denominated in foreign currencies are hedged with cross-currency swaps. The currency exposure is hedged by effectively fixing the countervalue in foreign currency to EUR and by hedging the interest rate exposure by swapping the fixed interest rates in foreign currency to fixed interest rates in EUR. There is an economic relationship between the hedged items and hedging instruments as the terms of the cross-currency swaps match the terms of the bonds. KPN has established a hedge ratio of 1:1 for the hedging relationships as the quantity of hedged items equals the notional amount of the cross-currency swaps. The hedges are until maturity of the underlying senior bonds, or until the first call date in the case of the hybrid bonds. For these hedges, KPN meets the criteria of, and also applies, cash flow hedge accounting. The effectiveness of the hedges is determined at inception and on a quarterly basis. To test the hedge effectiveness, KPN uses the hypothetical derivative method and compares the changes in the fair value of the hedging instruments against the changes in the fair value of the hedged items attributable to the hedged risks. If the cumulative change in fair value of the hedging instrument and hedged item are not equal in absolute terms, the difference will be reported in the P&L to the extent that, in absolute terms, the fair value change of the hedging instrument is greater than the fair value change of the hedged item. Hedge ineffectiveness can arise from:

- Different curves linked to hedged items and hedging instruments;
- The counterparties' credit risk differently impacting the fair value movement of the hedging instruments and hedged items;
- Changes in the terms of the hedge item or hedge instrument.

An overview of the cross-currency swaps at 31 December 2019 and 31 December 2018 is presented below:

Nominal (receive)	Coupon (receive)	Nominal (pay)	Coupon (pay)	Maturity date	Fair value 2019 (EUR m)	Fair value 2018 (EUR m)
GBP –[1]	6.000%, annual	EUR 123	4.580%, annual	29 May 19	–	-16
GBP 400	6.875%, annual	EUR 460	6.777%, annual	14 Mar 20	9	-22
USD 600	7.000%, semi-annual	EUR 465	6.344%, semi-annual	28 Mar 23	55	23
GBP 400	5.000%, annual	EUR 474	4.424%, annual	18 Nov 26	-30	-60
GBP 850	5.750%, annual	EUR 971	5.432%, annual	17 Sept 29	-59	-118
USD 595[2]	8.375%, semi-annual	EUR 450	8.517%, semi-annual	01 Oct 30	-3	-64
Total					**-28**	**-257**

1 On 31 December 2018, the GBP cross currency swaps with maturity date 29 May 2019 had a nominal outstanding value of GBP 96m.
2 On 31 December 2018, the USD cross currency swaps with maturity date 01 October 2030 had a nominal outstanding value of USD 1,000m and a weighted average coupon payment of 8.557%.

The impact of the cash flow hedges on the Statement of Financial Position is as follows:

€ million	Notional amount	Carrying amount	Line item in Statement of Financial Position	Change in fair value used for measuring ineffectiveness for the period
As at 31 December 2019				
Cross currency swaps GBP	1,905	-80	Derivative financial instruments	137
Cross currency swaps USD	915	52	Derivative financial instruments	92
Total	**2,820**	**-28**		**229**
As at 31 December 2018				
Cross currency swaps GBP	2,029	-217	Derivative financial instruments	-55
Cross currency swaps USD	1,221	-40	Derivative financial instruments	88
Total	**3,250**	**-257**		**33**

The change in fair value of the associated hedged items attributable to the hedged risks resulted in ineffectiveness gains in 2019 of EUR 7m (2018: EUR nil).

The effect of the cash flow hedge in the P&L and OCI is as follows:

€ million	Total hedging gain/(loss) recognized in OCI	Ineffectiveness recognized as a gain/(loss) in P&L	Line item in P&L	Amount reclassified from OCI as a gain/ (loss) in P&L	Line item in P&L
Year ended 31 December 2019					
Cross currency swaps GBP	137	5	Other financial results	96	Other financial results
Cross currency swaps USD	92	2	Other financial results	35	Other financial results
Total	**229**	**7**		**131**	
Year ended 31 December 2018					
Cross currency swaps GBP	-55	–	Other financial results	-16	Other financial results
Cross currency swaps USD	88	–	Other financial results	63	Other financial results
Total	**33**	**–**		**47**	

Fair value hedges

In 2017, the 1.125% fixed rate eurobond maturing on 11 September 2028 was swapped to a floating rate using fixed-to-floating interest rate swaps, whereby KPN receives a fixed rate of 0.907% and pays interest at a variable rate equal to six-month Euribor. In 2018, the 0.625% fixed rate Eurobond maturing on 9 April 2025 was also swapped to a floating rate using fixed-to-floating interest rate swaps, whereby KPN receives a fixed rate of 0.920% and pays interest at a variable rate equal to six-month Euribor (in arrears). The swaps are used to hedge the exposure to changes in the fair value of these fixed rate eurobonds against changes in the EUR interest curve.

There is an economic relationship between the hedged item and the hedging instrument as the terms of the interest rate swaps match the terms of the fixed rated bonds (i.e. notional amount, maturity and payment dates). KPN has established a hedge ratio of 1:1 for the hedging relationships as the quantity of hedged item equals the notional amount of the hedging instrument. For these hedges, KPN meets the criteria of, and also applies, hedge accounting. If the cumulative change in the fair value of the hedging instrument and hedged item are not equal in absolute terms, the difference will be recorded in the P&L. The hedge ineffectiveness can arise from:

- Different curves linked to the hedged items and hedging instruments.
- The counterparties' credit risk differently impacting the fair value movement of the hedging instruments and hedged items.
- Changes in the terms of the hedge item or hedge instrument.

The impact of the fair value hedges on the Statement of Financial Position is as follows:

€ million	Notional amount	Carrying amount	Line item in Statement of Financial Position	Change in fair value used for measuring ineffectiveness for the period
As at 31 December 2019				
Interest rate swaps	1,250	75	Derivative financial instruments	51
As at 31 December 2018				
Interest rate swaps	1,250	24	Derivative financial instruments	26

The impact of the hedged items on the Statement of Financial Position is as follows:

€ million	Carrying amount	Accumulated fair value adjustments	Line item in Statement of Financial Position	Change in fair value used for measuring ineffectiveness for the period
As at 31 December 2019				
Fixed rate Eurobonds 2025 & 2028	-1,314	-51	Borrowings	-49
As at 31 December 2018				
Fixed rate Eurobonds 2025 & 2028	-1,263	-25	Borrowings	-26

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The ineffectiveness recognized in the P&L for the year ended 31 December 2019 was a gain of EUR 2m (2018: EUR 1m loss).

Derivatives not designated in a hedge relationship

In 2011, fixed rate eurobonds with maturities on 21 September 2020, 4 October 2021 and 30 September 2024 were swapped to a floating interest rate based on three-month Euribor using fixed-to-floating interest rate swaps. Subsequently in May 2015, KPN swapped the floating rate exposure on these bonds to a fixed rate for the remaining maturity of these bonds and discontinued fair value hedge accounting for the fixed-to-floating interest rate swaps.

The cumulative gain of EUR 224m will be amortized to earnings until maturity of the bonds. The gain realized in the P&L in 2019 was EUR 20m (2018: EUR 20m). The balance of the unamortized gain was EUR 48m at 31 December 2019 (2018: EUR 68m). Since May 2015, KPN holds the interest rate swaps on these bonds at FVPL for an amount of EUR 70m as at 31 December 2019 (2018: EUR 100m) and recorded a loss of EUR 30m in 2019 (2018: EUR 31m loss).

Accounting policy: Derivatives and hedging activities

Derivatives are recognized at fair value. Gains and losses arising from changes in fair value are recognized as finance cost/income during the period in which they arise to the extent that the derivatives have no hedging designation or they are ineffective.

KPN applies IFRS 9 hedge accounting. Derivatives related to loans are designated as either cash flow or fair value hedges. Offsetting effects are recognized in the P&L.

The hedge documentation includes identification of the hedging instrument, the hedged item, the nature of the risk being hedged and how KPN will assess whether the hedging relationship meets the hedge effectiveness requirements (including the analysis of sources of hedge ineffectiveness and how the hedge ratio is determined).
A hedging relationship qualifies for hedge accounting if it meets all of the following effectiveness requirements:

- There is 'an economic relationship' between the hedged item and the hedging instrument;
- The effect of credit risk does not 'dominate the value changes' that result from that economic relationship;
- The hedge ratio of the hedging relationship is the same as that resulting from the quantity of the hedged item that KPN actually hedges and the quantity of the hedging instrument that KPN actually uses to hedge that quantity of hedged item.

Changes in the fair value of an effective derivative, which is designated as a fair value hedge, along with the gain or loss on the hedged item that is attributable to the hedged risk, are recorded in the P&L as finance cost/ income. Changes in the fair value of an effective derivative, which is designated as a cash flow hedge, are recorded in OCI for the effective part, until the P&L is affected by the variability in cash flows of the designated hedged item. The ineffective part of the cash flow hedge is recognized as finance cost/income. If an underlying transaction has ceased to be an effective hedge or in case of early redemption of the hedged item, hedge accounting is discontinued prospectively which means that subsequent changes in fair value are recognized in the P&L as finance cost/income and the cumulative amount recorded in OCI is released in the P&L.

[12.4] Financial risk management and policies

Financing policy

KPN strives for the right balance between investments in the business, shareholder remuneration and a prudent financing policy. It is KPN policy to utilize excess cash for operational and financial flexibility and/or shareholder remuneration.

The net debt/EBITDA AL ratio is one of the drivers for KPN's credit rating and is based on the nominal value of borrowings. KPN remains committed to an investment grade credit profile and aims for a net debt/EBITDA AL ratio of below 2.5x in the medium term.

The difference between the carrying value and nominal value of borrowings includes: (1) carrying value adjustments resulting from fair value hedges; (2) in case of foreign currency bonds, the difference between the nominal amount at the prevailing spot rate and the swapped nominal amount in EUR; and (3) amortized debt issuance costs.

€ million	31 December 2019	31 December 2018 (Restated)
Borrowings	6,659	7,519
Equity hybrid	500	–
Bank overdraft	–	-5
50% equity credit for hybrid bonds	-483	-463
Cash collateral paid on derivatives	-97	-180
Difference between carrying value and nominal value	-392	-374
Adjusted gross debt	**6,188**	**6,497**
Net cash and cash equivalents	766	613
Short-term investments	275	50
Net debt[1]	5,148	5,834
Normalized EBITDA AL	2,317	2,314
Net Debt/EBITDA AL	**2.2x**	**2.5x**

1 Excluding lease liabilities

Financial risk management

KPN is exposed to a variety of financial risks. The overall risk management program focuses on the unpredictability of financial markets and seeks to minimize potential adverse effects on KPN's financial position and performance. Derivatives are used to hedge certain risk exposures (see Note 12.3).
The financial risks are managed by KPN's Treasury department under policies approved by the Board of Management and Supervisory Board. These policies are established to identify and analyze financial risks, to set appropriate risk limits and controls, and to monitor adherence to those limits.

KPN's key financial risks are:
- Credit and counterparty risk
- Liquidity risk
- Market risk

Credit and counterparty risk

Credit risk arises from the possibility of asset impairment occurring when counterparties are unable to meet their obligations in transactions involving financial instruments. KPN's counterparty policy sets limits for the maximum exposure per counterparty, which are primarily based on credit ratings, investment periods and collateral. The minimum counterparty credit rating (Moody's equivalent) is A3 for cash balances and for entering into new derivative transactions. Cash balances used for working capital purposes can also reside at banks with lower credit ratings. Capital preservation is KPN's main priority when investing excess cash.

As at 31 December 2019, KPN's cash balances and short-term investments were held in bank accounts, bank deposits and money market funds with maturities up to three months. The majority of cash balances were invested with counterparties with a credit rating equivalent to A2 at Moody's or higher and the counterparties of outstanding derivatives have a credit rating equivalent to Baa1 or higher with Moody's.

Credit risk on trade receivables is controlled using restrictive policies for customer acceptance. Credit management is focused on mobile services. Before accepting certain new customers in this segment, the creditworthiness of prospective clients is checked. In addition, KPN keeps track of the payment performance of customers. If customers fail to meet set criteria, payment issues must be resolved before a new transaction will be entered into.

KPN's policy is to provide financial guarantees only to wholly-owned subsidiaries. As at 31 December 2019, KPN had parent guarantees and bank guarantees outstanding to third parties for various Dutch wholly-owned subsidiaries. The carrying amount of financial assets including cash represents the maximum credit exposure, which amounts to EUR 2,082m at 31 December 2019 (2018: EUR 2,279m). On 31 December 2019, the total outstanding bank guarantees amounted to EUR 7m (2018: EUR 7m), which were issued in the ordinary course of business.

See schedule of the allowances for expected losses in Note 13 for information about credit losses on trade and other receivables. There were no other credit losses.

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Maturity analysis of the financial liabilities based on the remaining contractual maturities on 31 December 2019:

€ million	Borrowings: Bonds and loans[1]	Interest on bonds and loans[2]	Lease liabilities	Other debt and cash collateral	Derivatives: Derivatives inflow (including interest)	Derivatives outflow (including interest)	Trade and other payables and accrued expenses	Total
2020	931	262	164	16	-803	727	953	2,250
2021	613	212	136	–	-288	237	–	910
2022	616	189	121	–	-276	235	–	885
2023	534	162	110	9	-795	688	–	708
2024	431	162	101	–	-239	205	–	660
2025 and further	3,299	648	393	–	-4,382	4,185	–	4,143
Contractual cash flows	**6,425**	**1,635**	**1,026**	**25**	**-6,783**	**6,276**	**953**	**9,557**

1 Includes the USD hybrid bonds with final maturities in 2073 (redemption value of EUR 465m) and GBP hybrid bonds with maturities in 2020 (redemption value of EUR 460m).
2 Interest payments on the USD hybrid bonds (EUR 37m per year until the first call date in 2023) are not included. KPN may, at its discretion and subject to certain conditions, elect to defer payments of interest on these hybrid bonds. Any arrears of interest must be paid at the latest at redemption in 2073, the amount of which cannot be reliably measured because of the duration of the hybrid bonds.

Liquidity risk

Liquidity risk is the risk that KPN will not be able to meet its financial obligations associated with financial instruments as they become due. KPN's approach to managing liquidity is to ensure sufficient liquidity to meet its liabilities when due, under both normal and stressed conditions, without incurring unacceptable losses or risking damage. Part of the derivatives contain reset clauses or collateral postings at pre-agreed dates, in order to mitigate counterparty exposure during the life of the swap. These reset clauses will result in early euro settlement obligations in cash with the swap counterparty, which could lead to additional cash inflows or outflows before maturity. During 2019, KPN received net collateral of EUR 107m (2018: paid EUR 113m), according to pre-agreed settlement schedules. In order to reduce liquidity risks, the reset clauses or collateral postings are spread over different points in time.

Available financing sources

In addition to the available cash and cash equivalents and short-term investments and cash flows from operations, KPN has the following committed financing resources available:

Revolving credit facility

The EUR 1.25bn revolving credit facility has a final maturity of 1 July 2023. The facility is used for general corporate purposes and does not contain any financial covenants. The facility was undrawn as of 31 December 2019.

EIB facility

On 1 April 2019, KPN signed a EUR 300m committed standby credit facility with the European Investment Bank (EIB), which remained undrawn during 2019. The facility has an availability period until 30 September 2020 and drawdowns will have a maximum maturity of 7 years and 4 months from drawdown.

Capital resources covenants

KPN's existing capital resources contain the following covenants as at 31 December 2019, which could trigger additional financial obligations or early redemption of the outstanding indebtedness. All senior bonds issued after 1 January 2006 (EUR 4.8bn outstanding at 31 December 2019) contain a change of control clause. KPN may be required to early redeem, in case certain changes of control occur and within this change of control period (maximum of 90 days) a rating downgrade to sub-investment grade occurs. The hybrid bonds also contain a change of control clause by means of which KPN has the possibility to repurchase the hybrid bonds at par. A 5% interest step-up applies if a rating downgrade occurs during the change of control period in respect of that change of control. In addition, many of KPN's capital resources contain a covenant prohibiting KPN from entering into any amalgamation, demerger, merger, corporate restructuring or reorganization, unless prior written consent has been given by a majority of the lenders or bondholders or the resulting company assumes all of the rights and obligations with respect to the loans or bonds.

Market risk

KPN is exposed to various kinds of market risks in the ordinary course of business. These risks include foreign currency exchange rate risk and interest rate risk.

Foreign currency exchange rate risk

Foreign currency risks mainly result from settlement of international telecommunications traffic and purchase of assets and primarily consists of GBP and USD exposure. Foreign currency exchange rate risks related to bonds that are not denominated in EUR are hedged into EUR in line with KPN's hedging policies.

Group companies and business operations are obliged to hedge their firm commitments and highly predictable anticipated transactions in non-functional currencies by forward contracts. Accordingly, KPN's Treasury department matches and manages the intercompany and external exposures using forward exchange contracts. No hedge accounting is applied for these hedge instruments.

As at 31 December 2019, more than 98% (2018: 97%) of cash and cash equivalents was denominated in the functional currency of the related entities. More than 99% of the net amount of trade receivables and more than 96% of the amount of trade payables was outstanding in the functional currency of the related entities at 31 December 2019 and 2018.

Interest rate risk and interest rate profile

Interest rate risk is the risk that the fair value or future cash flows of a financial instrument will fluctuate as a result of changes in market interest rates. Borrowings, derivatives, cash and cash equivalents are subject to interest rate risk. With regard to interest rate risk exposure, KPN periodically evaluates the desired mix of fixed and floating interest rate liabilities, balancing the benefit of lower interest costs vs. the variability of cash flows. Any interest exposure longer than one year is considered to be fixed. KPN may use derivative financial instruments to adjust the desired interest rate exposure. As at 31 December 2019, 81% of KPN's interest-bearing gross debt (after swaps, excluding bank overdrafts) was at fixed interest rates (2018: 83%).

With a view to the existing and forecasted debt structure, KPN could enter into additional future derivatives to further adjust the mix of fixed and floating interest rate liabilities.

A sensitivity analysis as at 31 December 2019 with regard to interest rate risk on interest-bearing liabilities (excl. cash flow hedges) showed that, ceteris paribus, each adverse change of 100 bps in six-month Euribor would hypothetically result in EUR 13m higher interest costs per annum (2018: EUR 10m).

Cash flow hedges

KPN carried out a sensitivity analysis as at 31 December 2019 with regard to interest rate and currency risk on the cash flow hedges. KPN applies cash flow hedge accounting on all bonds not denominated in EUR. With all other variables held constant, KPN calculated the hypothetical impact of changes in interest rates based on various scenarios. This would hypothetically result in a higher or lower value of the hedge reserve, which is included in equity attributable to equity holders. In a similar way, KPN calculated the hypothetical impact of changes in the EUR/USD rate and the EUR/GBP rate, holding all other variables constant. The results of the analysis are shown in the table below, indicating the hypothetical impact on the fair value of the cross- currency swaps (excluding the partially offsetting impact on the hedged items).

		GBP		USD		Total	
€ million (before tax)	Change	2019	2018	2019	2018	2019	2018
Change in interest rate	+1%-point	-3	-10	3	-4	–	-14
	-1%-point	3	11	-4	3	-1	14
Change in FX rate	+10%-point	30	38	36	47	66	85
	-10%-point	-38	-46	-45	-57	-84	-103

Prospective effectiveness testing indicates that all cash flow hedges are expected to be highly effective. Consequently, the expected impact on the P&L is immaterial.

Derivatives held at fair value

KPN carried out a sensitivity analysis on 31 December 2019 with regard to the fair value of interest rate swaps (excluding the partially offsetting impact on the hedged items):

€ million	Change	2019	2018
Changes in EUR interest rates	+1%-point	-88	-96
	-1%-point	94	102

For a sensitivity analysis on interest rate risk regarding pensions, see Note 17.

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Offsetting financial assets and financial liabilities

Financial assets

The following financial assets are subject to offsetting, enforceable master netting arrangements and similar agreements (continuing operations only):

€ million 31 December 2019	Gross amount	Financial liabilities set off	Net amount in balance sheet	Not offset: Financial instruments/Cash collateral	Net amount
Cash and cash equivalents	766	–	766	–	766
Derivatives	258	–	258	-24	234
Trade and other receivables	–	–	–	–	–
Total	**1,024**	**–**	**1,024**	**-24**	**999**
31 December 2018					
Cash and cash equivalents	594	–	594	-5	589
Derivatives	185	–	185	-	185
Trade and other receivables	–	–	–	–	–
Total	**779**	**–**	**779**	**-5**	**774**

Financial liabilities

The following financial liabilities are subject to offsetting, enforceable master netting arrangements and similar agreements:

€ million 31 December 2019	Gross amount	Financial liabilities set off	Net amount in balance sheet	Not offset: Financial instruments/Cash collateral	Net amount
Derivatives	140	–	140	-97	44
Trade and other payables	–	–	–	–	–
Total	**140**	**–**	**140**	**-97**	**44**
31 December 2018					
Derivatives	318	–	318	-180	138
Trade and other payables	–	–	–	–	–
Total	**318**	**–**	**318**	**–180**	**138**

For the financial assets and liabilities summarized above, each agreement between KPN and the counterparty allows for net settlement of the relevant financial assets and liabilities when both parties elect to settle on a net basis.

Accounting policy: Offsetting financial assets and liabilities

Financial assets and liabilities are offset and reported on a net basis on the balance sheet only when there is a legally enforceable right to offset the recognized amounts and there is an intention either to settle on a net basis or to realize the asset and settle the liability simultaneously.

[13] Trade and other receivables, contract assets and contract costs

13.1 Trade and other receivables

€ million	31 December 2019 Current	31 December 2019 Non-current	31 December 2018 (Restated) Current	31 December 2018 (Restated) Non-current
Trade receivables	264	–	343	–
Financial receivables handsets	240	–	187	–
Sales to be invoiced	110	–	128	–
Interest to be received	24	–	23	–
Prepayments, accruals and other receivables	118	111	100	197
Total	**756**	**111**	**780**	**197**

The decrease in 2019 of trade receivables of EUR 79m mainly relates to received payments of business customers.

As of 1 January 2018, KPN's general terms and conditions of the contract with customers in the Consumer segment for a handset with postpaid subscription have changed. The instalment payments on the handset loan, as issued by KPN Finance B.V., have become unconditional on the delivery of the telco service, resulting in higher financial receivables.

The non-current other receivables relate for EUR 97m to cash collateral received on derivatives (2018: EUR 180m).

The carrying amounts of trade and other receivables approximate their fair value. Trade and other receivables are non-interest bearing.

Sales to be invoiced include accrued income related to usage of KPN's network which is invoiced monthly in arrears.

Trade receivables are generally on payment terms of 14 to 30 days.

The aging of the gross trade receivables is as follows:

€ million	31 December 2019	31 December 2018 (Restated)
Trade receivables gross		
Amounts undue	169	234
Past due 0–90 days	64	77
Past due 91–360 days	19	34
More than one year	33	27
Total trade receivables gross	**284**	**373**
Provision for credit risk exposure	20	30
Total trade receivables net	**264**	**343**

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13.2 Contract assets and contract costs

€ million	31 December 2019 Current	31 December 2019 Non-current	31 December 2018 (Restated) Current	31 December 2018 (Restated) Non-current
Contract assets	32	1	103	1
Costs to obtain a contract	–	31	–	32
Costs to fulfill a contract	5	–	3	–
Total	**37**	**32**	**106**	**33**

Contract assets

A contract asset is recognized in case the earned consideration is conditional. This includes:

- Handsets delivered at the start of postpaid mobile contracts entered into before 2018.
- Handset-related dealer fees (amounts paid to dealers for the delivery of handsets to the end-customer/postpaid mobile contracts via third parties).
- Installation services at the start of the contract if the amount of revenue recognized is higher than the amounts charged upfront.
- Transition projects for business customers when the revenue recognized is higher than the amounts invoiced for the transition phase.

Upon invoicing, the amounts recognized as contract assets are reclassified to trade receivables.

The decrease in the contract assets is mainly related to the instalment payments of handsets accounted for as financial receivable instead of as a contract asset as of 1 January 2018 (see Note 13.1).

Contract costs

Contract costs include:

- Transaction-related dealer fees paid to acquire or retain mobile subscribers.
- Costs incurred during the transition phase of projects for business customers to be able to deliver exploitation services which are not treated as a separate performance obligation. The costs are capitalized as costs to fulfil a contract and expensed in principle on a straight-line basis over the remaining contract term in which the exploitation services are delivered.

13.3 Allowances for expected credit losses

The movement schedule of the allowances for expected credit losses is as follows:

	Allowance for expected credit losses			
€ million	Trade receivables	Financial receivables handsets	Contract assets	Total
Balance at 1 January 2018	**30**	**–**	**8**	**38**
Additions/releases P&L	14	5	-7	12
Usage	-10	–	–	-10
Other movements	-4	–	–	-4
Balance at 31 December 2018	**30**	**5**	**1**	**36**
Additions/releases P&L	16	-2	–	14
Usage	-25	–	–	-25
Balance at 31 December 2019	**20**	**4**	**–**	**24**

Accounting policy: Trade and other receivables, contract assets and contract costs

Trade and other receivables and contract assets classify as financial assets and are measured at amortized cost if both of the following conditions are met:

- The financial asset is held within a business model with the objective to hold financial assets in order to collect contractual cash flows.
- The contractual terms of the financial asset give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

Financial assets at amortized cost are subsequently measured using the effective interest method less provisions for impairment. An allowance for expected credit losses is recorded for all financial assets and contract assets at initial recognition. This allowance is regularly updated.

The amortized cost is calculated by taking into account any discounts or premiums on acquisition and transactions costs. The effective interest rate amortization is recognized under finance income or finance costs.

See Note 4 for the accounting policy regarding contract costs.

[14] Cash and cash equivalents

Cash and cash equivalents consist of highly liquid instruments with initial maturities of three months or less, including balances on bank accounts, bank deposits and money market funds.

€ million	31 December 2019	31 December 2018
Cash	292	318
Short-term bank deposits, repurchase agreements and money market funds	475	300
Classified as held for sale	-1	-24
Total cash and cash equivalents	**766**	**594**

The increase in cash and cash equivalents was mainly caused by EUR 750m free cash flow generated during the year, EUR 605m disposal proceeds (incl. sale of Telefónica Deutschland shares), partly offset by EUR 512m dividend payments and EUR 587m of net debt redemptions (including the bond tender).

Accounting policy: Cash and cash equivalents

Cash and cash equivalents comprise cash in hand, deposits held at call with banks, AAA-rated prime money market funds and other short-term highly liquid investments with original maturities of three months or less. Bank overdrafts are included within borrowings in current liabilities.

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[15] Non-current assets, liabilities and disposal groups held for sale

€ million	31 December 2019	31 December 2018
Intangible assets	15	49
Property, plant and equipment	–	27
Other non-current assets	16	7
Current assets	13	90
Fair value adjustment of disposal group	–	-25
Total assets of disposal groups held for sale	**44**	**148**
Non-current liabilities	-7	-2
Current liabilities	-22	-95
Total liabilities directly associated with the non-current assets and disposal groups classified as held for sale	**-30**	**-98**

As at 31 December 2019, KPN Consulting B.V. and an equity investment accounted for using the equity method were classified as held for sale. As at 31 December 2018, only iBasis (discontinued operation) was classified as held for sale.

On 12 December 2019, KPN announced the sale of KPN Consulting B.V. to Cegeka N.V., a European ICT-services provider. The transaction is expected to be completed in the first half of 2020. KPN Consulting B.V. has been classified as held for sale since 31 December 2019. KPN Consulting B.V. is part of KPN's Business segment and does not qualify as a discontinued operation, therefore the financial results of KPN Consulting remain included in KPN consolidation until completion of the sale. KPN will receive a cash consideration and expects to recognize a modest book gain upon completion of the transaction.

During 2019, KPN announced and completed the sale of NLDC B.V., Argeweb B.V. and its international network. See Note 21 for information on these transactions.

Discontinued Operations

iBasis Inc. has been classified as disposal group held for sale since 7 March 2019. The sale has been completed on 8 February 2019. iBasis has been eliminated from the segment disclosures but the profit/loss (-) for the period from discontinued operations in the Consolidated Statement of Profit or Loss and cash flows from discontinued operations include results related to iBasis until 8 February 2019.

The following table presents the assets and liabilities of iBasis at divestment date:

€ million	9 February 2019
Intangible assets	47
Property, plant and equipment	19
Other non-current assets	9
Current assets	86
Non-current liabilities	-2
Current liabilities	-90
Fair value adjustment	-25
Net assets and liabilities	**44**

The following table summarizes the results of iBasis included in the Consolidated Statement of Profit or Loss as 'profit/loss for the period from discontinued operations':

€ million	2019	2018
Revenues and other income	36	469
Operating expenses	-35	-447
Finance income and expenses	–	2
Share of the loss of associated and joint ventures	–	–
Income taxes	–	-7
Result for the period from discontinued operations before impairment and tax effects resulting from the transaction	**1**	**17**
Impairment disposal group	–	-25
Realized cumulative currency translation adjustment	12	–
Profit/Loss (-) for the period from discontinued operations related to iBasis	**13**	**-7**

Some results (and cash flows) from discontinued operations may continue to arise following the unwinding of remaining positions of iBasis (sold in 2019), BASE Company (sold in 2016) and E-Plus (sold in 2014). The positive result from discontinued operations of EUR 12m (2018: EUR -10m) includes, besides the EUR 13m result from iBasis (2018: EUR -7m), EUR -1m related to BASE Company (2018: EUR -9m). The 2018 result included a positive result of EUR 6m related to E-Plus. The negative result related to BASE Company in 2018 arose from a balance sheet guarantee. The positive result related to E-Plus in 2018 related to settlement of several German tax positions.

The cash flow from discontinued operations is as follows:

€ million	2019	2018
Cash flow from operating activities	1	9
Cash flow from investing activities	35	-7
Cash flow from financing activities	–	–
Total net cash (outflow)/inflow from discontinued operations	**37**	**2**

Upon completion of the sale of iBasis, KPN received a net cash consideration of EUR 36m, included in the cash flow from investing activities from discontinued operations. Transaction costs amount to EUR 5m and are included in the cash flow from operating activities from discontinued operations.

Accounting policy: Non-current assets and disposal groups held for sale

Non-current assets and disposal groups classified as held for sale as well as liabilities directly associated herewith are stated at the lower of carrying amount (book value) and fair value less costs of disposal if their carrying amount is recovered principally through a sale transaction rather than through continuing use. If fixed assets are transferred to held for sale, depreciation and amortization ceases. A disposal group classifies as a 'discontinued operation' based on its significance to the KPN Group.

[16] Equity

Limitations in distribution shareholders' equity

Total distributable reserves at 31 December 2019 amounted to EUR 2,173m which includes the perpetual capital securities (2018: EUR 1,541m). For further details on non-distributable reserves, see Note C to the Corporate Financial Statements.

Share capital

Authorized capital stock totals EUR 720m divided into nine billion ordinary shares of EUR 4ct each and nine billion preference shares B of EUR 4ct each. At 31 December 2019, a total of 4,202,844,404 ordinary shares were outstanding and fully paid-in. Dutch law prohibits KPN from casting a vote on shares KPN holds (treasury shares). The ordinary shares and preference shares B carry the right to cast one vote each. The ordinary shares are registered or payable to the bearer. Shareholders may request the company to convert their registered shares to bearer shares, but not vice versa.

€ million, unless indicated otherwise	Number of treasury shares	Treasury shares reserve	Hedge reserve	Currency translation reserve	Total Other reserves
Balance at 1 January 2018	**9,172,848**	**-103**	**-335**	**36**	**-402**
Movements recorded in OCI (net)	–	–	-20	4	-16
Sold treasury shares	-1,872,394	20	–	–	20
Balance at 31 December 2018	**7,300,454**	**-83**	**-355**	**40**	**-398**
Movements recorded in OCI (net)	–	–	115	-21	94
Sold treasury shares	-370,531	4	–	–	4
Balance at 31 December 2019	**6,929,923**	**-79**	**-240**	**19**	**-300**

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The additional paid-in capital is exempt from Dutch tax up to an amount of EUR 9,282m at 31 December 2019 (2018: EUR 9,282m).

Hedge reserve

€ million	31 December 2019	31 December 2018
Effective portion cash flow hedges[1]	-170	-269
Amortizable part[2]	-137	-178
Hedge reserve	**-307**	**-447**
Tax effect	67	92
Hedge reserve, net of tax	**-240**	**-355**

1 The effective portion of cash flow hedges will be recognized in the P&L in line with the maturities of the related derivatives (see Note 12.3).
2 The amortizable part of the hedge reserve is amortized over the remaining life of the related bonds (between 2016 and 2030). The impact on the P&L will be EUR 15m in 2020.

Treasury shares reserve

KPN purchased shares in its own capital for delivery upon exercise of share options by management and personnel under the share option and performance share plans (Note 5). Votes on purchased shares may not be cast and do not count determining the number of votes required at a General Meeting of Shareholders. In 2019 and 2018, no shares were purchased for the share option and performance share plans. In 2019 and 2018, shares were sold in connection with vesting grants of the KPN Restricted Share Plan (see Note 5).

Treasury shares are accounted for at cost, representing the market price on the acquisition date. The proceeds at delivery of the treasury shares are recognized directly in the other reserves.

Equity attributable to holders of perpetual capital securities

On 8 November 2019, KPN issued a EUR 500m hybrid bond with a 2.00% coupon and a perpetual maturity. This bond is classified as equity in the Consolidated Statement of Financial Position and valued at net proceeds (see Note 12.2).
On 14 September 2018, KPN exercised its first call option and redeemed the EUR 6.125% perpetual hybrid securities with a remaining outstanding principal amount of EUR 1,100m. The hybrid bond was classified as equity (perpetual capital securities) for an amount of EUR 1,089m. The difference of EUR 11m has been deducted from retained earnings together with the last interest payment of EUR 62m. The related tax gain of EUR 12m on the interest payment has been recognized in the Consolidated Statement of Profit or Loss, in accordance with IAS 12. For interest payments and credit ratings, see Note 12.2.

Foundation Preference Shares B KPN

KPN has granted a call option, which is not limited in time, to the Foundation Preference Shares B KPN (the Foundation) to acquire preference shares B. For further information about the Foundation, see the section 'Corporate governance'.

KPN is of the opinion that the call option does not represent a significant fair value due to the fact that the preference shares B, issued after exercise of the call option, bear interest linked to Euribor.

Dividend per share

At the AGM of Shareholders, to be held on 15 April 2020, a final dividend of EUR 8.3ct per share will be proposed in respect of 2019. In August 2019, KPN paid an interim dividend in respect of 2019 of EUR 4.2ct per share, in total EUR 176m, bringing the total regular dividend in respect of 2019 to EUR 12.5ct per share. These financial statements do not reflect the proposal for the remaining dividend payable.

In April 2019, KPN paid a final dividend of EUR 8.0ct per share in respect of 2018, in total EUR 336m. The total dividend in respect of 2018 was EUR 13.3ct per ordinary share including the special interim cash dividend of EUR 1.3ct per share in relation to the dividend received from KPN's stake in TEFD.

[17] Retirement benefits

Retirement benefits are provided through a number of defined contribution plans and funded and unfunded defined benefit plans. The most significant plans are described below.

KPN main pension plan

KPN's main pension plan covers employees in the Netherlands who are subject to KPN's collective labor agreement and employees with an individual labor agreement, and is externally funded through Stichting Pensioenfonds KPN. This plan is a collective defined contribution pension plan and is accounted for as a defined contribution plan because KPN has no other obligation than to pay the annual contribution which is a fixed percentage of the pensionable base for a period of five years. After this five-year period, the annual contribution will be reassessed based on a fixed and agreed method in which no reflection to past service or the funded status of the fund is included.

Getronics UK and US

The Getronics US and UK operations were divested in 2008 and 2012 respectively. The closed and frozen pension plans of the former US and UK operations remained with KPN and are accounted for as a defined benefit plan. The assets of the plans are held separately from KPN in independently administered funds except for two supplemental executive retirement plans in the US. The UK plan operates under the regulations of the UK Pensions Regulator and the main US plan under the provisions of the Employee Retirement Income Security Act (ERISA). The deficit in the plans' funding must be recovered by the investment returns in the plans' assets and contributions by KPN. The pension plans in the UK and US expose KPN to a number of risks which can have an impact on the future contributions by KPN and the liability recorded in its balance sheet. The most significant risks are summarized below:

- Asset volatility risk: the pension plans' assets are predominantly invested in equity securities and other return seeking assets and therefore the plans' funding levels are exposed to equity market risks.
- Interest rate risk: a decrease in interest rates will increase the plans' liabilities, although this will be partially offset by an increase in the value of the plans' bond holdings.
- Inflation risk: in the UK the indexation of the accrued benefits is unconditional and is based on a combination of consumer and retail price indices and therefore the UK plan is exposed to inflation risk.
- Life expectancy risk: the plans provide benefits for the life of the members, so increases in life expectancy will result in an increase in the plans' liabilities.

In the UK, Guaranteed Minimum Pension (GMP) is a portion of pension that was accrued by individuals who were contracted out of the State Second Pension prior to 6 April 1997. At present there is an inequality of benefits between male and female members who have GMP. The High Court in the UK ruled in 2018 that equalization will be required for affected defined benefit pension schemes. A number of options can be used to equalize. The estimated cost of equalization at 31 December 2019 and 2018 for the UK plan is EUR 6m, which has been recognized as a past service cost in 2018. However, the cost to the UK plan for equalizing heavily depends on a complex interaction between the benefit design and membership profile as well as the method used to equalize which must be determined by the trustees.

Other

KPN has a number of other funded (insured) plans in the Netherlands and an unfunded transitional early retirement plan (provision of EUR 24m as at 31 December 2019, last payment expected in 2021), which are all closed to new entrants.

Furthermore, with regard to the insured plans, based on Dutch law, KPN could be required to make contributions if participants of these plans require a value transfer to another pension fund or insurer. However, the risk related to these value transfers is limited and therefore no provision has been recognized for these plans.

Provisions for retirement benefit obligations

The provisions for retirement benefit obligations consist of the net defined benefit liability regarding pension plans and early retirement plans which are accounted for as defined benefit plans as described above. See the table on the next page for a specification of the balance sheet position.

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€ million	Defined benefit obligation[2]		Fair value of assets		Net defined benefit liability (asset)	
	2019	2018	2019	2018	2019	2018
Balance at 1 January	**636**	**718**	**-430**	**-500**	**206**	**218**
Included in profit or loss						
Operating expense[1]	-5	-25	9	33	4	8
Interest expense (income)	19	19	-13	-13	6	6
Included in OCI						
Remeasurements loss (gain):						
Actuarial loss (gain)[3]	40	-35	–	–	40	-35
Return on plan assets excluding interest income	–	–	-48	36	-48	36
Effect of movements in exchange rates	21	7	-14	30	7	1
Total	**61**	**-28**	**-62**	**66**	**-1**	**2**
Other						
Employer's contribution[4]	–	–	-28	-28	-28	-28
Benefits paid	-42	-48	42	48	–	–
Balance at 31 December	**670**	**636**	**482**	**-430**	**188**	**206**

1 Operating expenses in 2018 includes a past service cost of EUR 6m regarding the UK plan (see explanation on page 145) and a settlement gain of EUR 2m regarding a supplemental executive retirement plan in the US. Also included in 2018 is a settlement loss of EUR 1m due to due to lump-sum payments to certain participants of the UK and US plans (EUR 29m defined benefit obligations minus EUR 30m plan assets). Service costs were EUR 1m and administrative costs EUR 3m in both 2019 and 2018.
2 The measurement date for all defined benefit plans is 31 December.
3 The actuarial loss (gain) in 2019 and 2018 consists of demographic assumptions (EUR -14m and EUR -10m), financial assumptions (EUR +59m and EUR -27m) and experience adjustments (EUR -5m and EUR +2m).
4 In 2017 and in 2018, EUR 3m lump-sum payments were made for (unfunded) supplemental executive retirement plans in the US. KPN considers these plans terminated although certain former participants are questioning whether the assumptions for the calculation of the lump-sums are in line with the plans' terms.

Defined benefit obligations

Actuarial assumptions

The key actuarial assumptions used in the calculation of the defined benefit obligations are as follows:

	31 December 2019			31 December 2018		
	Getronics UK	Getronics US	Other	Getronics UK	Getronics US	Other
Discount rate (%)	2.0	3.1	1.1	2.8	4.3	1.8
Expected salary increases (%)	N/a	N/a	2.0	N/a	N/a	2.0
Expected benefit increases/indexation (%)	2.1-2.7	N/a	0.3	2.2-3.2	N/a	0.5
Life expectancy for pensioners at retirement age:						
Male	24.2	20.6	21.8	22.7	20.7	21.7
Female	26.2	22.6	23.7	25.0	22.7	23.9

The discount rate is based on yield curves of AA corporate bonds with maturities equal to the duration of the benefit obligations and in the applicable currency. As at 31 December 2019, the (weighted) average duration of the defined benefit obligation was 14 years.
Assumptions regarding life expectancy are based on published statistics and mortality tables that include allowances for future improvement in mortality. The mortality table used in the Netherlands is the projected table AG 2018 which includes projected improvement rates varying by year of birth, corrected for fund specific circumstances. The mortality table used in the UK is the 92% of SAPS S2PXA tables CMI 2018 projection with a 1.25% long-term improvement, and in the US the Pri-2012 Total Dataset with Scale MP-2019. The life expectancy at the age of 65 is expected to increase in the next 20 years by approximately two years in the UK and the US.

Sensitivity analysis

The following table shows the approximate impact on the defined benefit obligation of a change in the key actuarial assumptions of 0.5% and in the case of life expectancy of a change of one year.

€ million	31 December 2019 Increase	31 December 2019 Decrease	31 December 2018 Increase	31 December 2018 Decrease
Discount rate	-43	47	-40	45
Expected salary increases	–	–	–	–
Expected benefit increases	23	-21	20	-18
Life expectancy	29	-29	26	-26

Plan assets
The assets of all defined benefit pension plans as at 31 December 2019 and 2018 comprise of:

€ million	31 December 2019	31 December 2018
Quoted in active markets:		
Equity securities	22%	25%
Fixed income securities[1]	35%	26%
Real estate[2]	0%	0%
Commodities[3]	1%	1%
Other	3%	5%
Other:		
Equity securities	6%	6%
Fixed income securities[1]	11%	14%
Real estate[2]	3%	2%
Other[4]	19%	21%

1 Including inflation-linked bonds (per Standard & Poor's rating).
2 As at 31 December 2019, none of the investments in real estate were located in Europe.
3 Includes investment funds which invest in financial instruments related to commodities such as energy, agricultural products and precious metals.
4 Mainly insurance contracts.

Strategic investment policies
The strategic investment portfolios of the defined benefit plans (before hedging) at year-end 2019 were as follows:

€ million	Getronics UK	Getronics US	Other plans
Equity securities	35%	45%	–
Fixed income securities (including inflation-linked bonds)	35%	25%	–
Other	30%	30%	100%
Total	**100%**	**100%**	**100%**

In both the UK and the US, a roadmap is in place to move to more fixed income exposure as the funded status improves. The Getronics UK pension fund does not hedge interest rate risks, currency risks and equity risks. The Getronics US pension fund does not hedge currency and equity risks, but partially hedges interest rate risk.

As the pension funds mainly invest in the global investment funds, a minor part of these investments could be related to KPN equities. The pension funds do not have direct investments in KPN equities.

Expected contributions and benefits
In 2019, the total employer's contributions and benefit payments for all defined benefit and defined contribution plans amounted to EUR 113m (excluding discontinued operations), consisting of EUR 85m employer's premiums for defined contribution plans, EUR 16m contributions for funded defined benefit plans and EUR 12m payments for unfunded plans.
The amount of employer's contributions in 2020 for the remaining defined benefit pension plans is estimated to be EUR 31m for both funded and unfunded plans. The total amount of employer's premiums to be paid in 2020 for the defined contribution plans is estimated to be EUR 82m.

Accounting policy: Provisions for retirement benefit obligations (pension obligations)

The liability recognized in respect of all pension and early retirement plans that qualify as defined benefit obligation is the present value of the defined benefit obligation less the fair value of plan assets. KPN uses actuarial calculations (projected unit credit method) to measure the obligations and the costs. For the calculation, actuarial assumptions are made about demographic variables (such as employee turnover and mortality) and financial variables (such as future indexation and the discount rate). The discount rate is determined by reference to market rates. These are interest rates of high-quality corporate bonds that are denominated in the currency in which the benefit will be paid and that have terms to maturity approximating the terms of the related liability. A net defined benefit asset may arise where a defined benefit plan has been overfunded. KPN recognizes a net defined benefit asset in such a case only when future economic benefits are available to KPN in the form of a reduction in future contributions or a cash refund. Actuarial gains and losses are recognized immediately in OCI.

Past service costs, curtailments and settlements are recognized immediately in the P&L.
The amount of pension costs included in operating expenses with respect to defined benefit plans consists of service cost, past service costs, curtailments and settlements and administration costs. Net interest on the net defined benefit liability is presented as part of finance costs.
For pension plans that qualify as a defined contribution plan, KPN recognizes contributions as an expense when an employee has rendered service in exchange for those contributions.

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[18] Provisions for other liabilities and charges

€ million	31 December 2019	31 December 2018
Restructuring provision	42	61
Asset retirement obligations	44	51
Other provisions	82	77
Total provisions for other liabilities and charges	**168**	**188**
of which: non-current	105	110
of which: current	**63**	**78**

Statement of changes in provisions

€ million	Personnel	Contractual	Total restructuring	Asset retirement obligation	Other provisions[1]	Total provisions
Balance at 1 January 2018	**48**	**12**	**60**	**41**	**68**	**169**
of which: current portion	**46**	**2**	**48**	**1**	**17**	**66**
Transition impact IFRS 16	–	–10	-10	–	–	-10
Balance at 1 January 2018 restated	**48**	**2**	**50**	**41**	**68**	**160**
of which: current portion restated	**46**	**2**	**48**	**1**	**17**	**66**
Additions	100	2	102	10	12	123
Releases	–	–	–	–	–1	–1
Usage	-90	-2	-92	–	-9	-101
Other movements incl. discontinued operations	–	–	–	–	7	7
Balance at 31 December 2018 restated	**58**	**2**	**61**	**51**	**77**	**188**
of which: current portion restated	**58**	**2**	**60**	**4**	**13**	**78**
Additions	111	4	115	–	13	128
Releases	–	–	–	-1	-3	-4
Usage	-129	-4	-133	-4	-5	-142
Other movements incl. change in consolidation	–	–	–	-2	–	-2
Balance at 31 December 2019	**40**	**2**	**42**	**44**	**82**	**168**
< 1 year	**40**	**1**	**40**	**3**	**20**	**63**
1 - 5 years	**–**	**1**	**1**	**16**	**10**	**27**
> 5 years	**–**	**1**	**1**	**25**	**52**	**78**

1 Includes provisions for claims and litigations, onerous contracts, warranties and employee benefits.

Restructuring provisions

Termination benefits are payable when employment is terminated before the normal retirement date, or whenever an employee accepts redundancy in exchange for these benefits. Termination benefits are recognized when KPN is demonstrably committed either to terminating the employment according to a detailed formal plan without possibility of withdrawal or to providing termination benefits as a result of an, individual and accepted offer made to encourage redundancy. Benefits falling due more than 12 months after 31 December are discounted to present value.

Other long-term employee obligations include jubilee or other long-service employee benefits, long-term disability benefits and, if they are not fully payable within 12 months after the end of the period, bonuses and deferred compensation. The expected costs of these benefits are accrued over the period of employment using an accounting method similar to that for defined benefit pension plans, except that actuarial gains and losses and past-service costs are recognized immediately in the P&L.

Asset retirement obligations

The provision for asset retirement obligations is based on assumptions of the estimated costs of removal, discount rate and estimated period of removal, which vary per type of asset. As defined in the Telecommunications Act, the obligation for landlords to tolerate cables terminates as soon as those cables have been idle for a continuous period of 10 years.
Because the date when the cables will become idle is uncertain and KPN is not able to predict whether and when a landlord will place a request for removal, KPN is not able to make a reliable estimate of the impact and therefore no provision was recognized at 31 December 2019 nor at 31 December 2018.

Accounting policy: Provisions for other liabilities and charges

Provisions for asset retirement obligations, restructuring costs and legal claims are recognized when KPN has a present legal or constructive obligation as a result of past events, and it is more likely than not that an outflow of resources will be required to settle the obligation and the amount can be reliably estimated.

Provisions are measured at the present value of management's best estimate of the expenditure required to settle the present obligation at balance sheet date. The discount rate used to determine the present value reflects current market assessments of the time value of money and the risks specific to the liability.

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[19] Leasing

Right-of-use assets

€ million	Mobile network	Fixed network & data centers	Real estate	Vehicles	Other	Total
Accumulated cost	740	302	547	161	4	1,754
Accumulated depreciation & impairment	-308	-164	-234	-74	-3	-783
Balance as at 1 January 2018	**433**	**138**	**313**	**86**	**2**	**971**
Additions	14	1	7	32	–	54
Remeasurement & lease modifications	6	1	-4	-1	–	2
Depreciation	-51	-21	-37	-38	-1	-148
Impairments	–	–	-1	–	–	-1
Closing net book value	**402**	**119**	**278**	**79**	**1**	**878**
Accumulated cost	757	304	544	156	4	1,766
Accumulated depreciation & impairment	-355	-186	-267	-77	-3	-888
Balance as at 31 December 2018	**402**	**119**	**278**	**79**	**1**	**878**
Additions	36	–	2	34	–	73
Remeasurement & lease modifications	121	4	-1	-3	–	121
Depreciation	-53	-15	-36	-37	-1	-142
Impairments	–	–	2	–	–	2
Change in consolidation[1]	–	-77	–	-8	–	-85
Closing net book value	**506**	**30**	**245**	**64**	**1**	**847**
Accumulated cost	906	138	510	137	4	1,695
Accumulated depreciation & impairment	-400	-108	-265	-72	-3	-848
Balance as at 31 December 2019	**506**	**30**	**245**	**64**	**1**	**847**
Total estimated lease term at commencement of a lease (in years)	5-15	5-20	5-20	5-7	<5	

1 The change in consolidation in 2019 relates to the sale of NLDC B.V. (data centers) and the classification as held for sale of KPN Consulting B.V. (vehicles).

Lease liabilities

€ million	Mobile network	Fixed network & data centers	Real estate	Vehicles	Other	Total
Non-current lease liability	412	143	322	53	1	930
Current lease liability	58	20	33	31	1	142
Balance as at 1 January 2018	**470**	**163**	**354**	**84**	**1**	**1,072**
Additions	14	1	7	32	–	54
Remeasurement & lease modifications	6	1	-7	-2	–	–
Interest	16	6	10	1	–	33
Redemptions	-63	-30	-49	-40	-1	-183
Closing net book value	**443**	**143**	**315**	**75**	**1**	**976**
Non-current lease liability	377	121	282	47	–	827
Current lease liability	66	21	33	28	–	149
Balance as at 31 December 2018	**443**	**143**	**315**	**75**	**1**	**976**
Additions	36	–	2	34	–	73
Remeasurement & lease modifications	120	4	-3	-3	–	119
Interest	15	5	8	1	–	28
Redemptions	-60	-24	-46	-37	-1	-168
Change in consolidation[1]	–	-89	–	-8	–	-97
Closing net book value	**554**	**38**	**276**	**61**	**1**	**930**
Non-current lease liability	477	26	244	37	–	785
Current lease liability	77	12	32	24	–	145
Balance as at 31 December 2019	**554**	**38**	**276**	**61**	**1**	**930**

1 The change in consolidation in 2019 relates to the sale of NLDC B.V. (data centers) and the classification as held for sale of KPN Consulting B.V. (vehicles).

The redemptions reflect the total payments made during the year for the lease fees included in the lease liability. The redemption consists of the repayments of the lease liabilities which are presented in the cash flow from financing activities (2019: EUR 141m, 2018: EUR 149m) and the interest paid during the year (2019: EUR 28m, 2018: EUR 33m) which is part of the cash flow from operating activities.

The maturity analysis of the lease liabilities is disclosed in Note 12.4.

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KPN's lease portfolio consists of mobile network (mostly site rentals and mobile towers), fixed network & data centers (technical buildings), real estate (offices and shops), vehicles and some other leased assets.

The following amounts are recognized in the profit or loss:

€ million	2019	2018
Depreciation right-of-use assets	-142	-148
Impairment (-) or impairment reversal right-of-use assets	2	-1
Gain or loss (-) on early terminations	3	3
Total depreciation & impairments presented in the P&L	**-138**	**-146**
Interest on lease liabilities	-28	-33
Total amount recognized in profit or loss	**-165**	**-179**

The expenses related to short-term vehicle leases (included in employee expenses) are not material. KPN does not apply the low-value exemption and does not have contracts with variable lease payments other than variable lease payments dependent on an index or a rate.

Most of KPN's lease contracts include extension (renewal) or termination options. KPN exercises significant judgement in determining whether these options are reasonably certain to be exercised (refer to Note 2). The assessments are updated annually or when a significant change in the economic circumstances occurs. Periods covered by renewal options deemed reasonably certain or early termination options which are reasonably certain not to be exercised are included in the total lease liability.

A significant number of KPN's contracts have an unlimited number of extension options. Only those deemed reasonably certain are included in the lease term and therefore the lease liability. A reliable estimate of the potential future lease payments related to periods beyond the lease terms reflected on the balance sheet cannot be provided. This affects mostly the mobile and fixed network as well as real estate. Vehicles are generally returned by the end of their term.

KPN as a lessor

KPN acts as a lessor in a limited number of real estate and mobile site contracts, all classified as operating leases. These lessor contracts are not material to KPN Group, individually nor in aggregate. The terms are between one and ten years. All leases include a clause to enable upward revision of the lease fees (annual indexation). Rental income recognized in 2019 amounted to EUR 3m (2018: EUR 3m). The future minimum lease receivable under the non-cancellable operating leases at 31 December 2019 is EUR 5m (31 December 2018: EUR 5m).

Accounting policy: Leases

KPN's main accounting policies on leases where KPN acts as a lessee are disclosed in Note 2.

Leases where KPN as lessor retains a significant portion of the risk and rewards of ownership of the lease asset are classified as operating leases. The assets remain on the balance sheet and are depreciated over the assets' useful life. Lease payments received from lessees are recognized as revenue on a straight-line basis over the lease period.

If KPN acts as a lessor in a finance lease, the transaction is accounted for as a normal sale and the present value of the lease payments is recognized as a receivable. The difference between the gross receivable and the present value of the receivable is deferred and recognized as interest over the lease term.

[20] Contract liabilities, trade and other payables

Trade and other payables

	31 December 2019		31 December 2018 (Restated)	
€ million	Current	Non-current	Current	Non-current
Trade payables	550	–	573	–
Accrued interest	121	–	162	–
Accrued expenses	380	–	420	–
Social security and other taxes payable	192	–	186	–
Other payables	13	12	15	5
Total	**1,256**	**12**	**1,357**	**5**

Part of KPN's suppliers participate in KPN's Supplier Finance Program, which gives these suppliers the opportunity to receive earlier payment (from a financial institution) without modifying KPN's payment terms. Because these payment terms do not deviate from the terms agreed with suppliers who are not participating in this program, the relating liabilities are similarly classified as trade and other payables, and payments are classified as operating cash flow. The Supplier Finance Program does not impact covenants or KPN's access to (future) borrowings from financial institutions.
As at 31 December 2019, the amount of payables for which early payment from third parties was opted for under the Supplier Finance Program amounted to EUR 126m (31 December 2018: EUR 106m).

Accounting policy: Contract liabilities, trade and other payables

Trade and other payables classify as 'borrowings' within KPN's financial liabilities. For the accounting policy, see Note 12.

For the accounting policy regarding contract liabilities, see Note 4.

Contract liabilities

	31 December 2019		31 December 2018 (Restated)	
€ million	Current	Non-current	Current	Non-current
Contract liabilities	228	184	253	206
Of which variable considerations	–	147	–	162

The contract liabilities primarily relate to the consideration received from customers before satisfying performance obligations, such as advances for subscriptions and airtime. KPN recognizes a contract liability for postpaid and prepaid bundled minutes based on the actual usage of these bundles per proposition. The utilization percentage, which is the number of credits used as a percentage of total credits granted for that period, is monitored periodically and based on the historical data.

For the transition phase of projects for business customers which are treated as a separate performance obligation a contract liability is recognized if the amount invoiced is higher than the amount of revenue allocated to these projects. For the mobile connection fees charged to the customer a contract liability is recognized if the connection is not treated as a separate performance obligation.

Contract liabilities are also recognized for variable considerations which are not deemed highly probable. This applies to the billed roaming and MTA tariffs which are regulated and imposed retrospectively and to VAT related to certain mobile consumer propositions.

The introduction of new mobile consumer propositions in August 2016 caused a change in the VAT calculation methodology which resulted in a lower remittance of VAT from August 2016 until December 2018. The view of KPN is not shared by the Dutch tax authorities. KPN concluded, based on the applicable regulations, that a positive outcome of this dispute is not highly probable and therefore recorded a contract liability for the VAT amount. A potential negative outcome of a forthcoming court procedure will lead to a negative cash flow in future years.

In 2019 EUR 20m revenue was recognized from variable considerations related to performance obligations satisfied (or partially satisfied) in previous years (in 2018: nil).

The revenues of the year include the current portion of the contract liability balance at the beginning of the year.

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Notes to the Consolidated Financial Statements

[21] Business combinations and disposals

Changes in consolidation in 2019

On 8 February 2019, KPN completed the sale of iBasis Inc.. KPN classified iBasis as a disposal group held for sale as of 7 March 2018. Given its significance to KPN Group, iBasis qualified as a discontinued operation. See Note 15 for further information on this transaction.

On 30 September 2019, KPN completed the sale of its subsidiary NLDC B.V. to DWS. NLDC was part of KPN's Wholesale segment and was classified as held for sale as of 8 May 2019.

On 29 November 2019, KPN announced and completed the sale of web-hosting subsidiary Argeweb B.V. to TWS Holding B.V..

On 2 December 2019, KPN completed the sale of its International Network Services to GTT Communications, Inc., a global cloud networking provider to multinational clients and operator of a Tier 1 IP network. KPN's international network has been classified as held for sale as of 25 June 2019.

The aggregated book gain of the three transactions amounts to EUR 200m and is included in Other income (see Note 4.2). The gain is income tax exempt (see Note 8).

€ million	Total
Amount of assets and liabilities in the subsidiaries or businesses over which control is lost:	
Property, plant and equipment	54
Intangible assets	15
Right-of-use assets	78
Other non-current assets	6
Trade and other receivables, prepayments and accrued income	14
Net cash and cash equivalents	3
Non-current liabilities	-89
Trade and other payables and accrued expenses	-31
Total net assets	**49**
Transaction and migration costs	**10**
Cash consideration	260
Total consideration	**260**
Book gain	**200**

Cash received from disposal of subsidiaries (net of cash) amounts to EUR 258m, is classified as cash flow from investing activities in the Consolidated Statement of Cash Flows.

Changes in consolidation in 2018

On 9 February 2018, KPN obtained control over StartReady B.V. by exercising the call option to acquire the remaining 85% of the shares of StartReady B.V. The shares were delivered on 26 March 2018. KPN already has had a 15% interest in the company since 2014. StartReady is specialized in the delivery of Skype for Business services.

The acquisition contributed EUR 1.1m to revenue, EUR 2.1m to EBITDA and EUR 0.4m to net profit of KPN in 2018. If the acquisition had taken place at the beginning of the year, impact on revenues, EBITDA and net profit of KPN Group in 2018 would be negligible.

Subsequent adjustments purchase price allocation

In 2019, the purchase price allocation of StartReady was made final without subsequent adjustments.

In 2018, the valuation of the customer bases in the provisional purchase price allocation of Qsight IT/InSpark was adjusted downwards by EUR 14m and the related DTL by EUR 3.5m. As a result, the goodwill was adjusted by EUR 11m.

Purchase price allocation of the acquisitions:

€ million	2018
Recognized amounts of identifiable assets acquired and liabilities assumed:	
Intangible assets[1]	6
Trade and other receivables	1
Net cash and cash equivalents acquired	1
Deferred income tax liabilities	-1
Trade and other payables and deferred income	-1
Total identifiable net assets	**6**
Cash consideration	14
Fair value of the already held minority stake	2
Total consideration	**16**
Goodwill	**11**

1 Including customer bases, valued at EUR 5m.

Accounting policy: Business combinations

KPN uses the acquisition method to account for business combinations. The consideration paid is measured at the fair value of the assets transferred, equity instruments issued and liabilities incurred or assumed at the date of exchange. Identifiable assets acquired and liabilities and contingent liabilities assumed are measured at their fair values at the acquisition date. When a business combination is achieved in stages, any previously held equity interest is remeasured at its acquisition date fair value and any resulting gain or loss is recognized in the P&L.

Contingent considerations are recognized at fair value at acquisition date and subsequent changes to the fair value are recognized in the P&L. Contingent considerations classified as equity are not remeasured and subsequent settlement is counted for within equity.

For each business combination, KPN elects to recognize any non-controlling interest in the acquiree either at fair value or at the proportionate share in the acquiree's net assets. Acquisition-related costs are expensed as incurred.

The excess of the consideration paid, non-controlling interests recognized and the acquisition date fair value of any previous equity interests in the acquiree over the fair value of KPN's share of the net assets acquired is recorded as goodwill. If negative goodwill occurs (bargain purchase), the difference is recognized directly in the P&L.

[22] Commitments, contingencies and legal proceedings

Commitments

€ million, due by period	Less than 1 year	1–5 years	More than 5 years	Total 31 December 2019	Total 31 December 2018 (Restated)
Capital and purchase commitments	829	160	41	1,029	1,027
Guarantees and other	–	10	130	140	139
Total commitments	**829**	**170**	**171**	**1,170**	**1,166**

The capital and purchase commitments mainly relate to minimum contractual obligations with regard to network operations, mobile handsets and telco services, and lease contracts that have not yet commenced.

Guarantees consist of financial obligations of group companies under certain contracts guaranteed by KPN. A total amount of EUR 140m relates to parent guarantees (2018: EUR 139m).

Contingent liabilities

Legal and tax proceedings

KPN is involved in a number of legal and tax proceedings that have arisen in the ordinary course of its business, including commercial, regulatory or other proceedings. KPN periodically carefully assesses the likelihood that legal and tax proceedings may lead to a cash outflow, and recognizes provisions in such cases/matters if and when required.
However, the outcome of legal proceedings can be difficult to predict with certainty and KPN can offer no assurances in this regard. In some cases, the impact of a legal proceeding may be more strategic than financial and such impact cannot properly be quantified. Below is a description of legal proceedings or contingent liabilities that could have a material impact for KPN.

Idle cables

See Note 18 for a contingent liability related to idle cables and the accounting policy of provisions.

Indemnification

In KPN's Articles of Association and in a further decision by the Board of Management, which was approved by the Supervisory Board, KPN has indemnified the members and former members of KPN's Board of Management and Supervisory Board, as well as a number of KPN's officers and directors and former officers and directors, against liabilities, claims, judgments, fines and penalties incurred by such officer or director as a result of any threatened, pending or completed action, investigation or proceeding (whether civil, criminal or administrative) brought by a third party in relation to acts or omissions in or related to their capacity as officer or director.

The indemnification does not apply to claims and expenses reimbursed by insurers, nor to an officer or a director adjudged to be liable for willful misconduct ('opzet') or intentional recklessness ('bewuste roekeloosheid').

Consolidated Financial Statements

[23] Related-party transactions

KPN considers none of the related-party transactions to be material on an individual basis. Transactions between group companies are not included in the description as these are eliminated in the Consolidated Financial Statements.

Transactions with shareholders

On 11 February 2020, América Móvil, S.A.B. de C.V. (AMX) published in its fourth quarter 2019 report that it owned 16.1% of KPN's ordinary share capital at 31 December 2019. The total value of sales transactions by the continuing operations of KPN in 2019 with AMX, its subsidiaries and associated companies amounted to less than EUR 1m (2018: EUR 3m) and the total value of purchase transactions amounted to EUR 1m (2018: EUR 1m). The total trade receivables and payables at 31 December 2019 and 2018 amounted to less than EUR 1m.

Other shareholding equaling or exceeding 3% of the issued capital:

- On 31 December 2019, Norges Bank notified the AFM that it held 3.17% of the shares and voting rights related to KPN's ordinary share capital.
- On 27 November 2019, BlackRock, Inc. notified the AFM that it held 4.13% of the shares and 4.90% of the voting rights related to KPN's ordinary share capital.
- On 13 August 2019, Capital Research and Management Company notified the AFM that it held 5.01% of the voting rights related to KPN's ordinary share capital.
- On 5 August 2019, Amundi Asset Management notified the AFM that it held 3.12% of the shares and voting rights related to KPN's ordinary share capital.

To KPN's knowledge, no other shareholder owned 3% or more of KPN's issued share capital as at 31 December 2019. KPN did not enter into agreements with AMX or other shareholders which could have a material impact on KPN's Financial Statements.

Transactions with associated companies

The total value of sales transactions and purchase transactions by the continuing operations of consolidated KPN companies with associated companies and other non-consolidated companies in 2019 amounted to approximately EUR 31m and EUR 1m respectively (2018: EUR 24m and EUR 1m respectively). The total trade receivables and payables as of 31 December 2019 amounted EUR 10m and less than EUR 1m respectively (31 December 2018: EUR 4m and less than EUR 1m respectively).

Transactions with directors and related parties

For details of the relationship between directors and the company, see the Remuneration Report on pages 86 to 94 of this Integrated Annual Report. Directors in this respect are defined as key management and relate to those having authority and responsibility for planning, directing, and controlling the activities of an entity, either directly or indirectly. At KPN, key management consists of the members of the Board of Management and Supervisory Board.

The company was not a party to any material transactions, or proposed transactions, in which members of the Supervisory Board or Board of Management or close members of their families had a direct or indirect material interest.

The total value of sales transactions by KPN's continuing operations in 2019 with parties in which members of the Supervisory Board or Board of Management or close members of their families had a direct or indirect material interest amounted to EUR 7m (2018: EUR 9m) and the total value of purchase transactions amounted to EUR 3m (2018: EUR 14m), all in the ordinary course of business. The total trade receivables and payables as at 31 December 2019 amounted to EUR 1m and EUR 2m respectively (31 December 2018: EUR 1m and EUR 2m respectively).

[24] Legal structure

Name of significant subsidiaries and other principal interests:

KPN B.V.

- ApplicationNet B.V.
- CAM IT Solutions B.V.
- DearBytes B.V.
- GroupIT B.V.
- InSpark Holding B.V.
- KPN Consulting B.V.
- KPN Finance B.V.
- KPN Internedservices B.V.
- KPN Security B.V.
- Reggefiber Group B.V.
- Solcon Internetdiensten B.V.
- Telfort Zakelijk B.V.
- XS4ALL Internet B.V.
- Yes Telecom Netherlands B.V.

KPN Mobile N.V.

- KPN Mobile International B.V.

KPN Ventures B.V.

Getronics B.V.

- Getronics Finance Holdings B.V.
  - Getronics Pensions UK Ltd.
  - Getronics US Operations Inc.

The country of incorporation of all entities is the Netherlands, except Getronics Pensions UK Ltd. which is incorporated in the United Kingdom and Getronics US Operations Inc. which is incorporated in the United States of America.
The percentage ownership/voting interest of all entities is 100%.

[25] Proposed appropriation of result

On outstanding Class B preferred shares, a dividend is paid out equal to the average of the 12-month Euribor increased by 1%. If the 12-month Euribor is no longer determined, the dividend on preference shares will be calculated based on the yield on state loans. Subsequently, subject to the approval of the Supervisory Board, the Board of Management will determine what proportion of net income remaining after payment of the dividend on any Class B preferred shares will be appropriated to the reserves. The part of the profit remaining after the appropriation to the reserves shall be at the disposal of the AGM. No Class B preferred shares were outstanding on 31 December 2019.

In August 2019, a regular interim dividend of EUR 4.2ct per ordinary share was paid (total amount of EUR 176m). The Board of Management, with the approval of the Supervisory Board, will propose to the AGM to pay a final regular dividend of EUR 8.3ct per ordinary share in respect of 2019 (total amount of EUR 348m).

The part of the profit remaining after distribution of the proposed final dividend is EUR 102m and will be appropriated to the reserves, which will be proposed to the AGM.

[26] Subsequent event

Copper phase out in fiber areas

On 21 February 2020, KPN announced to phase out its copper network for existing addresses where fiber service delivery is currently available, and for the addresses in every already announced fiber roll-out project under construction, as per begin 2023. The financial impact for future periods relates to higher costs for depreciation, which are estimated as limited.

Corporate Financial Statements

Corporate Statement of Profit or Loss

For the year ended 31 December

€ million	Notes	2019	2018 (Restated)
Total revenues and other income			
Other operating expenses		-16	-11
Total operating expenses		**-16**	**-11**
Operating profit		**-16**	**-11**
Finance income		24	54
Finance costs		-273	-309
Other financial results		-99	-5
Intercompany interest (net)		-583	-805
Financial income and expenses	**[A]**	**-930**	**-1,065**
Income from subsidiaries		1,308	1,183
Profit before income tax		**361**	**107**
Income taxes	[B]	265	174
Profit for the year		**626**	**281**

Corporate Statement of Financial Position

Assets

€ million	Notes	31 December 2019	31 December 2018 (Restated)
Non-current assets			
Financial fixed assets			
Investments in subsidiaries		15,571	14,279
Loan to subsidiary		80	80
Derivatives		236	185
Deferred taxes		698	671
Other fixed financial assets		97	181
Total non-current assets	**[B]**	**16,682**	**15,396**
Current assets			
Accounts receivable from subsidiaries	[F]	1,406	634
Other receivables and accrued income		26	30
Equity investments measured at fair value through other comprehensive income[1]		–	449
Derivatives		22	–
Other current financial assets		276	50
Cash and cash equivalents		637	463
Total current assets		**2,366**	**1,627**
Total assets		**19,048**	**17,023**

1 Consisted of KPN's stake in TEFD which was disposed of in 2019.

Corporate Financial Statements

Corporate Statement of Financial Position

Equity and liabilities

€ million	Notes	31 December 2019	31 December 2018 (Restated)
Equity			
Subscribed capital stock		168	168
Additional paid-in capital		8,445	8,445
Treasury shares reserve		-79	-83
Hedge reserve		-240	-355
Legal reserves	[C]	166	168
Retained earnings	[C]	-7,076	-6,747
Equity attributable to holders of perpetual capital securities		496	–
Profit (loss) current year		626	281
Total equity attributable to equity holders		**2,507**	**1,877**
Provisions			
Provisions for retirement benefit obligations		24	33
Other provisions		24	22
Total provisions	**[D]**	**48**	**55**
Non-current liabilities			
Loans	[E]	13,148	13,738
Derivative financial instruments		136	302
Other long-term liabilities		76	50
Total non-current liabilities		**13,359**	**14,091**
Current liabilities			
Accounts payable to subsidiaries	[F]	1,962	147
Loans	[E]	937	572
Derivative financial instruments		4	16
Other current liabilities	[G]	108	99
Accruals and deferred income		124	165
Total current liabilities		**3,135**	**1,000**
Total equity and liabilities		**19,048**	**17,023**

Notes to the Corporate Financial Statements

The principles for the recognition and measurement of assets and liabilities and determination of the result (hereafter referred to as 'Accounting policies') of the Corporate Financial Statements of Koninklijke KPN N.V. are the same as those applied to the Consolidated Financial Statements under IFRS (applying the option provided in Article 362 sub 8, Part 9, Book 2 of the Dutch Civil Code). The Consolidated Financial Statements have been prepared in accordance with the IFRS (see Notes to the Consolidated Financial Statements).

As of 1 January 2019, KPN implemented IFRS 16 Leases. This standard introduces on balance sheet accounting for almost all leases. For lessees, the distinction between financial leases ('on balance') and operating leases ('off balance') is removed. For lessors, the accounting requirements remain substantially unchanged and the two types of leases remain in place. IFRS 16 had a significant impact on KPN as a lessee. KPN has adopted the standard using the full retrospective approach and restated the 2018 financial information for comparison purposes in these 2019 Corporate Financial Statements. A cumulative transitional adjustment was recorded on 1 January 2018, the date of initial application, resulting in a decrease in equity of EUR 68m. The impact of new IFRS standards is described in Note 2 to the Consolidated Financial Statements and has a corresponding effect on the Corporate Financial Statements.

As of 1 January 2019, IAS 12 Income Taxes has been amended which clarifies that an entity must recognize all income tax consequences of dividends in profit or loss, other comprehensive income or equity, depending on where the entity recognized the originating transaction or event that generated the distributable profits giving rise to the dividend. Therefore, the income tax gain on the EUR hybrid bond dividends has been recognized in the Statement of Profit or Loss. The 2018 tax expense has been restated (EUR 12m additional tax benefit).

Investments in consolidated subsidiaries are measured at net asset value. Net asset value is based on the measurement of assets (including goodwill), provisions and liabilities and the determination of profit based on the principles applied in the Consolidated Financial Statements.
Expected credit losses, if any, with respect to loans granted to and receivables from consolidated subsidiaries are not recognized in these Corporate Financial Statements, which is in line with RJ 100.107a.

[A] Financial income and expenses

€ million	2019	2018
Finance income	**24**	**54**
Interest on borrowings	-269	-306
Other	-4	-3
Finance costs	**-273**	**-309**
Amortizable part of hedge reserve	-17	-15
Amortization discontinued fair value hedges	38	39
Derivative financial instruments not qualified for hedge accounting	-29	-31
Bond tender premiums and hedge unwinds	-95	–
Other	4	2
Other financial results	**-99**	**-5**
Intercompany interest (net)	**-583**	**-805**
Total	**-930**	**-1,065**

Finance income included a dividend received from Telefónica Deutschland of EUR 24m (2018: EUR 54m).
In 2019, Interest on borrowings decreased by EUR 37m, which was mainly related to regular bond redemptions during the year.

Other financial results increased by EUR 94m (higher net cost), mainly due to the bond tender that KPN completed on 15 November 2019, repurchasing 40.5% of its outstanding 8.375% USD 1bn senior bonds due in October 2030. The tender and unwind of associated hedges, resulted in a net charge of EUR 95m. This was partially offset by the ineffectiveness of continued hedge relationships (EUR 9m gain).

Intercompany interest (net) mainly includes interest of 8.5% on an intercompany loan provided by KPN Mobile N.V., part of loans payable to subsidiaries (Note F).

Corporate Financial Statements

[B] Non-current assets

€ million	Investments in subsidiaries companies	Loan to subsidiary[1]	Derivatives	Deferred taxes	Other financial fixed assets	Total
Balance at 1 January 2018 restated	**18,363**	**–**	**168**	**949**	**119**	**19,599**
Exchange rate differences	7	–	–	–	–	7
Income from group companies after taxes	1,183	–	–	–	–	1,183
Increase due to new loans	–	80	–	–	–	80
Decrease due to settlement	-5,284	–	–	–	–	-5,284
Capital contributions	4	–	–	–	–	4
Fair value adjustments	–	–	17	–	–	17
Other	6	–	–	-278	62	-210
Total changes	**-4,084**	**80**	**17**	**-278**	**62**	**-4,203**
Balance at 31 December 2018 restated	**14,279**	**80**	**185**	**671**	**181**	**15,396**
Exchange rate differences	-20	–	–	–	–	-20
Income from group companies after taxes	1,308	–	–	–	–	1,308
Capital contributions	1	–	–	–	–	1
Received dividend	-2	–	–	–	–	-2
Fair value adjustments	–	–	51	–	–	51
Other	5	–	–	27	-84	-52
Total changes	**1,292**	**–**	**51**	**27**	**-84**	**1,286**
Balance at 31 December 2019	**15,571**	**80**	**236**	**698**	**97**	**16,682**

1 Loan to KPN Finance B.V., which is repayable latest on 28 September 2023 and is subordinated to all other loans, obligations and creditors. Annual interest is 4.6%.

Taxation

The Corporate Financial Statements on behalf of Koninklijke KPN N.V. are prepared as if the company is independently subject to corporate income tax. Thus, excluding the offset of profits within the tax group of which the entity is the parent. As a result, the company reports a tax benefit for the tax deductible interest and no tax on the result of consolidated entities as the tax of these entities is booked at the level of the entity itself.

The company's deferred tax asset represents the future tax relief on taxable profits (within the tax group) due to available losses and is higher than reported on consolidated level, since the asset can be offset against deferred tax liabilities reported in other entities that are part of the same tax group.

[C] Equity attributable to equity holders

For a breakdown of equity attributable to equity holders, refer to the Consolidated Statement of Changes in Equity and the Notes thereto. On 8 November 2019, KPN issued a EUR 500m hybrid bond with a 2.00% coupon and a perpetual maturity. This bond is classified as equity and valued at net proceeds (see Note 12.2).

Legal reserves

Legal reserves (net of tax) are presented below:

€ million	Revaluation reserve property, plant and equipment	Cumulative translation adjustments	Capitalized software development costs	Fair value reserve equity investments	Other	Total
Balance at 1 January 2018	**20**	**36**	**82**	**13**	**18**	**169**
Addition/release (-) retained earnings	-2	–	–	-3	–	-5
Exchange rate differences	–	4	–	–	–	4
Balance at 31 December 2018	**18**	**40**	**82**	**10**	**18**	**168**
Addition/release (-) retained earnings	-2	–	25	-1	-3	19
Exchange rate differences	–	-21	–	–	–	-21
Balance at 31 December 2019	**16**	**19**	**107**	**9**	**15**	**166**

Pursuant to Dutch law, limitations exist relating to the distribution of equity attributable to equity holders. Such limitations relate to the subscribed capital stock as well as to legal reserves required by Dutch law as presented above. Dutch law also requires that in determining the amount for distribution, the company's ability to continue to pay its debt must be taken into account. The total distributable reserves, which include the perpetual capital securities, amounted to EUR 2,173m at 31 December 2019 (2018: EUR 1,541m).

Retained earnings

Movements in retained earnings were as follows:

€ million	2019	2018
Balance at 1 January	**-6,747**	**-6,341**
Transition impact IFRS 16	–	-68
Balance at 1 January restated	**-6,747**	**-6,409**
Profit of previous year	281	390
Coupon perpetual hybrid bond	–	-62
Redemption of hybrid bond	–	-11
Dividend ordinary shares	-512	-529
Actuarial gain/loss pensions and other post-employment plans (net of tax)	8	-1
Fair value adjustment equity investments	-84	-116
Release/addition legal reserves (except cumulative translation adjustments)	-19	5
Share-based compensation	-2	-15
Balance at 31 December	**-7,076**	**-6,747**

Retained earnings can be reconciled with the Consolidated Statement of Financial Position as follows:

€ million	2019	2018
Retained earnings as per Consolidated Statement of Financial Position	**-6,302**	**-6,338**
Revaluation reserve	-16	-18
Capitalized software development costs	-107	-82
Fair value reserve equity investments	-9	-10
Other non-distributable reserves	-15	-18
Profit for the year	-626	-281
Retained earnings as per Corporate Statement of Financial Position	**-7,076**	**-6,747**

Corporate Financial Statements

[D] Provisions

Movements in provisions were as follows:

€ million	Retirement benefit obligations	Other provisions	Total
Balance at 1 January 2018	**46**	**23**	**69**
Additions/releases to income	2	2	4
Additions/releases in OCI	2	–	2
Usage	-17	-3	-20
Balance at 31 December 2018	**33**	**22**	**55**
Additions/releases to income	1	5	6
Additions/releases in OCI	2	–	2
Usage	-12	-3	-15
Balance at 31 December 2019	**24**	**24**	**48**

The provisions for retirement benefit obligations relate to early retirement plans (see Note 17 to the Consolidated Financial Statements).

[E] Loans

Non-current loans include bonds outstanding for EUR 5,117m (2018: EUR 5,922m) and hybrid bonds outstanding for EUR 532m (2018: EUR 967m) - see also Note 12 to the Consolidated Financial Statements. Current loans include bonds outstanding for EUR 937m.

Non-current loans also include loans from subsidiaries for EUR 7,499m (2018: EUR 6,849m). This mainly relates to a loan payable to KPN Mobile N.V., which bears interest of 8.5% and must be repaid in full, including accrued interest, in 2034. The loan is subordinated to the unsecured and unsubordinated creditors of Koninklijke KPN N.V. (KPN), but ranks ahead of the hybrid capital securities issued by KPN as long as by their terms these hybrid capital securities are expressed to rank pari passu with the preference share of KPN and the preference shares issued by KPN (if any). There are no loans from subsidiaries with maturity dates in 2020.

[F] Accounts receivable from and accounts payable to subsidiaries

Koninklijke KPN N.V. operates a cash pool for the KPN group which leads to accounts receivables from and accounts payable to subsidiaries. In 2019, accounts receivable from subsidiaries increased significantly, mainly due to Capex and other investments made by subsidiaries. Accounts payable to subsidiaries also increased significantly, mainly due to cash flows from operating activities generated by subsidiaries. At 31 December 2018, intercompany receivables and payables were low due to a settlement. Accounts payable to subsidiaries at 31 December 2019 consists of interest to be paid to KPN Mobile N.V. (EUR 158m) and is offset by an intercompany current income tax position of EUR 300m.
Most of these current accounts have indefinite duration. The interest is determined annually and based on the 12-month Euribor increased by 0.15% and a risk premium attached by the market to the specific KPN credit risk.

[G] Other current liabilities

€ million	31 December 2019	31 December 2018
Social security and other taxes payable	108	95
Bank overdrafts	–	4
Total	**108**	**99**

[H] Commitments and contingencies

Commitments by virtue of guarantees amounted to EUR 140m (2018: EUR 139m).

KPN has issued several declarations of joint and several liabilities for various group companies in compliance with Article 403, Book 2 of the Dutch Civil Code. These declarations of joint and several liabilities for group companies are included in a complete list of subsidiaries and participating interests, which is available at the offices of the Chamber of Commerce in The Hague.

Directors' remuneration

See Note 5 to the Consolidated Financial Statements on employee benefits.

Rotterdam, 21 February 2020

Board of Management	Supervisory Board
Joost Farwerck	Duco W. Sickinghe
Jan Kees de Jager	Peter A.M. van Bommel
Chris Figee	Carlos J. García Moreno Elizondo
Jean-Pascal Van Overbeke	Derk J. Haank
Marieke Snoep	Peter F. Hartman
Babak Fouladi	Edzard J.C. Overbeek
Hilde Garssen	Jolande C.M. Sap
	Claudia J.G. Zuiderwijk

Other Information

Combined Independent Auditor's Report

Dear Shareholders and members of the Supervisory Board of Koninklijke KPN N.V. (KPN),

Please find below the main conclusions and main features of our audit and review. For the full text of the independent auditor's report, which includes the assurance report on sustainability, please see the next pages.

Summary

Conclusions

Object of audit or review	Outcome of our work performed	Level of assurance
Financial statements 2019 (consolidated and corporate)	Unqualified conclusion	Reasonable (audit)
Sustainability information 2019: CO_2e emission data 2019 (Scope 1 and 2) of own operations in the Netherlands and the underlying energy data	Unqualified conclusion	Reasonable (audit)
Sustainability information 2019 in selected chapters and appendices	Unqualified conclusion	Limited (review)
Other information, including the Reports by the Board of Management and the Supervisory Board	No material misstatements to report	

Main features of our audit & review

What we have done	Scope of our work	Materiality	Key audit & assurance matters
Audit of financial statements 2019	Significant segments in the Netherlands, including 'Consumer', 'Business', 'Wholesale' and 'Network, Operations and IT'	EUR 45 million, which represents 2.0% of EBITDA AL	• Valuation (in)tangible assets, incl. goodwill • Valuation deferred tax assets • IFRS16 • Reliability of IT systems, including security and cybercrime
Audit of CO_2e emission data 2019 (Scope 1 and 2) own NL operations and the underlying energy data	Netherlands	5% deviation per item	• No areas of specific focus
Review of sustainability information for 2019	Selected chapters and appendices	Specific materiality levels for each element of the sustainability information in scope	• CO_2e Scope 3 estimates, energy savings by customers • RepTrak pulse score, Net Promoter Score
Procedures for Other information, including Reports by the Board of Management and Supervisory Board	Full reports	Similar materiality as our audit or review scopes.	• No areas of specific focus

Other Information

Combined independent auditor's report on the 2019 financial statements and sustainability information

Our conclusions
We have audited the financial statements 2019 of KPN based in Rotterdam. The financial statements include the Consolidated Financial Statements and the Corporate Financial Statements.

In our opinion:
- the accompanying Consolidated Financial Statements give a true and fair view of the financial position of KPN as at 31 December 2019 and of its result and its cash flows for 2019 in accordance with International Financial Reporting Standards as adopted by the European Union (EU-IFRS) and with Part 9 of Book 2 of the Dutch Civil Code;
- the accompanying corporate financial statements give a true and fair view of the financial position of KPN as at 31 December 2019 and of its result for 2019 in accordance with Part 9 of Book 2 of the Dutch Civil Code;

We have reviewed the sustainability information for the year 2019 of KPN. A review is aimed at obtaining a limited level of assurance. Furthermore, we have audited the CO_2e emission data 2019 (Scope 1 and 2) of own operations in the Netherlands and the underlying energy data. The scope of our engagements is described in the section Our Scope.

Based on our review procedures performed, nothing has come to our attention that causes us to believe that the sustainability information in scope does not present, in all material respects, a reliable and adequate view of KPN's policy and business operations with regard to sustainability and the thereto related events and achievements for 2019, in accordance with the GRI Standards (comprehensive option) and the supplemental KPN reporting criteria as disclosed in Appendix 3: Transparency, materiality and stakeholder engagement (hereinafter: Transparency) of the Integrated Annual Report.

In our opinion, the CO_2e emission data 2019 (Scope 1 and 2) of own operations in the Netherlands and the underlying energy data as presented on page 50 of the Integrated Annual Report are prepared, in all material respects, in accordance with the Sustainability Reporting Standards of the Global Reporting Initiative (GRI Standards) (comprehensive option) and the applied supplemental KPN reporting criteria as disclosed in Appendix 3: Transparency, of the Integrated Annual Report.

Based on the procedures performed required by Part 9 of Book 2 of the Dutch Civil Code and the Dutch Standard 720, we conclude that the other information included in the Integrated Annual Report, including the Reports by the Board of Management and Supervisory Board:
- Is consistent with the financial statements and does not contain material misstatements;
- Contains the information as required by Part 9 of Book 2 and section 2:135b of the Dutch Civil Code.

Basis for our conclusions
We performed our assurance engagements in accordance with Dutch law, including the Dutch Standards on Auditing and the Dutch Standard 3810N, "Assurance engagements relating to sustainability reports", which is a specified Dutch Standard that is based on the International Standard on Assurance Engagements (ISAE) 3000 "Assurance Engagements Other Than Audits or Reviews of Historical Financial Information". Our responsibilities under those standards are further described in the section Our responsibilities in this report.

We believe the assurance evidence we have obtained is sufficient and appropriate to provide a basis for our conclusions.

Our independence
We are independent of KPN in accordance with the EU Regulation on specific requirements regarding statutory audit of public-interest entities, the Wet toezicht accountantsorganisaties (Wta, Audit firms supervision act), the Verordening inzake de onafhankelijkheid van accountants bij assurance-opdrachten (ViO, Code of Ethics for Professional Accountants, a regulation with respect to independence) and other relevant independence regulations in the Netherlands. This includes that we do not perform any activities that could result in a conflict of interest with our independent assurance engagements. Furthermore, we have complied with the Verordening gedrags- en beroepsregels accountants (VGBA, Dutch Code of Ethics).

Reporting criteria

The information in the scope of our engagements needs to be read and understood together with the reporting criteria. KPN is solely responsible for selecting and applying these reporting criteria, taking into account applicable law and regulations related to reporting. The reporting criteria used for the preparation of the Integrated Annual Report are described below.

The absence of an established practice on which to draw, to evaluate and measure sustainability information allows for different, but acceptable, measurement techniques and can affect comparability between entities and over time.

Consolidated Financial Statements:	International Financial Reporting Standards as adopted by the European Union (EU-IFRS) and Part 9 of Book 2 of the Dutch Civil Code.
Corporate Financial Statements, Report by the Board of Management and the Supervisory Board:	Part 9 of Book 2 of the Dutch Civil Code.
Sustainability information including the CO_2e emission data 2019 (Scope 1 and 2) and the underlying energy data:	GRI Standards (comprehensive option) and the applied supplemental reporting criteria as disclosed in Appendix 3: Transparency of the Integrated Annual Report. These criteria include the Greenhouse Gas Protocol (WRI/WBCSD).

Our scope

Our engagements scope

The Integrated Annual Report 2019 (hereafter: the Report) of KPN consists of the financial statements and other information, including Reports by the Board of Management and Supervisory Board, that provides altogether an overview of the policy, activities, events and performances related to both the financial position and the sustainable development of KPN during reporting year 2019. The following information in the Report has been in scope for our assurance engagements:

- The Consolidated Financial Statements, comprising:
  - The Consolidated Statement of Financial Position as at 31 December 2019;
  - The Consolidated Statements of Profit or Loss, Other Comprehensive Income, Changes in Group Equity and Cash Flows for 2019;
  - The Notes comprising a summary of the significant accounting policies and other explanatory information.

- The corporate financial statements, comprising:
  - The Corporate Statement of Financial Position as at 31 December 2019;
  - The Corporate Statement of Profit or Loss for 2019;
  - The Notes comprising a summary of the accounting policies and other explanatory information.

- The sustainability information in scope comprising:
  - Reasonable assurance – The CO_2e emission data 2019 (Scope 1 and 2) of own operations in the Netherlands and the underlying energy data as presented on page 50 of the Report;
  - Limited assurance - The sustainability information in the following chapters and appendices:
    - Chapters: 'KPN at a glance', 'The value we create' and 'Tax and regulation';
    - Appendices: Appendix 2, 3, 6, 7 and 9. This includes Appendix 6: Social figures, Appendix 7: Environmental figures and Appendix 9: GRI Index, which are available on the website of KPN.

- The other information, including the Reports by the Board of Management and Supervisory Board and the Remuneration Report required by Part 9 of Book 2 and section 2:135b of the Dutch Civil Code.

Limitations to the scope of our assurance engagements

The sustainability information contains prospective information, such as ambitions, strategy, plans, targets, expectations and estimates. Inherent to prospective information, the actual future results are uncertain. We do not provide any assurance on the assumptions and achievability of prospective information in the sustainability information.

The references to external sources or websites in the sustainability information are not part of the sustainability information as reviewed by us, except for Appendix 6: Social figures, Appendix 7: Environmental figures and Appendix 9: GRI index, which are available on the website of KPN. We therefore do not provide assurance on this information.

Our scope for the group audit of the financial statements

KPN is head of a group of entities, both in the Netherlands and abroad. The Dutch entities and segments thereby form the majority of the business. The financial information of all these entities has been included in the Consolidated Financial Statements.

Because we are ultimately responsible for the opinion, we are also responsible for directing, supervising and performing the group audit. In this respect we have determined the nature and extent of the audit procedures to be carried out for group entities. Decisive were the size and/or the risk profile of the group entities or operations. On this basis, we selected group entities for which an audit or review had to be carried out on the complete set of financial information or specific items.

Our group audit mainly focused on the more significant segments in the Netherlands, including 'Consumer', 'Business', 'Wholesale' and 'Network, Operations and IT'. We performed full scope audit procedures on the financial information of these segments.

At other group entities we performed review procedures or specific audit procedures. The group consolidation, financial disclosures and a number of complex items were audited by the group engagement team at the company's head office. These included revenue assurance, purchase price allocation, taxation, fixed assets and goodwill impairment, pensions, derivative financial instruments, hedge accounting and share-based payments. We involved several EY specialists to assist the audit team, including specialists from our tax, valuations, actuarial and treasury departments.

By performing audit procedures at segment and at corporate level as mentioned above, we have been able to obtain sufficient and appropriate audit evidence about the group's financial information to provide an opinion about the Consolidated Financial Statements.

Other Information

Our focus on fraud and non-compliance with laws and regulations

Our responsibility
Although we are not responsible for preventing fraud or non-compliance and cannot be expected to detect non-compliance with all laws and regulations, it is our responsibility to obtain reasonable assurance that the financial statements, taken as a whole, are free from material misstatement, whether caused by fraud or error.
Non-compliance with laws and regulations may result in fines, litigation or other consequences for the company that may have a material effect on the financial statements.

Our audit response related to fraud risks
In order to identify and assess the risks of material misstatements of the financial statements due to fraud, we obtained an understanding of KPN and its environment, including KPN's internal control relevant to the audit and in order to design audit procedures that are appropriate in the circumstances. As in all of our audits, we addressed the risk of management override of internal control. We do not audit internal control per se for the purpose of expressing an opinion on the effectiveness of the company's internal control.

We considered available information and made enquiries of relevant executives, directors (including internal audit, legal, compliance, human resources and segment directors) and the supervisory board. As part of our process of identifying fraud risks, we evaluated fraud risk factors with respect to financial reporting fraud, misappropriation of assets and bribery and corruption in close co-operation with our forensic specialists.

We evaluated the design and the implementation and, where considered appropriate, tested the operating effectiveness, of internal controls that mitigate fraud risks. In addition, we performed procedures to evaluate key accounting estimates for management bias in particular relating to important judgment areas and significant accounting estimates as disclosed in Note 2 to the financial statements. We have also used data analysis to identify and address high-risk journal entries.

We incorporated elements of unpredictability in our audit. We considered the outcome of our other audit procedures and evaluated whether any findings were indicative of fraud or non-compliance. If so, we reevaluate our assessment of fraud risk and its resulting impact on our audit procedures.

Our audit response related to risks of non-compliance with laws and regulations
We assessed factors related to the risks of non-compliance with laws and regulations that could reasonably be expected to have a material effect on the financial statements from our general industry experience, through discussions with the management board, reading minutes, inspection of internal audit and compliance reports, and performing substantive tests of details of classes of transactions, account balances or disclosures.

We also inspected lawyers' letters and correspondence with regulatory authorities and remained alert to any indication of (suspected) non-compliance throughout the audit. Finally, we obtained written representations that all known instances of non-compliance with laws and regulations have been disclosed to us.

Our focus on going concern
In order to identify and assess the risks of going concern and to conclude on the appropriateness of management's use of the going concern basis of accounting, we consider based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the company's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion.

Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause a company to cease to continue as a going concern.

Materiality

General

The scope of our assurance procedures is influenced by the application of materiality. Our assurance engagements aim to provide assurance about whether the financial statements and the sustainability information in scope are free from material misstatement. Misstatements may arise due to fraud or error. They are considered to be material if, individually or in the aggregate, they could reasonably be expected to influence the (economic) decisions of users taken on the basis of the Report. The materiality affects the nature, timing and extent of our assurance procedures and the evaluation of the effect of identified misstatements on our conclusions.

Financial statements

For the audit of the financial statements our considerations regarding the materiality are as follows.

Materiality	EUR 45,000,000
Benchmark used	2.0% of adjusted earnings before interest, tax, depreciation and amortization after lease (EBITDA AL).
Additional explanation	The users of the financial statements of a for-profit entity typically focus on operating performance, particularly profit before tax. Over the past years KPN's profit before tax heavily fluctuated, resulting from the impact of the discontinuance of operations and other non-recurring transactions. Furthermore, we note that in KPN's external communications, earnings before interest, tax, depreciation and amortization after lease (EBITDA AL) is commonly used to report on financial performance. Considering these aspects, we have concluded that EBITDA AL is the most appropriate and stable benchmark for KPN to base our materiality upon. The materiality is thereby set at EUR 45,000,000, using a percentage of 2.0%, which is at the lower end of a generally accepted range. Last year we used the same percentage and amount.

We have also taken into account misstatements and/or possible misstatements that in our opinion are material for the users of the financial statements for qualitative reasons.

We agreed with the Supervisory Board that misstatements in the financial statements in excess of EUR 2.25 million, would be reported to them, as well as smaller misstatements that in our view must be reported on qualitative grounds.

Sustainability information

Based on our professional judgment we determined materiality levels for each part of the sustainability information and for the sustainability information as a whole. When evaluating our materiality levels, we have taken into account quantitative and qualitative considerations as well as the relevance of information for both stakeholders and the organization.

We agreed with the Supervisory Board that misstatements which are identified during our assurance engagement and which in our view must be reported on quantitative or qualitative grounds, would be reported to them.

Key audit & assurance matters

Key audit and assurance matters are those matters that, in our professional judgment, were of most significance in our assurance procedures for the financial statements and the sustainability information in scope. We have communicated the key audit and assurance matters to the Supervisory Board. The key audit and assurance matters are not a comprehensive reflection of all matters discussed.

These matters were addressed in the context of our assurance procedures for the financial statements and the sustainability information in scope as a whole and to conclude thereon, and we do not provide a separate conclusion on these matters.

In previous year 'IFRS 15' has been identified as key audit matter. Since KPN incorporated IFRS 15 in their internal processes and recording, this is no longer a key audit matter.

General observation

For the audit of the financial statements, we rely on KPN's internal control framework and its governance. The framework is maintained by the business and continuously tested by KPN Risk Management and KPN Audit. The Management Board and Audit Committee are being informed of the outcome of the tests performed on a quarterly basis. For purposes of our audit, we assess the adequacy of the framework and we test the work of KPN Risk Management and KPN Audit. We believe that KPN's internal control framework meets the required criteria and it allows us to perform a system-based audit in an effective manner.

The key audit matters addressed below are all covered by KPN's internal control framework and have been audited by us with satisfactory results. For the interest of the reader, we highlight the most important elements we focused on in 2019.

Other Information

Key audit matter	How our audit addressed the matter	Key observations
Valuation of (in)tangible assets, including goodwill		
Under IFRS, it is required to annually test the amount of goodwill and intangible assets with an indefinite life for impairment. KPN's disclosures about goodwill and intangible assets are included in Note 11. No impairments of goodwill and intangible assets with indefinite life were recorded during 2019. On assets with finite lives an impairment test has to be performed if indications of impairment exist. Some triggering events were identified, for example in the area of hardware and software that required impairment testing and for which minor impairments were recorded, as included in Note 10 and 11. The impairment tests were important for our audit as the related asset amounts are significant and the assessment process itself is complex and requires judgment. The impairment test includes assumptions about future market or economic conditions.	We compared forecasted revenue and profit margins for all cash generating units with the approved KPN strategic plans. We also verified the assumptions to which the outcome of the impairment test is most sensitive and reviewed the company's statement that the headroom of the CGU's is more than sufficient and therefore no sensitivity analysis needs to be disclosed in Note 11. Our audit procedures included, among others, using EY valuation specialists to assist us in verifying the assumptions and methodologies used by KPN and evaluating the historical accuracy of management's estimates that drive the assessment, such as strategic plans and expected growth rates.	We concur with management that there is no need for impairments of goodwill and intangible assets with indefinite life and agree with the disclosures in Note 11. We concur with management on the impairments recorded.
Taxes		
Deferred tax At 31 December 2019 the deferred tax assets are valued at EUR 662 million and related disclosures are included in the Notes to the consolidated statement of profit or loss in Note 8. The enacted Dutch tax law reduces the corporate income tax (CIT) in steps to 21.7% in 2021. IFRS requires deferred tax assets and liabilities to be measured at the tax rates that are expected to apply in the period in which the asset is realized or the liability is settled, the development of the Dutch CIT rate impacts the measurement of in particular the carry forward, including deferred taxes on the balance sheet as per year-end year-end 2019. This item was significant to our audit because the assessment process is complex and judgmental and is based on assumptions about expected future market or economic conditions.	Our audit procedures related to the deferred tax assets included, amongst others, using EY tax specialists to assist us in verifying and interpreting the agreements ('vaststellingsovereenkomsten') and other agreements reached with the Dutch Tax Authorities as well as evaluating the assumptions, such as expected future taxable income and methodologies used by the company. This entailed reviewing the company's latest approved strategic plan. We discussed this plan with management and determined the reasonableness of the assumptions used regarding the recoverability of the deferred tax assets and assessed the plan's assumptions and sensitivities and evaluating the historical accuracy of management's estimates that drive the assessment. In auditing the tax positions we have taken into consideration the enacted Dutch tax law with respect to income tax rate.	We concur with the deferred tax assets recorded.

Key audit matter	How our audit addressed the matter	Key observations
IFRS 16		
IFRS 16 'Leases' has become effective as of 2019 and has a significant impact on the financial statements as disclosed in Note 2, in which the 2018 financial information has been restated. Most of KPN's lease contracts include extension (renewal) or termination options. KPN exercises significant judgment in determining whether these options are reasonably certain to be exercised.	Our audit procedures included, among others, to assess whether the implementation of the new standard was in accordance with IFRS 16 'Leases'. Our audit procedures included the IFRS 16 adjustments of the balances as of 1 January 2018, 31 December 2018 and the results for year 2018. We have verified the assumptions on which KPN has based the lease terms (Note 2 and 19) and the incremental borrowing rates used by KPN. We also performed procedures in respect of the completeness of additions and changes to the leases population and the calculations made in the lease-tool used by KPN. Furthermore we have also verified whether the relevant disclosures in Note 2 and 19 are adequate.	We concur with the adjustments and the disclosures made in the Report in Note 2 and 19. We concur with the recording of leases based on IFRS 16 including the Notes 2 and 19 in the Report, the lease terms and the incremental borrowing rate on which the calculations of the right-of-use-assets and the lease liabilities are based.

Key audit matter	How our audit addressed the matter	Key observations
Reliability of IT systems, including security, cybercrime and data privacy		
At KPN, processes are highly automated and KPN continuously invests in simplification and improvement of IT systems, which has led to several changes in 2019 that have been discussed on page 12. Reliability and security of IT systems are thereby high on the agenda of KPN and for that purpose KPN's internal control framework includes several controls to ensure, inter alia, proper identity, access and change management of its IT systems. KPN also has a security team in place focusing on policies, security management and a team of ethical hackers. This team tests the security of KPN's IT environment and imitates behavior of hackers to stay continuously up to date with the latest developments and helps KPN in managing their own security risks, including cybercrime and data privacy as disclosed on page 43 of the Integrated Annual Report.	As part of our audit, we have reviewed the quality of KPN's IT systems and the controls embedded therein with a purpose to express an opinion on the financial statements. For this purpose, we performed our own procedures and reviewed and tested the work done by KPN Risk Management and KPN Audit. Since this is highly specialized work, our audit team includes IT specialists.	In a few instances, we identified situations where controls needed improvement. KPN has set-up remediation procedures that we have also reviewed and tested with satisfactory results.

For the assurance procedures concerning the sustainability information in scope, we identified the following key assurance matters:

Key assurance matter	How our review addressed the matter	Key observations
Estimations and assumptions in Scope 3 (CO_2e emissions) and energy savings by customers		
Inherent to the nature of information on Scope 3 (CO_2e emissions and energy savings by customers), is that they are to a large extent based on the use of estimates and underlying assumptions as disclosed on pages 186 and 187 of the Integrated Annual Report.	Our review procedures focused on evaluating the suitability and consistent application of the reporting criteria and assessing the reasonableness of the assumptions made. We have also reviewed whether the disclosures in the Report are adequate.	We assessed the reporting criteria as suitable and consistently applied and the assumptions made as reasonable. We agreed that the methodologies used are sufficiently disclosed in Appendix 3.

Key assurance matter	How our review addressed the matter	Key observations
Disclosure of methodology for RepTrak pulse score (reputation) and Net Promoter Score in the Netherlands (customer satisfaction)		
The indicators RepTrak and NPS are identified by KPN as part of their representation of key achievements. The indicators are for a substantial part measured by third parties. The outcomes are influenced by the methodologies used by the third parties.	Our review procedures focused on evaluating whether the methodologies are suitable and assessing whether the transparency on the methodologies and its changes in the NPS methodology, as disclosed in Appendix 3 in KPN's Report, are sufficient for a proper understanding by the reader.	We assessed the reporting criteria as suitable and consistently applied. We agreed that the methodologies used are sufficiently disclosed in Appendix 3.

Report on other legal and regulatory requirements

Engagement

We were engaged by the Supervisory Board as auditor of Koninklijke KPN N.V. on 9 April 2014, as of the audit for the year 2015 and have operated as statutory auditor since that date.

No prohibited non-audit services

We have not provided prohibited non-audit services as referred to in Article 5(1) of the EU Regulation on specific requirements regarding statutory audit of public-interest entities.

Other Information

Responsibilities

Responsibilities of Board of Management and the Supervisory Board

The Board of Management (hereafter: management) is responsible for the preparation and fair presentation of the financial statements in accordance with EU-IFRS and Part 9 of Book 2 of the Dutch Civil Code, and for the preparation of the other information, including the Report by the Board of Management in accordance with Part 9 of Book 2 of the Dutch Civil Code and the other information required by Part 9 of Book 2 of the Dutch Civil Code and the remuneration report in accordance with section 2:135b of the Dutch Civil Code.

Management is also responsible for the preparation of reliable and adequate sustainability information in accordance with the GRI Standards (comprehensive option) and the applied supplemental KPN reporting criteria, including the identification of stakeholders and the determination of material topics. The choices made by management in respect of the scope of the Report and the reporting criteria are set out in the section entitled Appendix 3: Transparency, in the Integrated Annual Report.

Management is also responsible for such internal control as management determines is necessary to enable the preparation of the Report that is free from material misstatement, whether due to fraud or errors.

As part of the preparation of the financial statements, management is responsible for assessing the company's ability to continue as a going concern. Based on the financial reporting frameworks mentioned, management should prepare the financial statements using the going concern basis of accounting unless management either intends to liquidate the company or to cease operations, or has no realistic alternative but to do so. Management should disclose events and circumstances that may cast significant doubt on the company's ability to continue as a going concern in the financial statements.

The Supervisory Board is responsible for overseeing the company's reporting process.

Our responsibilities

Our responsibility is to plan and perform the assurance engagements in a manner that allows us to obtain sufficient and appropriate assurance evidence for our conclusions.

Our assurance procedures aimed at obtaining reasonable assurance have been performed with a high, but not absolute, level of assurance, which means we may not detect all material errors and fraud during our audit. The assurance procedures performed to obtain a limited level of assurance are aimed on the plausibility of information and vary in nature and timing from, and are less in extent, than for obtaining reasonable assurance. The level of assurance obtained in a review is therefore substantially less than the assurance obtained in an audit.

We apply the "Nadere voorschriften kwaliteitssystemen" (NVKS, Regulations for Quality management systems) and accordingly maintain a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and other applicable legal and regulatory requirements.

A further description of our responsibilities is included in the Annex to the combined independent auditor's report.

Amsterdam, 21 February 2020

Ernst & Young Accountants LLP

signed by F.J. Blenderman

Annex to the combined independent auditor's report

Work performed

We have exercised professional judgment and have maintained professional skepticism throughout the assurance engagements performed by a multi-disciplinary team, in accordance with Dutch Standards on Auditing and the Dutch Standard 3810N, ethical requirements and independence requirements.

Our audit to obtain reasonable assurance about the financial statements (consolidated and corporate) included the following:

- Identifying and assessing the risks of material misstatement of the financial statements, whether due to fraud or errors, designing and performing audit procedures responsive to those risks, and obtaining audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtaining an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the company's internal control.
- Evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- Evaluating the overall presentation, structure and content of the financial statements, including the disclosures.
- Evaluating whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

Our review to obtain limited assurance about the sustainability information in scope included amongst others:

- Performing an analysis of the external environment and obtaining an understanding of relevant social themes and issues and the characteristics of the company.
- Evaluating the appropriateness of the reporting criteria used, their consistent application and related disclosures in the sustainability information. This includes the evaluation of the results of the stakeholders' dialogue and the reasonableness of estimates by management.
- Obtaining an understanding of the reporting processes for the sustainability information, including obtaining a general understanding of internal control relevant to our review.
- Reconciling the relevant financial information with the financial statements.
- Obtaining an understanding of the procedures performed by the internal audit department of KPN.
- Identifying areas of the sustainability information with a higher risk of misleading or unbalanced information or material misstatements, whether due to fraud or errors. Designing and performing further procedures aimed at determining the plausibility of the sustainability information responsive to this risk analysis. These further review procedures consisted amongst others of:
  - Interviewing management and relevant staff at corporate level responsible for the sustainability strategy, policies and results.
  - Interviewing relevant staff responsible for providing the information for, carrying out internal control procedures on, and consolidating the data in the sustainability information.
  - Obtaining assurance information that the sustainability information reconciles with underlying records of the company.
  - Reviewing, on a limited test basis, relevant internal and external documentation.
  - Performing an analytical review of the data and trends in the information submitted for consolidation at corporate level.
- Evaluating the consistency of the sustainability information in scope with the information in the Report which is not included in the scope of our assurance engagement
- Evaluating the overall presentation, structure and content of the sustainability information.
- Considering whether the sustainability information as a whole, including the disclosures, reflects the purpose of the reporting criteria used.

In addition to the procedures mentioned above, for the CO_2e emission data 2019 (Scope 1 and 2) of own operations in the Netherlands and the underlying energy data we designed and performed further audit procedures responsive to the risks identified, and obtained audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk that the CO_2e emission data 2019 is misleading or unbalanced, or the risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from errors. Fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control. These further audit procedures included the following procedures:

- Obtaining a more detailed understanding of systems and reporting processes, including obtaining an understanding of internal control relevant to our assurance engagement, but not for the purpose of expressing an opinion on the effectiveness of the company's internal control.
- Evaluating the design, implementation and operating of the relevant internal controls during the reporting year.
- Conducting more in-depth analytical procedures and substantive testing procedures on the relevant data.
- Evaluating relevant internal and external documentation, on a test basis, to determine the reliability of the CO_2e emission data 2019 (Scope 1 and 2) of own operations in the Netherlands and the underlying energy data.

We have read the other information. Based on our knowledge and understanding obtained through our audit of the financial statements or otherwise, we have considered whether the other information contains material misstatements. By performing these procedures, we comply with the requirements of Part 9 of Book 2 and Section 2:135b sub-Section 7 of the Dutch Civil Code and the Dutch Standard 720. The scope of the procedures performed on the other information is substantially less than the scope of those performed in our audit of the financial statements or in our review of the sustainability information.

Communication

We communicate with the Supervisory Board regarding, among other matters, the planned scope and timing of the assurance procedures and significant findings, including any significant findings in internal control that we identify during our assurance engagements. In this respect we also submit an additional report to the Audit Committee in accordance with Article 11 of the EU Regulation on specific requirements regarding statutory audit of public-interest entities. The information included in this additional report is consistent with our audit opinion in this auditor's report.

We provide the Supervisory Board with a statement that we have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

From the matters communicated with the Supervisory Board, we determine those matters that were of most significance in the audit of the financial statements, the review of the sustainability information in scope and the audit of the CO_2e emission data 2019 (Scope 1 and 2) of own operations in the Netherlands and the underlying energy data of the current period and are therefore the key audit and assurance matters. We describe these matters in our combined independent auditor's report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, not communicating the matter is in the public interest.

Appendices

Appendix 1: Alternative Performance Measures

In the discussion of KPN's financial results, a number of alternative performance measures (non-GAAP figures) are used to provide readers with additional financial information, that is regularly reviewed by management. These non-GAAP figures should not be viewed as a substitute for KPN's financial results as determined in accordance with IFRS, which are presented in KPN's Consolidated Financial Statements. Also, the additional information presented is not uniformly defined by all companies, including KPN's peers. Therefore, the non-GAAP figures presented may not be comparable with similarly named numbers and disclosures by other companies. In addition, readers should be aware that certain information presented is derived from amounts determined under IFRS, but is not in itself an expressly defined GAAP measure. Such non-GAAP measures should not be viewed in isolation or as an alternative to an equivalent GAAP measure.

KPN's management considers these non-GAAP figures, combined with GAAP performance measures and in conjunction with each other, the most appropriate to measure the performance of the group and its segments. The non-GAAP figures are used by management for planning, reporting (internal and external) and incentive purposes.

All non-GAAP figures are based on continuing operations unless stated otherwise.
KPN's main non-GAAP figures are explained below.

EBITDA

KPN defines EBITDA as operating result before depreciation (including impairments) of PPE and amortization (including impairments) of intangible assets. Note that KPN's definition of EBITDA deviates from the literal definition of earnings before interest, taxes, depreciation and amortization and should not be considered in isolation or as a substitute for analyses of the results as reported under IFRS as adopted by the European Union.

€ million	2019	2018 (Restated)
Total revenues and other income	**5,702**	**5,639**
Cost of goods & services	1,301	1,332
Personnel expenses	1,027	1,103
Information technology/Technical infrastructure	353	412
Other operating expenses	443	439
Total operating expenses (excl. D&A)	**3,124**	**3,286**
EBITDA	**2,578**	**2,353**

Adjusted revenues and adjusted EBITDA after leases (Adjusted EBITDA AL)

Adjusted revenues are derived from revenues (including other income), adjusted for the impact of incidentals. Incidentals are non-recurring transactions which are not directly related to day-to-day operational activities at or over EUR 5m, unless significant for the specific reportable segment.

Following the introduction of IFRS 16 and the significant impact of this new standard on KPN's financial results and internal spend control, KPN introduced 'adjusted EBITDA after leases' (or 'adjusted EBITDA AL') as an alternative performance measure. KPN's peers introduced a similar alternative for EBITDA.

Adjusted EBITDA AL is derived from EBITDA and is adjusted for the impact of restructuring costs and incidentals ('adjusted') and for lease-related expenses ('after leases' or 'AL'). Lease-related expenses in this definition are the depreciation and impairment expenses of right-of-use assets and interest on lease liabilities, as well as the gains or losses arising upon remeasurement or (early) termination of a lease.

The following table shows the key items between reported and adjusted revenues for the full year:

€ million	FY 2019 reported	Incidentals	FY 2019 adjusted	FY 2018 reported restated	Incidentals	FY 2018 adjusted restated	y-on-y reported	y-on-y adjusted
Consumer	2,916	–	2,916	2,986	–	2,986	-2.3%	-2.3%
Business	2,067	25	2,042	2,137	–	2,137	-3.3%	-4.4%
Wholesale	818	190	628	623	–	623	31%	0.7%
Network, Operations & IT	6	–	6	14	–	14	-60%	-60%
Other (incl. eliminations)	-105	–	-105	-121	–	-121	-13%	-13%
KPN Group	**5,702**	**215**	**5,486**	**5,639**	**–**	**5,639**	**1.1%**	**-2.7%**

The following table specifies the revenue incidentals:

€ million	Segment	FY 2019	FY 2018
Book gain on sale of NLDC	Wholesale	171	–
Book gain on sale of International Network Services	Business	25	–
Change in revenue related provisions	Wholesale	20	–
Total revenue incidentals		**215**	**–**

The following table shows the key items between reported and adjusted EBITDA AL for the full year:

€ million	FY 2019	FY 2018 (Restated)	y-on-y
EBITDA	**2,578**	**2,353**	**9.6%**
Incidentals	-210	16	n.m.
Restructuring	115	101	13%
Lease-related expenses			
Depreciation right-of-use assets	-138	-146	-6.0%
Interest lease liabilities	-28	-33	-16%
Adjusted EBITDA after leases	**2,317**	**2,290**	**1.2%**

The following table specifies the EBITDA AL incidentals:

€ million	Segment	FY 2019	FY 2018
Book gain on sale of NLDC	Revenue	171	–
Book gain on the sale of International Network Services	Revenue	25	–
Change in revenue related provisions	Revenue	20	–
Addition to asset retirement obligation	Other operating expenses	–	-11
Change of provisions	Other operating expenses	-6	-5
KPN Group		**210**	**-16**

Net opex reduction program

KPN's net opex reduction program is directed at reducing KPN's net indirect operating expenses after leases. The program is directed at the operating expense categories personnel, IT/TI, other operating expenses and lease-related expenses, excluding restructuring costs and incidentals. Through its nature, the program will also mean a reduction in FTEs. The baseline for measurement is the operating expense level at the end of 2018. The baseline is adjusted for major changes in the composition of the group in the years 2019-2021 (acquisitions and disposals). The program has generated net indirect opex savings of EUR 141m by the end of 2019.

Free cash flow (FCF)

FCF is defined as cash flow from continuing operating activities plus proceeds from disposals of PPE minus Capex (investments in PPE and software) and adjusted for repayments of lease liabilities.

€ million	2019	2018 (restated)
Net cash flow provided by operating activities from continuing operations	**2,005**	**2,099**
Capex	-1,115	-1,106
Proceeds from real estate	1	5
Repayments of lease liabilities	-141	-149
Free cash flow from continuing operations (incl. TEFD dividend)	750	849
Free cash flow from continuing operations (excl. TEFD dividend)	**726**	**795**

Leverage ratio

KPN defines its leverage ratio as net debt (excl. lease liabilities) divided by the 12-month rolling adjusted EBITDA AL. The ratio is adjusted for major changes in the composition of the KPN Group (acquisitions and disposals) when applicable.
Net debt is defined as gross debt less net cash and short-term investments. Gross debt is defined as the nominal value of interest-bearing financial liabilities representing the net repayment obligations in euro, excluding derivatives, related collateral and leases, and taking into account 50% of the nominal value of the hybrid capital instruments.

For the calculation of KPN's leverage ratio, see Note 12.4 to the Financial Statements.

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Appendix 2: Connectivity of non-financial information

Reference	Strategic Pillar	Material topic	Critical Performance Indicator	Target 2019	Result 2019
Customer Value	Focusing on profitable growth segments	- Customer interaction - Fair marketing and communication	NPS CM Mobile	17	**20**
			NPS CM Fixed	17	**18**
			NPS CM	N/a	**19**
			NPS BM	2	**-4**
Impact on society	Focusing on profitable growth segments	- Customer interaction	% chronically ill children provided with a KPN Klasgenoot	100%	**100% (1,046)**
Converged smart infrastructure	Building the best converged smart infrastructure	- Network quality, reliability and availability - Responsible operations	FttH households compared to end 2018	N/a	**+~120k**
			5G ready	N/a	**~640 sites**
			Weighted downtime (compared to last year YTD)	-25%	**-36%**
			% of households with possibility of access to at least 100Mbps connection	75-80%	**75%**
			# of customers connected in rural areas with 4G or combined 4G/DSL solutions	N/a	**54,734**
			Average 4G Download speed per year-end	60Mbps	**68Mbps**
Focused innovation and digitalization	Focusing on profitable growth segments	- Data and information protection - Innovation in products and services	# of people with secure digital access to healthcare information	35,000	**43,432**
			# of professionals with secure digital access to healthcare information	N/a	**N/a**
			# of elderly facilitated to live independently	12,500	**12,015**
			# consumers and patients using healthcare facilities to live with more autonomy	N/a	**N/a**

1 KPI discontinued due to focus on NPS CM total
2 The reported figure for 2017 has not been restated according to the calculation method used in 2019
3 In 2020, KPN reconsiders this KPI in order to define a KPI that represents the impact of downtime on customers
4 KPI discontinued due to focus on strategic goals 2019-2021
5 KPI discontinued and replaced by target to # of professionals
6 KPI discontinued and replaced by target # of KPN vitaal/zorgvrij customers

Result 2018	Result 2017	Target 2020	Target 2021 or beyond	GRI reference	Impact/SDG
16	14	Discontinued[1]	–	Customer interaction: Own indicator	**9. Industry, Infrastructure and Innovation**
13	11	Discontinued[1]	–		
14	13	21	–		
-1	-1[2]	2	–		
100% (1,041)	100% (1,109)	100%	100% in 2021 and 2022	Economic performance Customer interaction: Own indicator	**4. Quality Education**
N/a	N/a	–	+1 million	Network quality, reliability & availability: Own indicator	**9. Industry, Infrastructure and Innovation** **11. Sustainable Cities and Communities**
N/a	N/a	–	100% 5G ready		
-25%	-38%	N/a[3]	–		
N/a	76%	Discontinued[4]	–		
27,492	N/a	Discontinued[4]	–		
53Mbps	58Mbps	75Mbps	–		
31,990	N/a	Discontinued[5]	–	Customer privacy Data and information protection: Own indicator	**3. Good Health and Well-being** **9. Industry, Infrastructure and Innovation**
N/a	N/a	55,000	–		
12,283	11,446	Discontinued[6]	–		
N/a	N/a	14,000	–		

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Reference	Strategic Pillar	Material topic	Critical Performance Indicator	Target 2019	Result 2019
Safeguarded privacy and security	Building the best converged smart infrastructure	- Data and information protection	% customers helped who were infected by malware (within 8 hours)	98.5%	**~100%**
			Percentage of Dutch people that believe their data is safe with KPN	70%	**68%**
			Monitoring of all Dutch municipalities for cybersecurity attacks so that the appropriate mitigation can take place	N/a	**N/a**
Sustainable employability	Focusing on profitable growth segments Building the best converged smart infrastructure Accelerating simplification and digitalization	- KPN's corporate governance and human rights compliance	Overall percentage of women at KPN in the Netherlands	23%	**21%**
			% of KPN employees in the NL who feel they can work in line with HNLW	90%	**N/a[2]**
			Sustainable employability: % of employees with a new job < 1 year after leaving KPN	80%	**85%**
			Employee survey score for engagement	78%	**77%**
Environmental performance	Building the best converged smart infrastructure	- Energy usage - Sustainable ICT solutions	Energy savings by customers as % of KPN Group	89%[3]	**93%**
			CO_2e reduction in the chain (scope3) compared to 2014	17%	**16%**
			% reduction of energy consumption of KPN Group compared with 2010	28%[3]	**30%**
			Energy efficiency improvement data centers compared to 2010	13%	**N/a[5]**
			Absolute car-fuel savings compared to 2010	49%[3]	**49%**
			% collected customer premises equipment	70%	**78%**
			Climate-neutral own operations	100%	**100%**
			% Reuse and recycling	77%[3]	**76%**
			% CO_2e neutral cars added to company fleet in reporting year (lease pool + engineers)	20%	**33%**
Responsible supply chain	Building the best converged smart infrastructure	- Supplier selection and good governance - KPN's corporate governance and human rights compliance	% realized improvements on corrective action plans	70%	**88%**
			% high-risk Tier I, Tier II and Tier III suppliers audited	40%	**41%**

1 KPI discontinued since automation of activities results in nearly 100% performance
2 KPI discontinued due to regular way of working and no longer a goal in itself
3 2019 targets and 2018 results are restated due to the sale of NL|DC
4 Due to refining our methodology, we restated our scope 3 figures for previous years
5 KPI discontinued due to the sale of NL|DC

Result 2018	Result 2017	Target 2020	Target 2021 or beyond	GRI reference	Impact/SDG
~99%	~99%	Discontinued[1]	–	Customer privacy Data and information protection: Own indicator	**9. Industry, Infrastructure and Innovation** **11. Sustainable Cities and Communities**
69%	70%	70%	Improve % annually to remain undisputed market leader		
N/a	N/a	40%	70%		
22%	23%	24%	–	Supplier selection and good governance: Own indicator	**4. Quality Education** **5. Gender Equality** **8. Decent Work and Economic Growth**
86%	77%	Discontinued[2]	–		
85%	83%	>80%	–		
77%	80%	80%	–		
88%[3]	77%	94%	95% in 2021	Materials Effluents and waste	**12. Responsible Consumption and Production**
16%[4]	11%[4]	17%	20% reduction in 2025 30% reduction in 2030 50% reduction in 2040		
27%[3]	24%	29%	34% in 2022 44% in 2030		
12%	15%	Discontinued[5]	–		
45%[3]	43%	50%	100% inflow of CO_2e neutral cars as from 2025		
67%	69%	80%	84%		
100%	100%	100%	100%		
75%[3]	65%	79%	82%		
19%	7%	35%	38%, given availability of cars, fiscal climate, mobility measures		
77%	82%	75%	75%	Supplier selection and good governance: Own indicator	**12. Responsible Consumption and Production** **17. Partnership for the Goals**
42%	42%	40%	40%		

Appendices

Appendix 3: Transparency, materiality and stakeholder engagement

About this report

Scope sustainability information

The purpose of the information in this report is to inform our stakeholders about our role in the society, in connection with our main strategic objectives and targets. We define our stakeholders as all people and organizations affected by our operations or with whom we maintain a relationship, such as employees, governments and regulators, the investor community, suppliers, customers, and the society. For more information on our stakeholder approach for specific stakeholder groups, see Stakeholder dialogue in this Appendix. The scope of the information in this report covers the KPN Group including subsidiaries in which KPN has a majority shareholding.

The scope has not changed compared with last year's report. Unless stated otherwise, references to KPN should be read as referring to the KPN Group. For our non-financial information, we include new acquisitions in our report as of the first full year of ownership. Non-financial information for divestments that occurred during the reporting year is excluded for the full year. The data in this report refers to KPN's performance and not to that of our subcontractors, unless stated otherwise. The full scope of the financial information is reported in the Consolidated Financial Statements (page 98 to 164). This report specifically reviews developments and performance in 2019 and is based on topics identified as high material for KPN. The described scope applies to all material topics. Aspects of a more static nature (such as our management approaches to our CSR themes and our stakeholders) or with less reporting priority (such as the list of external memberships) are included in the GRI Index (www.kpn.com/annualreport) or reported on corporate.kpn.com/dutchsociety.htm.

Reporting criteria non-financial information

The Integrated Annual Report is published on 24 February 2020. We prepared this report in line with the International Integrated Reporting Council (IIRC) Integrated Reporting (IR) framework. For the sustainability information included in this report we followed the Global Reporting Initiative (GRI) Standards - Option Comprehensive and self-developed reporting criteria as disclosed in this Appendix. We comply with the EU Directive Non-Financial Reporting, and integrated all elements in our Integrated Annual Report.

The Option - Comprehensive of the GRI Standards means that KPN reports on all general standard disclosures and all specific standard disclosures related to identified material topics. The process for defining the material topics and report content, as well as the list of material topics, is described in the materiality determination. The results of this assessment (list of material topics for KPN, including their reporting priority) determine which GRI indicators are set out in the Integrated Report and which indicators are featured only on our website or in our GRI index. The overview can be found in the GRI index in Appendix 9: GRI Index. In addition to these GRI Standards, KPN included the pilot version of the Telecommunications Sector Supplement, as published by GRI in 2003, in determining material disclosures, resulting in five additional topics and indicators in the GRI index. For one high material topic, customer loyalty, KPN uses and reports bespoke performance indicators, as outlined in the GRI Index in Appendix 9 .

The GRI index specifies the aspect boundaries and omitted indicators where relevant (including clarifications). This Integrated Annual Report has been prepared in accordance with the GRI Standards: Comprehensive option. Where available and relevant, the report includes data for previous years. Quantitative data concerning the workforce and financial results set out in this report has been collected using our financial data management system. The remaining data, set out in this report, has been collected using a standardized questionnaire that was completed with data from information management systems by the responsible KPN business units. The Internal Audit and Corporate Control departments used consistency and availability of supporting evidence as the basis for their assessment of the data reported at group level. Validation criteria set out in advance were also used to assess the data.

EU Directive: Disclosure of non-financial information and diversity information

Requirements EU Directive	Subtopic	Chapter / Page reference
A brief description of the business model	The business environment	Our purpose and the world around us, p. 8-11 Strategy, key performance and value creation model, p. 12-15 Our valuable assets, p. 56-57
	Organization and structure	Strategy, key performance and value creation model, p. 12-15 Our valuable assets, p. 56-57
	Markets where the undertaking operates	Our purpose and the world around us, p. 8-11 Strategy, key performance and value creation model, p. 12-15 Our valuable assets, p. 56-57
	Objectives and strategies	Strategy, key performance and value creation model, p. 12-15 Our valuable assets, p. 56-57
	Main trends and factors that may affect the undertaking's future development	Our purpose and the world around us, p. 8-11
Relevant social and personnel matters (e.g. HR, safety etc.)	A description of the policies pursued, including due diligence	Sustainable employability, p. 45-47
	The outcome of those policies	Sustainable employability, p. 45-47
	Principle risks in own operations and within value chain	Sustainable employability, p. 45-47 Appendix 4: Top risks, p. 196-202
	How risks are managed	Compliance & risk, p. 66-72 Appendix 4: Top risks, p. 196-202
	Non-financial key performance indicators	Sustainable employability, p. 45-47 Environmental performance and responsible supply chain, p. 48-53
Relevant environmental matters (e.g. climate-related impacts)	A description of the policies pursued, including due diligence	Environmental performance and responsible supply chain, p 48-53
	The outcome of those policies	Environmental performance and responsible supply chain, p. 48-53
	Principle risks in own operations and within value chain	Environmental performance and responsible supply chain, p. 48-53 Compliance & risk, p. 66-72
	How risks are managed	Compliance & risk, p. 66-72
	Non-financial key performance indicators	Environmental performance and responsible supply chain, p. 48-53
Relevant matters with respect for human rights (e.g. labor protection)	A description of the policies pursued, including due diligence	Procurement and suppliers, p. 52-53
	The outcome of those policies	Sustainable employability, p. 45-47 Procurement and suppliers, p. 52-53
	Principle risks in own operations and within value chain	Sustainable employability, p. 45-47 Procurement and suppliers, p. 52-53
	How risks are managed	Compliance & risk, p. 66-72 Sustainable employability p. 45-47 Procurement and suppliers, p. 52-53
	Non-financial key performance indicators	Sustainable employability, p. 45-47 Procurement and suppliers, p. 52-53
Relevant matters with respect to anti-corruption and bribery	A description of the policies pursued, including due diligence	Implement a strong risk culture, p. 66-67 Insider transactions, p. 78 Environmental performance and responsible supply chain, p. 48-53

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Requirements EU Directive	Subtopic	Chapter / Page reference
	The outcome of those policies	Sustainable employability, p. 45-47 Compliance & risk, p. 66-72
	Principle risks in own operations and within value chain	Sustainable employability, p. 45-47 Compliance & risk, p. 66-72
Relevant matters with respect to anti-corruption and bribery	How risks are managed	Sustainable employability, p. 45-47 Compliance & risk, p. 66-72
	Non-financial key performance indicators	Sustainable employability, p. 45-47
Insight into the diversity (Board of Management and Supervisory board)	A description of the policies pursued	Sustainable employability, p. 45-47 Supervisory Board Report, p. 80-85
	Diversity targets	Sustainable employability, p. 45-47 Supervisory Board Report, p. 80-85
	Description of how the policy is implemented	Sustainable employability, p. 64-66 Supervisory Board report, p. 95-100
	Results of the diversity policy	Sustainable employability, p. 64-66 Supervisory Board report, p. 95-100

Taskforce on Climate-related Financial Disclosures

KPN recognizes the recommendations of the Taskforce on Climate-related Financial Disclosures (TCFD) as an important step in providing transparency on climate strategy. We have mapped the elements of this framework to our current reporting as included in the chapter Environmental performance and responsible supply chain and related appendices. Our risk framework is described in the Chapter Compliance & Risk and Appendix 4 contains the list of top risks.

TCFD Element	TCFD Recommendation	KPN Reporting on TCFD guidelines
Governance	Describe the governance of Board of Management related to climate-related risks and opportunities	Corporate governance, p. 58-61
	Describe the role of management on the judgement and governance of climate-related risks and opportunities.	Compliance and risk, p. 66-72 Appendix 4: List of top risks, p. 194-200
Strategy	Describe the climate-related risks and opportunities as described on short, midterm and long-term timeframe.	SWOT analysis, p. 11 Compliance and risk, p. 66-72 Appendix 4: List of top risks, p. 194-200
	Describe the impact of climate-related risks and opportunities on business activity, strategy and financial planning of the organization.	Compliance and risk, p. 66-72 Appendix 4: List of top risks, p. 194-200
	Describe the agility of the strategy, taking climate-related scenarios into account, amongst others a scenario to stay within the 2-degrees Celsius limit for global warming.	Environmental performance and sustainable supply chain, p. 48 Compliance and risk, p. 66-72 Appendix 4: List of top risks, p. 194-200 We performed scenario analysis on long-term energy pricing taking the impact of CO_2e-price regulation into account.
Risk Management	Describe the climate-related risks and opportunities as described on short, midterm and long term timeframe.	Compliance and risk, p. 66-72 Appendix 4: List of top risks, p. 194-200
	Describe the processes the organization uses to manage climate-related risks and opportunities.	Compliance and risk, p. 66-72 Appendix 4: List of top risks, p. 194-200
	Describe how processes for the identification, assessment and management of climate-related risks are integrated into the risk approach of the organization.	Compliance and risk, p. 66-72 Appendix 4: List of top risks, p. 194-200
Indicators and objectives	Describe the organizational processes for identification and assessment of climate-related risks.	Compliance and risk, p. 66-72 Appendix 4: List of top risks, p. 194-200
	Report on scope 1, 2 and 3 emissions	Environmental performance and responsible supply chain, p. 48-53
	Report on performance to climate-related objectives	Environmental performance and responsible supply chain, p. 48-53

External assurance

To give our stakeholders confidence in our reporting, we engaged EY as an independent assurance provider to perform an assurance engagement with the aim of obtaining reasonable assurance on CO_2e emission data 2019 (Scope 1 and 2) of own operations in the Netherlands and the underlying energy data as presented on page 50 of the Integrated Annual Report, and limited assurance on other sustainability information as disclosed in the following chapters and appendices:

- Chapters: KPN at a glance and The value we create;
- Appendices: Appendix 1-7: This includes Appendix 6: Social figure', Appendix 7: Environmental figures (including Scope 3 CO_2e emissions) and Appendix 9: GRI Index, which are available on the website of KPN.

The key social and environmental figures, which are available in the Appendices 6 and 7 on www.kpn.com/annualreport, are also part of this report. Partly, they provide more detailed numbers on key figures that reflect on high material topics within the report (such as CO_2e emissions and electricity consumption). The report contains prospective information, such as ambitions, strategy, targets and expectations. Inherent to this information is that actual future results may be different from the prospective information and therefore it may be uncertain. Therefore, the assumptions and feasibility of this prospective information is not covered by the external assurance.

The Audit Committee approved every engagement of the external auditor, after pre-approval by the internal auditor, in order to avoid potential breaches of the external auditor's independence. For EY's assurance report see p. 165 - 173.

Reporting ambitions

KPN adheres to several reporting benchmarks, like the Dow Jones Sustainability Index (DJSI) and the Transparency Benchmark. By doing this, we keep improving our performance and our way of reporting by comparing it with that of our peers and expectations from the industry and other stakeholders. Our reporting ambitions for the coming years are to: keep reporting in line with the IIRC framework and in accordance with GRI standards; keep reporting on high material topics; report more on qualitative and quantitative value creation for society; and maintain a leading position in several benchmarks like the Dow Jones Sustainability Index (DJSI) and the Transparency Benchmark.

Scoping and calculation methodologies environmental figures

Scoping and calculation of reported emissions

In the Integrated Annual Report, KPN reports the CO_2e emissions in the chapter Environmental performance and responsible supply chain and in Appendix 7. Reporting is done in accordance with the guidance and standards of the Greenhouse Gas Protocol and the ISO 14064-1 standard. KPN uses the operational control approach when reporting CO_2 emissions. Carbon dioxide (CO_2) is the most relevant greenhouse gas to KPN. Where available, we have taken CH_4 and N_2O into consideration in our greenhouse gas emissions information. We use the term 'CO_2e-emissions' to refer to the greenhouse gas emissions reported on. These are stated in CO_2 equivalents. The KPN emissions report is subdivided in scope 1-3 as set out below.

Scope 1 – Direct emissions:

- Fuel consumption of the lease vehicle fleet (employees' passenger vehicles and commercial vehicles)
- Heating of buildings (gas)
- Consumption of coolants for air conditioning and/or cooling
- Fuel consumption of emergency power generators

Scope 2 – Indirect emissions:

- Electricity consumption of the fixed and mobile networks, data centers, offices and shops
- District heating
- District cooling

The accuracy of the electricity consumption data is a key factor in the reliability of the CO_2e-emissions calculations. In the data-collection process, a number of factors affect the accuracy of the collected data. In general, data originating from direct measurements and recordings or invoices, including measurements from third parties, are the most accurate.

The net Scope 2 emissions are market-based and calculated based on the tank-to-wheel (TTW) CO_2e emissions factors for renewable electricity. For renewables (wind, biomass, solar), the TTW values are all zero. The CO_2e- emissions of the well-to-tank (WTT) phase are accounted for in our Scope 3 emissions (category 3 – fuel and energy-related activities). On page 50 both the location based and the market based scope 2 emissions are published.

As our electricity providers estimate the consumption for part of our network operations - as monthly meter reading are not always conducted - some uncertainty exists about the accuracy and completeness of our energy consumption. To improve accuracy and transparency, we are migrating to remote readable meters, reviewing admin processes and updating profiles with

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our electricity providers to improve the reliability of our energy data. We report our scope 1 and scope 2 emissions and energy consumption excluding NL|DC. NL|DC is reported separately until 1 October 2019 due the sale of NL|DC. Previous years for NL|DC are based on full year basis.

Scope 3 – Other indirect emissions:

Emissions in our upstream value chain (during the production phase of our products, services and equipment at our suppliers).

Emissions in our downstream value chain (during the use phase, including recycling and disposal of the products, services and equipment). The results are presented on page 50 and in Table 7 of Appendix 7: Environmental figures. We have used two main methodologies to calculate our Scope 3 emissions:

The spend-based method, which takes procurement data and calculates the emissions within an environmentally extended economic input-output (EEIO) model to assess the emissions. We used actual data covering January to November and extrapolated to full year.
The process-based method, which uses quantity-based data to evaluate the emissions associated with specific activities, e.g. kWh of energy usage or quantity of materials purchased to manufacture goods.

We used actual data covering January to November and extrapolated to full year. All parameters used in the scope 3 calculation are checked annually whether new values are available or not. We assess suppliers with zero net emissions and adjust accordingly. Calculation of emission methods, coverage and assurance is described in the table below.

Scope CO_2e	Standard	Scope	Coverage	Approach	Location- / Market-based	Assurance	Emission factor / Green energy
Scope 1	GHG Protocol Scope 1 Guidance	KPN Group	98% of all KPN business units and subsidiaries (opex/FTE)	Operational control approach	Market based	NL: Reasonable	co2emissiefactoren.nl version 4-1-2020 Gold standard & REDD+ forest compensation projects
Scope 2	GHG Protocol Scope 2 Guidance	KPN Group	98% of all KPN business units and subsidiaries (opex/FTE)	Operational control approach	Market based	NL: Reasonable	co2emissiefactoren.nl version 4-1-2020 100% green electricity
Scope 3 Cat: 1, 2, 5, 9	GHG Protocol Scope 3 Guidance	Netherlands	98% of all KPN business units and subsidiaries (opex/FTE)	Spend based (Environmentally Extended Input Output data (EEIO) approach)	Location based	Limited	UK DEFRA 2014 (Indirect emissions from the supply chain) and CBS Statline The EEIO-factors are corrected for inflation.
Scope 3 Cat: 3, 6, 7, 11, 13	GHG Protocol Scope 3 Guidance	Netherlands	98% of all KPN business units and subsidiaries (opex/FTE)	Process and activity based	Location based	Limited	co2emissiefactoren.nl version 4-1-2020
Scope 3 Cat: 4, 8, 10, 12, 14, 15	GHG Protocol Scope 3 Guidance	Netherlands	98% of all KPN business units and subsidiaries (opex/FTE)	Not applicable for KPN	Not applicable	Limited	Not applicable

Energy consumption and carbon emission avoided through customers using our IT solutions

The calculation of the avoided energy consumption, CO_2e emission and the cost reduction for our customers is based on models per service. The results are presented on page 52 and in Table 9 of Appendix 7: Environmental Figures.

Avoided energy consumption	Kind of avoidance (most impact)	KPN measurement	Source external information
Teleworking (enabled by KPN connectivity)	Avoided travel	Market-share broadband subscribers based on Telecompaper Research	Publicly available statistics and reports from CBS, Kennisinstituut voor Mobiliteitsbeleid, ECN, Netbeheer Nederland, Milieu Centraal, Telecompaper and other sources
KPN Audioconferencing	Avoided travel	Number of audio-conferencing; average number participants per meeting	Publicly available statistics and reports from CBS, Kennisinstituut voor Mobiliteitsbeleid, British Telecom and CarbonTrust
KPN Hosting	Electricity savings	Volume-hosting services	CBS
Dematerialization	Energy and raw materials savings	CD and DVD papers avoided by e.g. Spotify, Netflix	NVPI, Sociaal en Cultureel Planbureau, SVDJ, RVO, CE Delft, WWF and, CarbonTrust
iTV Cloud solution	Energy and raw materials savings	Number of customers, energy consumption KPN Cloud for iTV	Screenforce
KPN Video Conferencing	Avoided travel	Number of video conferences; average travel savings per meeting	CBS Onderzoek Verplaatsingen in Nederland

In the calculation we used actual data covering January to November and extrapolated to full year. All parameters are checked annually for updates by KPN and Navigant and all updates and changes in calculation and reference values are checked and reviewed by Navigant. For the parameters saved on office space and the extra electricity and gas consumption at home when working at home (rebound effect), the values used in the Teleworking savings calculation are based on averages. The average between the lowest and highest reported value in reports and research is used. Cost savings are based on the average fuel, electricity and gas prices published by CBS and Milieu Centraal. In previous years the table included the category “KPN housing (colocation)”. Because of the divestment of NL|DC this category was removed for all reporting years. This allows for better comparison.

Scope and calculations KPI % Reuse and recycling

The KPI % Reuse & recycling considers the outflow of KPN materials and waste destined to be reused, recycled, incinerated or landfilled. This means the scope includes, but is not limited to:
- Regular waste streams from KPN offices and operations;
- Obsolete (end-of-use) equipment and inventory coming from KPN operations, offices and shops;
- Obsolete (end-of-use) customer-premises equipment and mobile phones that are collected via KPN return programs and which are processed by KPN or on KPN’s behalf.

The scope therefore does not include obsolete (end-of-use) customer-premises equipment, mobile phones and related packaging that are not collected via KPN return programs. In this case the customer takes responsibility to dispose of this in accordance with law and regulations and local waste-collection procedures. Because of the divestment of NL|DC, their waste figures were removed for all reporting years as they are non-material.

The outflow of materials and waste is reported in Appendix 7, table 10 in accordance with GRI-306-2. The following disposal methods are reported with reference to GRI-306-2: Reuse (i), Recycling (ii, iii), Incineration (iv, v) and Landfill (vii).
The other disposal methods Deep well injection (vi), On-site storage (viii) and other (ix) do not apply. The waste disposal method is mostly determined by selected service partners and their waste-disposal contractor, where we challenge them on methods and performance. As part of our circular ambition, we promote reuse over recycling, and then incineration with energy recovery over landfill to minimize ecological impacts. Our service partners report the waste volumes (tons) on a quarterly basis. These volumes are allocated to the four types of disposal method based on processing rates (%) from direct information or public information. The KPI % reuse and recycling is then calculated by dividing the tons reuse and recycling by the total volume.

Other calculation methodologies

RepTrak

RepTrak is developed by the Reputation Institute and is used as a method to calculate the reputation score of companies worldwide. The RepTrak methodology also measures the drivers of reputation and the consequences for supportive behavior. The Reputation Institute’s policy is to adjust all RepTrak scores by standardizing them against the aggregate distribution of all scores obtained from the Reputation Institutes’s Annual Global RepTrak Pulse. Standardization has the effect of lowering scores in countries that tend to over-rate companies, and has the effect of raising scores for companies in countries that tend to rate companies more negatively.
All RepTrak scores are culturally standardized. This means that all RepTrak results are comparable across countries, industries and over time. Every month, the progress on the key attributes

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that stimulate reputation and supportive behavior is measured. The results are based on a minimum of 300 respondents per company each quarter. The data collection method is an online interview of 20 minutes. The qualified respondents have to be familiar or very familiar with the company. Per 1 January 2011, Reputation Institute started using an updated cultural bias adjustment procedure, whereby the cultural adjustment analysis was rebased based on the latest reputation scores. Because KPN was already in the midst of the process of setting KPIs, KPN requested the Reputation Institute to report KPN's reputation scores using the 'old' cultural bias adjustment analysis. Hence, this report shows 'unrebased' reputation scores for KPN. KPN reports the fourth quarterly average in the Integrated Report

Net Promoter Score (NPS)

We use NPS as the leading indicator to measure customer loyalty. The NPS results included in this report are calculated and provided by a leading market-research company in the Netherlands.
NPS is based on direct customer input, with the key question being whether a customer would recommend KPN to someone else. Depending on the score they give, the customer is classified as a 'promoter' or a 'critic'. The NPS is calculated by subtracting the percentage of 'critics' from the percentage of 'promoters'. The result is displayed as an absolute number instead of a percentage, within a range of -100 to +100.

In this report, all NPS results refer to Q4 of the respective year, based on a three-month rolling average (December 19 is based on October 19, November 19 and December 19). The NPS Consumer (Consumer Residential and Consumer Mobile) and NPS Business reflect a weighted average based on 2017 revenues. NPS Business combines this with EBIDTA margins for segments.

Materiality and stakeholder engagement determination

Materiality

The annual materiality assessment makes sure we are aware of what happens in our surroundings, where we have impact and how we can add focus to our efforts. It is performed to make sure we report on all relevant topics in this Integrated Report. The assessment is approved by the Board of Management.

In 2018, we conducted an extensive assessment, consisting of both an internal consultation held with employees representing all sections of KPN as well as an online survey sent to over 2500 external stakeholders, representing various stakeholder groups. The outcomes resulted in a list of material topics, which we aligned with the guidelines and standards of the Global Reporting Initiative (GRI).

This year we conducted a review process based on last years' results. The process consisted of four steps. The main change compared to last year is the exclusion of the topic 'Economic value'. This is mainly due to a review in abstraction level, which will be discussed further in step 2. In the following paragraphs the process steps will be elaborated on.

Step 1: Review relevance topics for 2019

Compared to last year we broadened the definition of materiality. As a result, we ensured alignment with the GRI minimum requirements, while incorporating insights from other reporting initiatives. The definition applied for a material topic for this report is any topic that significantly influences the organization or on which the organization has a significant impact with its activities. This includes positive and negative and direct and indirect influences (risk/opportunity) and impact. Through a standards, peers, trend and a media analysis, we concluded that the 2018 list of topics provided a complete basis for the 2019 report. A few overlaps between topics were identified, while other topics were too broad defined. Therefore a calibration took place leading to an initial list of 13 topics.

Step 2: Review abstraction levels

A lesson learnt in 2018 related to the abstraction level of the topics. Some focused on input related to resources needed for our core business. Others were output being the direct result our activities. Finally, some were topics that impact directly or indirectly. To establish a more stable basis, the levels were aligned and definitions were aligned, with specific attention on the topic of economic value. It was decided not to include the topic in the list of topics as it is seen as the performance result on all other topics and therefore not essential to approach separately. The topic is still included in the GRI index.

Step 3: Scoring and validation

In 2018, an extensive external stakeholder consultation took place through an online survey. We also used the scores from this survey for 2019, aligned them with review steps. As some topics have been calibrated, scores have been averaged to ensure completeness and balance.
During an internal validation session, the process and topics were validated by senior representatives from various departments. Two topics were added, resulting in below list.

Topic 2018	Topic 2019	Definition
Environmental performance	Energy usage	The impact KPN's energy use for own operations (technologies, networks) has on the environment, biodiversity and climate change.
Impact of products and services	Sustainable ICT solutions	'The impact KPN has with its future-proof technologies (infrastructure and networks) on the reduction of GHG emissions (reduction of energy consumption, avoidance of traffic, optimizing logistic processes).
Environmental performance	Circular operations	The impact KPN has with its circular approach (sourcing of virgin materials, extended product use, high-end second life of product and materials) on circular economy/ biodiversity and ecosystem protection.
Sustainable suppliers	Supplier selection and good governance	The impact that KPN's selection of suppliers has on Dutch society and the impact of good governance among KPN's suppliers, and respected human rights have on local communities.
Digital transformation	Innovation in products and services	The impact KPN has with its digital innovation of products and services on the acceleration of digitalization.
Innovation and investments		
Quality and reliability of network	Network quality, reliability & availability	The impact the quality and reliability of KPN's networks have on the accessibility of high-speed internet - and therewith the availability of critical communications (short-term) and the contribution to growing economic and social activity (long-term).
Security		
Customer loyalty	Customer interaction	The impact honest, complete and transparent marketing and communication (e.g. on brand strategy) has on customer value.
Fair marketing and communication		
Digital inclusion	Community investment and sponsoring	The impact KPN's community investments on digital access (information and communication technologies) and sponsoring have on digital and social inclusion of everyone and anywhere.
Community investment		
Privacy and identity	Data & information protection	The impact KPN's data protection has on safeguarding the privacy & identity of customers & employees.
Diversity and equal opportunity	Employee diversity and equal opportunity	The impact that providing fair working conditions (e.g. related to diversity, equal opportunities, non-discrimination) has on KPN's workforce well-being and welfare.
Internal human rights adherence		
Sustainable employment	Professional development opportunities	The impact KPN's professional development opportunities and stimulation have on the employability of its employees (inside or outside KPN) and therewith on the Telecommunication sector development and economic growth.
Internal human rights adherence	KPN's corporate governance and human rights compliance	The impact KPN has with sharing its knowledge on digital technologies, on preparing and influencing people, society and government for a digital future.
Digital knowledge and education	Shared digital knowledge	The impact KPN has with sharing his knowledge on digital technologies, on preparing and influencing people and society (government) for a digital future.
Participation public policy development		
Electro-magnetic fields	Responsible operations	The impact on health and safety of people in the surrounding communities of KPN's network infrastructure
Taxes	Tax strategy	The impact of a tax strategy that is compliant with all relevant laws, regulations and international standards – one that is efficient and responsible and in the interest of all KPN's stakeholders.

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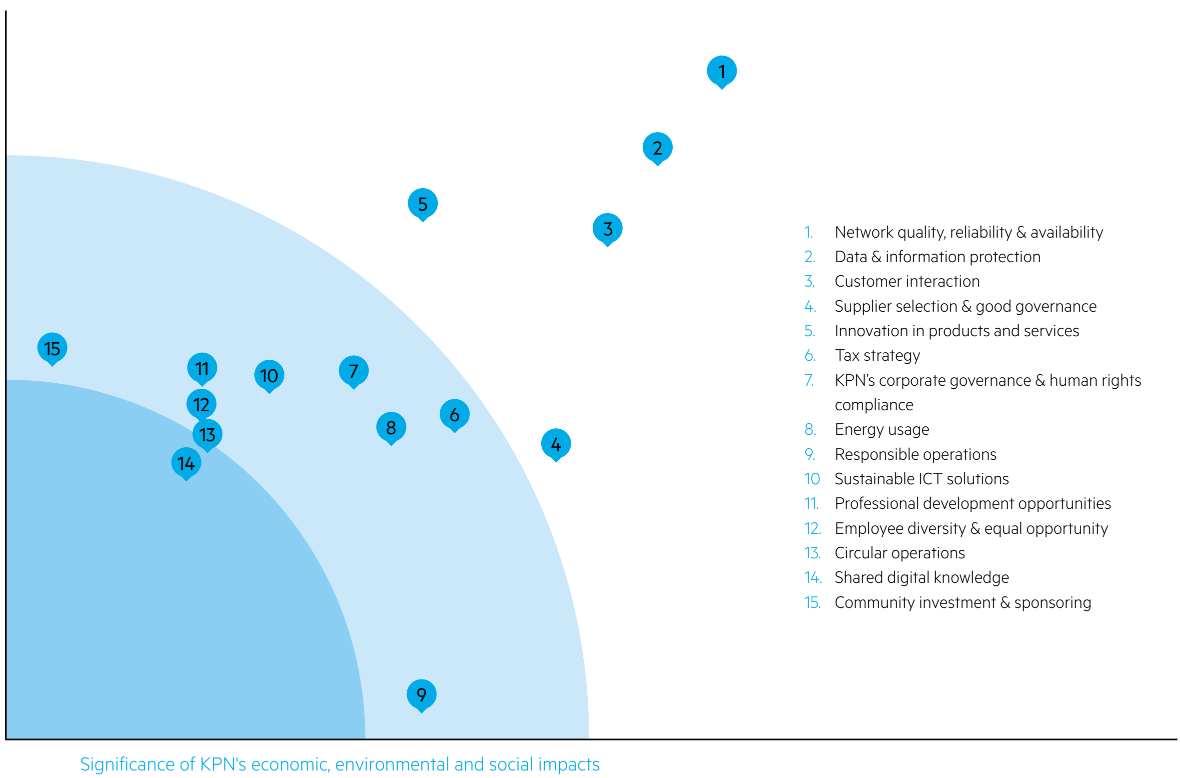
Furthermore the representatives provided input on the internal scoring, resulting in below matrix. The combination of the horizontal axis and the vertical axis determines the degree of impact that KPN has with the topic on society. KPN divides the results into three categories:

- High material topics: we aim to fulfill a leading role on these topics. By developing policies, setting targets and defining KPIs to monitor and report on our impact.
- Medium material topics: we want to demonstrate our social responsibility regarding these topics.
- Low material topics: these are topics we monitor, but do not necessarily report on.

In order to see where the aspect can be found and which GRI topics are translated into KPN topics, please see the cross reference in the connectivity matrix.



1. Network quality, reliability & availability
2. Data & information protection
3. Customer interaction
4. Supplier selection & good governance
5. Innovation in products and services
6. Tax strategy
7. KPN's corporate governance & human rights compliance
8. Energy usage
9. Responsible operations
10. Sustainable ICT solutions
11. Professional development opportunities
12. Employee diversity & equal opportunity
13. Circular operations
14. Shared digital knowledge
15. Community investment & sponsoring

Step 4: Approval and integration in the report

Based on the priority outcomes of the materiality analysis, approved by the Board of Management, we determined the topics to be addressed in the report, including the scope and aspect boundaries of all material topics.

Stakeholder dialogue

KPN is in continuous dialogue with a diverse set of stakeholders, with equally diverse interests and motivations. These dialogues take place on different levels within our organization and are often a part of our daily business. Members of the Board of Management attend the most important stakeholder dialogues, in which a variety of stakeholders is present. In the table below, we provide insight into all the interactions we have had with different stakeholders.

Stakeholder group	What they expect	How we engage (incl. frequency)	Main topics in 2019	Our response
Employees	Employees expect us to provide opportunities to strive in the dynamic workplace. For them, this translates into an attractive, effective and inspiring work environment (physical, technology, learning and development); simplicity in data, organization, technology and processes; transparency in the organization and from leadership, a recognizable culture and values and excellent development opportunities. New generations expect generational awareness, dynamic career perspectives, continuous feedback, mentoring and coaching, empowermen, purpose and agility.	To some the changing conditions in the world and the labor market may feel like a threat. That is a natural reaction and we see it as our responsibility as an employer to both create awareness of the consequences of the fast-changing environment and encourage and enable people to seize the possibilities it offers. In the long run, KPN's HR function will more and more be using data & digital and robotization & AI to create an employee experience in response to increasing consumerism that will take shape in alternative employment relations.	• Leadership based on our leadership profile – giving purpose, engaging people, delivering performance. • Strategic Workforce Management that focuses on future skills and capabilities, rationalization and standardization, contract independent sourcing and capacity planning. • A future-proof organizational design with room for authenticity, diversity and inclusiveness. • Integral management of our HR chains in which daily activities and change are balanced. • Performance management with room for new ways of working that leads to empowered employees. • Right sizing of our collective labor conditions to support this. • Development of our engineers and retail sales people. • Various initiatives to support continuous personal development and mobility. • Future-proof individuals and organization as main theme in preparing for the CLA negotiations.	• Continuous investment and development of our employees. • Several successful initiatives to support continuous personal development. • Future-proof individuals and organization as main theme in preparing for the CLA negotiations.
Government and regulators	Government and regulators expect us to comply with the rules and regulations and meet the requirements for licensing. Furthermore, they expect us to be climate responsible and transparent in our communication, Their goal is, amongst others, to create a level playing field and protect the interests of end-users. They expect us to run infrastructure and services considered as very important to the Dutch economy and Dutch society at large and to create coverage of high speed networks, wireless and wireline.	We proactively engage with government and regulators. As the incumbent in the Netherlands, there are special obligations imposed on us, in particular to enable competition via regulated access to our fixed network. We engage in a continuous dialogue to explain our efforts and results. Furthermore, we work together with (local) governments on innovation (e.g. IoT) projects which result in energy and cost savings.	• Avoiding non-compliance • Integrity and transparency • For the next three years, ACM wants KPN to continue to grant its competitors access to its copper and fiber-optic network. • Concerns have been intensifying concerning national cybersecurity throughout 2019.	• We continued our compliance efforts through programs such as optimizing our business control system, external reviews, benchmarking, enhanced compliance training and top management meetings. • We work continuously to meet compliance requirements through clear and practical legal advice, clear operational procedures, related control mechanisms, and clear and safe ways to report potential misconduct. • We interact closely with ACM in relation to compliance, incidents and potentially different views on the interpretation of the law.

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Stakeholder group	What they expect	How we engage (incl. frequency)	Main topics in 2019	Our response
Investor community	The investor community – financial markets in general, our shareholders, debt investors and research analysts – expects us to be extensive and transparent. We should be clear and consistent in communicating our strategy, objectives and outlook, and transparent about corporate governance, including executive remuneration. Their main interest is our commitment to creating value. They want timely and accurate updates and ample opportunity to seek clarification and ask questions.	We organize key corporate events such as the Annual General Meeting of Shareholders, Capital Markets Days, and we meet with investors, analysts and credit-rating agencies during roadshows and conferences. We also provide relevant company information through timely press releases and regular publications such as our quarterly results and Integrated Annual Report.	• Management changes and potential changes in strategic direction. • Competitive environment following merger between T-Mobile and Tele2 and weaker operational KPIs. • Declining revenues, with slightly growing adjusted EBITDA after leases. • free cash flow performance impacted by restructuring and negative change in working capital. • Leverage profile, including bond redemptions, bond tender offer and new hybrid bond issuance. • Asset disposals, including sale of stake in Telefónica Deutschland. • Regulatory uncertainty from fixed access regulation.	• New CEO and CFO appointed. The BoM is extended to six people to ensure focus on effective implementation and execution of KPN's 2019-2021 strategy. We highlighted that our strategic priorities will remain unchanged • KPN's brand strategy and the launch of KPN Hussel are aimed at driving value per household by focusing on the KPN brand and fixed-mobile convergence. • Revenue trend is partially self-inflicted, for example due to customer migrations and value-over-volume focus in Business. Strong cost management led to substantial indirect opex savings in 2019, supporting slightly growing adjusted EBITDA after leases. • Negative change in working capital is partly driven by installments paid to fiber contractors, by lower opex due to continuous cost savings, and by higher Capex in Q4 2018. We realized free cash flow (excl. TEFD dividend) of €726m and growth of regular dividend per share in 2019. • We fully redeemed two senior bonds (€ 465m and £ 96m), tendered $ 405m of the $ 1.0bn senior bond and issued a new € 500m perpetual hybrid bond in 2019. • We sold NLDC, International Network Services and Argeweb and announced the agreement to sell KPN Consulting. In addition, we sold the remaining stake in Telefónica Deutschland. • The number of Wholesale lines increased in 2019, driven by growth in VULA and Wholesale Broadband Access (WBA) services.
Suppliers	Our suppliers expect to maintain a long-term commitment and cooperation with us. Furthermore, they expect simple contracts, fair prices, acceptable payment terms and compliance with the core principles of data protection. Together we should look for opportunities regarding sustainable cost reduction.	KPN has a central Corporate Procurement Organization (CPO) that is responsible for contracting deals with suppliers. We make sure the principles of our suppliers' CSR policies are in line with our own. We are constantly in touch with our suppliers and invite them to our annual Supplier Day. We increasingly partner with them on sustainable solutions. We are also a member of the Joint Audit Cooperation (JAC), an association of 17 telecom operators aiming to verify, assess and develop the CSR implementation across the manufacturing centers of important multinational suppliers.	• In 2019 we started integrating the EcoVadis Scorecard. This is an evaluation of how well a company has integrated the principles of CSR into their business and management system. The assessment is part of our tender process. The scope criteria are across four themes: environment, labor & human rights (Employee Health & Safety, Working Cond., Soc. Dialogue, Child Labor, Forced Labor & Human Trafficking, Diversity, Discrimination and External Stakeholder Human Rights, ethics & sustainable procurement. If the outcome of the assessment is <35 points, the supplier must draw up an improvement plan in order to mitigate identified risks for the purpose of achieving a score of the least 35 points in a later assessment.	• Together with our suppliers we implemented sustainable solutions which resulted in cost reduction, reduction in energy and material use. • We aim for all suppliers we do business with to comply with the KPN Supplier Code of Conduct or have their own equivalent code. Our Code of Conduct helps to ensure that all of our suppliers are committed to conducting its business in an ethical, legal environmentally, respecting human rights and socially responsible manner as well as JAC standards.

Stakeholder group	What they expect	How we engage (incl. frequency)	Main topics in 2019	Our response
Business customers	Customers expect KPN to help them with the digital transformation within their companies. They want sincere and proactive advice that meet their specific needs Business customers also expect effortless IT solutions and there is a growing customer demand for continuous accessibility, and fast and reliable fixed and mobile connections. When problems do occur, they expect KPN to solve them adequately and show customer-centric behavior.	Every day we talk with our business customers via our Business Partners, account managers, in our XL stores and our contact centers. We engage through our Customer Experience Lab in which we test the needs and experience of the customers daily. We also engage customer panels, quarterly market research, round-table discussions, workshops connecting customers' strategies with KPN's and social media through our B2B platform, The Digital Dutch. We closely monitor our business customers' satisfaction and loyalty through NPS.	• Digital Dutch Experience. • Improve Customer Experience & Loyalty measured by NPS. • Migrations of customers to our integrated KPN ÉÉN platform. • Simplicity in Products & Services.	• We continue to inspire our customers with our online Digital Dutch platform. We cocreate content to inspire others with our customers in the podcast Digital Heroes and proactively engage with our customers in other NL forums and our own Customer Advisory Board. • Roll out high-speed internet business parks. • Continued successful bundling of services in SME. • Growth in Professional Services supported by integrated solutions at KPN's larger customers.
Retail customers	Our retail customers expect high-quality products and service for the right price. This includes failure-free networks, clear propositions and processes, a quick and proper response to questions and complaints and good communication. They want sincere and proactive advice about the best possible subscriptions that meet their needs. Besides that, they want their loyalty to be acknowledged and appreciated.	We communicate 24/7 with our customers on our front ends (Customer Service, Engineers, Stores, Social). We collect and monitor both requested and unrequested customer feedback on a daily basis and share these customer voices throughout the company. We also use external panels for our Brand NPS and RepTrak to objectively monitor our reputation.	• Being always connected • A seamless and easy digital experience • Sustainability • Best proposition for households	• We started a large-scale roll-out of fiber broadband, for both existing, new and future customers. • We launched our new KPN Hussel proposition, where our customers have full control of the features and products that most suit their needs. • We further improved our digital experience.
Society	Society expects us to make a positive mark on Dutch society. They expect us to be socially and environmentally responsible and to be a good corporate citizen. They want products and services that help to solve social and environmental issues. Furthermore, they expect us to be a frontrunner in sustainability and other societal issues by creating sustainable partnerships. KPN has the potential to lead debates e.g. on privacy and the use of data.	We are active in working groups initiated by NGOs and participate in or liaise with organizations such as the European Telecommunications Network Operators' Association (ETNO), International Telecom Union (ITU), the United Nations Global Compact Foundation, the Dutch Association of Investors for Sustainable Development (VBDO), the ICT Coalition and Circle Economy. Furthermore, we organize an annual dialogue with stakeholders to discuss our contribution to society and the desired next steps	Topics discussed with our societal partners were: • KPN can go beyond the role of technology provider, promote inclusion and reduce social isolation and loneliness This is particularly important to counteract growing social segregation – and the risks of increased nationalism and populism – in the Netherlands. • KPN's preparedness to adjust their Supplier Code of Conduct and ask of suppliers to determine wages based on the living- wage standard, given that ILO standards do not always guarantee living wages for the workers of KPN' suppliers. • Taking a next step on development of impact measurement and reporting. KPN is reporting on climate, consistent with the Non-Financial Reporting Directive and the recommendations of the TCFD	We kept investing in KPN Health, we organized a big internal event on privacy and we organized the second Kid Cyber Day. • We put Living Wage on the agenda of JAC and made it a topic for investigation. • We joined MVO NL's 'Groene Netten' in order to contribute to a branch-wide impact study. • We have taken the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) into account in our Integrated Report and our disclosure to CDP.

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How we engage with policymakers

KPN actively engages with policymakers in politics and government, and sponsors activities which helps to generate public debate around the consequences of digitalization, as well as develop actions to address them. For KPN, as a predominantly Dutch operation, policy is primarily shaped in Brussels and in The Hague. The focus of our engagement is therefore aimed at these policy makers. To increase relevance with policymakers, the aim is to cooperate as much as possible with other likeminded companies, KPN therefore participates in trade organizations active in the Netherlands as well as at the European level, and contributes to these organizations.

These contributions account for the majority of the disclosed amounts. The sums apportioned to Brussels are part of the sums disclosed in the Transparency Register to which KPN has subscribed from the start. The Transparency Register also encompasses an estimation of cost of staff. KPN also participates in global organzations like GSMA, which aims to develop the mobile industry worldwide, and which also engages with policymakers in Europe and elsewhere.

Finally, KPN contributes to ITU, which is a standardization body and a United Nations Agency, but which is not a trade organization and therefore is not included in the sums presented.

KPN does not financially, or in any other way, support political parties, candidates or candidates for political positions. KPN does engage with national and regional authorities through knowledge-sharing to facilitate informed regulatory policy measures. KPN also contributes to sector organizations representing the interests of KPN in specific fields. Management upholds strict standards on ethical and transparent behavior.

Employees who are politically active have to ask for permission if they have paid political functions, e.g. as member of municipal or regional councils. In the past, KPN's policy has always been to approach policymakers directly. KPN does not make use of external public affairs' agencies to speak on its behalf.

KPN presents the amount of money spent on public affairs in three categories. KPN does not disaggregate these figures further as KPN is not at liberty to divulge the contributions to individual organizations.

Table trade organizations to follow

Type of trade Organization	Geographic scope	Spend in 2019 in EUR	Focus of membership (non-exhaustive)
Trade bodies representing interests of mobile operators worldwide	Global	30,000	Develop the mobile industry worldwide with focus on level playing field and predictability of the law. Create common standards and encourage sustainable innovation.
Trade body representing Europe's telecommunications network operators	European Union	65,795	Create a level playing field within the EU based on an unambiguous and predictable legal situation. Focus on the European Electronic Communications Code, the General Data Protection Regulation, ePrivacy, and the Privacy Shield.
Trade body representing Netherlands Industry and Employers	the Netherlands and the European Union	2,513	Monitor and influence nationwide issues that are of importance across sectors. Examples include creating a prosperous investment climate, fiscal climate, social agenda and a digital agenda.
Trade association for IT, telecom, internet and companies	the Netherlands	38,115	Monitor, influence and increase awareness of (issues in) the digital economy, e.g. on continuity and security and privacy.
Trade association in the technology industry	the Netherlands	90,750	Monitor and influence national policies in particular for the manufacturing industries, such as health care, metallurgy, microconductor industry, and the digital industry.
Trade association for the positioning of the Netherlands defense- and safety-related industry	the Netherlands	70,238	Monitor and influence national policies specifically in the field of national security.
Trade body and knowledge centre representing commercial users of electricity and waterin the Netherlands	the Netherlands and the European Union	26,636	Representing the interests of small, medium and larger organizations that use water and electricity on a professional basis.
Trade body representing the interests of the cybersecurity sector	the Netherlands and the European Union	15,000	This organization aims to increase the digital resilience of the Netherlands and to increase the quality and transparency within the growing cybersecurity sector.
Platform for businesses in the Benelux region	Benelux and the European Union	6,250	Platform for businesses in the Benelux, identifying areas where, from a business perspective, closer collaboration and integration is required.
Platform for information society	the Netherlands	20,000	Neutral platform where government, knowledge institutions, business, and civil society organizations collaborate on public-private partnerships and exchange knowledge about the responsible design of our digitizing society.
Association for data-driven marketing	the Netherlands	10,255	Association advocating responsible data-driven marketing, unlocking the potential withing the regulatory framework.

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Appendix 4: List of top risks

Category	Risk	Countermeasures	Evaluation
Fast-changing market conditions: intensified competition	KPN could face increased competition on services and network access from current competitors as well as new market entrants and OTT players, or from market consolidation. Competition in retail and wholesale markets can occur based on price, content, increase of investment in customer acquisition or retention costs, subscription options, coverage and service quality. For wholesale, competition could increase due to the recent regulation of cable networks. These factors could lead to lower profitability as well as lower market shares.	• Offer converged services (triple-play, quad-play) and competitive price/portfolio combinations, such as KPN Hussel for Consumer Market and KPN EEN MKB, Smart integrations and Smart combinations for Business Market • Implement the best converged smart infrastructure in the Netherlands by: - Accelerating fiber roll-out for Consumer and Business Market, increasing availability of high-access speeds and improving in-home wifi coverage - Full modernization of mobile network by enabling the latest innovative technologies - Moving to All-IP infrastructure • Lean operating model: acceleration of simplification and digitalization program. This will lead to improved time-to-market, better quality of service and a simplified and agile organization. Additionally, it will lead to a structural lower level of operational costs and swift response to new market developments • Improve NPS and offer high quality of service to customers • Maintain focus on high-value customers in both Consumer and Business Market • Introduce new innovative products and services to meet changing customer needs • Launch targeted household approach and household-centric propositions • Strengthen distribution power with business partners, online channels and shops • Rationalize our brand portfolio: focusing on the strong KPN-brand by expanding KPN's service with the best elements of the individual brands to offer customers in all segments better user experience • Improve customer loyalty by optimizing customer journey and implementing advanced data-analytics programs • Strategic partnerships and cooperation with OTT players • KPN Ventures to form partnerships with innovative companies, and apply their innovations in our products and services.	**Likelihood** High **Impact** High **Trend** ↗ **Monitoring KPI:** • Market shares, Net adds • Service revenues
Fast-changing market conditions: disruptive technologies or business models and failure to introduce new products and services	KPN's business model and financial performance could be affected by disruptive technologies, changing customer behavior and new players. KPN's response to new technologies (such as E-SIM, blockchain, artificial intelligence, fintech), changing customer behavior and market developments and its ability to successfully introduce new competitive products or services, are essential to KPN's performance and profitability in the long run. The introduction of new products and services such as new propositions may not be successful and/or timely. This could lead to lower profitability as well as lower market shares.	• Develop new services, business models and pricing models • Develop strategic partnerships with OTT players and network suppliers • Implement an agile organization, technology (such as applying open innovation models and standardized technology) and processes to enable swift response to new market developments. • Introduction of 'Field labs', Operator of the Future project ('Horizon Three'), Open innovation hub and 'Proof of Concept' to test new technologies with customers • KPN Ventures: scout, invest in, and create cooperations with innovative technology companies to enhance innovation in key areas such as internet of things, smart home, cybersecurity, cloud computing, data services, digital healthcare, mobile/video (OTT) services and networking technology • Perform scenario analysis to timeously identify and act on disruptive technologies and changing customer preferences • Continue the exploration of how KPN can adequately respond to changes in the telecommunications market and value chain by implementing new business initiatives, in line with KPN's new strategy.	**Likelihood** Medium-High **Impact** High **Trend** ↗ **Monitoring KPI:** • Revenues new business • Revenues existing business (mobile, fixed, TV etc)

Category	Risk	Countermeasures	Evaluation
Operational and quality-related incidents	KPN's services and technical infrastructure and IT may be vulnerable to damage, service interruptions, operational issues and loss/theft or manipulation of customer data. These incidents could be caused by failures in the network systems, power supplies, failures in supporting computer systems, disasters (fire, flooding or other disasters caused by a.o. climate changes) or by reduction of legacy systems. These incidents could have a negative impact on society, KPN's reputation and profitability and customer satisfaction.	• Implement a high-quality smart infrastructure including a resilient design of our networks in the Netherlands by: - Accelerating fiber roll-out for Consumer and Business Market, increasing availability of high-access speeds and improving in-home wifi coverage - Full modernization of mobile network by enabling the latest innovative technologies – Moving to All-IP infrastructure • Lean operating model: acceleration of simplification, automation and digitalization program for improved quality of service. • In order to increase our operational performance as a company KPN has established the "Network Stability Program". This – KPN wide – program is focused on increasing the availability of our critical services to our customers. It consists of several streams, not only addressing Business Continuity Management, Architecture and recovery times, but also cultural and behavioral aspects. This program is driven by TDO Leadership and one of our strategic programs for 2020. • Monitor performance of technical infrastructure (e.g. traffic growth and utilization rate) and IT (predictive analysis of required maintenance) • Continuous improvement of operational processes and systems • Business Continuity Management and back-up and recovery plans in case of emergencies including adequate external communication (e.g. "be alert" procedure, corporate crisis management teams and public affairs) • Follow up recommendations for improved resilience of networks (a.o. the critical network disruption of June 2019) • Regional roaming in which a part of mobile voice traffic can be transferred to other operators in the event of calamities • Insurance agreements to cover liability claims of customers or third parties in case of service interruptions.	**Likelihood** Low-Medium **Impact** High **Trend** → **Monitoring KPI:** • NPS NL • Weighted downtime reduction • # Major incidents • Damage per incident per service
	Strategic transformation: KPN may not make sufficient progress in realizing the necessary simplification and transformation actions, for example by phasing out legacy networks and systems, by simplifying our processes and services, by digitalizing our business, by organizational transformation (more lean and flat), by postmerger integration of our acquisitions or by strengthening our capabilities and culture. These actions must lead to necessary cost reductions, increased agility (e.g. improved time-to-market of new innovative services) and higher quality of services (e.g. higher NPS and First Time Right). If KPN cannot realize simplification and transformation in time, we are not able to adequately respond to actions of our competitors and, consequently, could lead to lower revenues and profitability in future.	• Lean operating model: acceleration of simplification and digitalization program. This will lead to improved time-to-market, better quality of service and a simplified and agile organization. Additionally, it will lead to a structural lower level of operational costs. • Rationalization of networks: shutting down legacy networks, moving to a single core network and virtualization • Rationalization of products and services, IT, datacenters and technical infrastructure • Increased use of standard (cloud) building blocks in networks • Focused innovation and govern innovations and simplification at executive level; strong planning of new innovation and simplification projects	**Likelihood** Medium **Impact** Medium **Trend** → **Monitoring KPI:** • Opex reduction • Progress on Strategic Transformation projects

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Category	Risk	Countermeasures	Evaluation
Operational and quality-related incidents	KPN may fail to meet stakeholder expectations relating to energy, emissions and sustainability. This could lead to loss of customers, loss of profitability in the future and reputational damage.	• Embed sustainability in our corporate strategy, ambitions and targets • Maintain KPN's climate-neutral performance (green energy) • Continued efforts on reducing energy usage and emissions for our own operations and in the supply chain • Implement circular operations and services to reduce our footprint, e.g. by collecting customer equipment for reuse and recycling, increasing the longevity of our products and where possible switch to less virgin materials • Continue KPN's CO_2e-reduction objectives as approved by the Science Based Targets Initiative (SBTI), which means they are in line with the climate goals of the Paris Agreement • Measure energy savings by ICT solutions for our customers • External communication program about KPN's activities on corporate social responsibility, sustainability, energy management, and the benefits for KPN customers and Dutch society.	**Likelihood** Low **Impact** Low **Trend** → **Monitoring KPI:** • Energy consumption • Carbon emissions • Circularity (long-term goal: close to 100% as of 2025) • Percentage of waste • Ranking in Dow Jones Sustainability Index and CDP or similar upcoming ratings
Information security threats	Threats to the confidentiality, integrity or availability of KPN's networks, systems, or data (including customer data) caused by cyberattacks or terrorism.	• Continued implementation of the regularly updated KPN Security Policy • Continued and reinforced strategic security programs such as Permanent Vulnerability Management, Safemail, Endpoint Protection, and DNS & Network Security • Continue and strengthen Security Operations Center to improve security visibility and risk intelligence • Consolidate and maintain quality asset registration and configuration management database which enables rapid response to attacks • Continue HR strategy focused on attracting and retaining leading security experts • Educate and increase awareness of personnel for security and privacy • In case of emergencies or large incidents, adequate external communication (e.g. "security be alerts", corporate crisis management teams).	**Likelihood** High **Impact** High **Trend** ↗ **Monitoring KPI:** • PHOSI (Potential Harm Of Security Incident) • Average days to close incidents and vulnerabilities • # data leakages
Risks relating to regulatory and legislative matters	New regulatory decisions in the EU and the Netherlands could affect KPN's future operations and profitability, such as decisions regarding continuity, end-user protection, level playing field in access regulation and between telco and internet players, (national) security and spectrum auctions. KPN may face issues in relation to non-compliance with regulation, including – but not limited to– telecommunications and privacy regulations. These incidents can lead to fines or have a negative impact on KPN's reputation and relationship with regulators and/or supervisors. Although there is no evidence that electromagnetic fields of (mobile) equipment or base stations pose any health risks, a change in this view could expose us to significant claims and litigations, a severe drop in our mobile business or high compliance costs of new laws and regulations (e.g. major changes in our mobile networks).	• Proactive stakeholder and reputation management including dialogue with regulators, national security agencies and decision makers • Quarterly report to Board of Management on status of new laws and regulations • Strengthening the effectiveness of the regulatory and privacy compliance organization: - Centralized organization for compliance and risk management - Compliance training sessions for staff and management, for example e-learnings about the company codes for all staff members of KPN in the Netherlands - Proactive internal compliance investigations - Surveys and culture-improvement programs - Improving and maintaining a robust internal control framework dedicated to complying with specific regulations - Ringfencing wholesale within operations. • Regarding electromagnetic fields: - Monitor national and international scientific research on the effects of electromagnetic fields on health - Strict adherence to all national and international standards for electromagnetic fields.	**Likelihood** Medium **Impact** Medium **Trend** → **Monitoring KPI**: • Fines • # compliance incidents reported to regulator

Category	Risk	Countermeasures	Evaluation
	Tax risks: • Adverse decisions or interpretations of tax authorities on pending disputes or changes in tax treaties, tax laws, OECD guidelines, EU Directives and other rules could have a material adverse effect on KPN's net result and cash flow.	• Act in line with our company-wide tax strategy and tax policy • Continuous monitoring of internal control framework for key tax risk areas • Maintain good working relationships with tax authorities • Tax planning, while remaining compliant with all relevant laws, regulations and international standards.	**Likelihood** Medium-High **Impact** High **Trend** → **Monitoring KPI:** • Effectiveness of tax control framework
	• Notwithstanding the fact that KPN is committed to be fully compliant with the relevant laws and regulations and adheres to its tax strategy and policy (see ir.kpn.com), some of KPN's tax positions could be perceived negatively by the political environment and society, which could lead to reputational damage.		
	• With regard to WBSO and Innovation Box benefits: KPN has a declining number of eligible hours for WBSO, due to divestments, stricter interpretation of legislation, lower qualifying Capex budgets for innovation and our new 'agile' way of working.		
	• If business results stay behind expectations, KPN's net DTA may have to be impaired, partly or in full.	• If (taxable) profits do not develop according to plan, timely action/tax planning is needed to avoid impairment (loss) of DTA.	
	• The introduction of new mobile consumer propositions in August 2016 caused a change in the VAT calculation methodology which resulted in a lower remittance of VAT from August 2016 until December 2018. The view of KPN is not shared by the Dutch tax authorities. KPN concluded, based on the applicable regulations, that a positive outcome of this dispute is not highly probable and therefore recorded a contract liability for the VAT amount. A potential negative outcome of a forthcoming court procedure will lead to a negative cash flow in future years.	• Defending KPN's position through court procedure.	
Uncertainty about KPN's future business model to recover high investments	The telecom and ICT market is characterized by increasing competition, accelerating changes in customer behavior, accelerating technological developments, increasing data usage, increasing price pressure and shrinking markets. Due to these developments, high investments in our assets such as technical infrastructure (access and core networks), IT infrastructure, licenses and goodwill may not be recovered as KPN's business models to generate revenue and cash flow streams could change in future. Also, changes in assumptions such as profitability, network penetration, long-term growth and discount rate could negatively affect the value of cash generating units. These factors could lead to impairments of assets, licenses and goodwill.	• Cross- and upselling of new services such as IoT, cloud, security and content to add value to our connectivity and access portfolio • Customer Lifecycle Value (CLV) steering by monitoring end-to-end profitability of services and business lines • Strong Capex planning, supported by data-driven decision making process and based on RoCE and NPV analyses • Long-term vision on our networks, to optimize and align future investments (both timing, size and technology) with our commercial portfolio, market developments and financial performance • Continuous monitoring of realization of strategic business plans and performance, e.g. utilization and return on investments • Develop strategic partnerships and investigate options for network sharing • Implement a solid investment policy • Monitor profitability of the cash-generating units and network penetration.	**Likelihood** Medium **Impact** Medium-High **Trend** ↗ **Monitoring KPI**: • RoCE • Capex as % of revenues • Utilization of networks

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Category	Risk	Countermeasures	Evaluation
Pressure on cash flows for future Capex investments	The telecommunications industry is characterized by rapid technological changes and innovations. To meet future customer needs and to stay ahead of our competitors, KPN must continuously invest in its infrastructure to upgrade, modernize and simplify our networks and supporting systems. If KPN cannot generate sufficient cash flows in future, we are not able to realize and finance the required investments. This could subsequently lead to higher churn of customers, declining market shares and to lower revenues and profitability in future.	• Continuous monitoring of realization strategic business plans and performance, e.g. organic growth of EBITDA and FCF, utilization and return on investments • Strong Capex planning, supported by data-driven decision-making process and based on NPV analyses • Perform Return on Capital Employed (RoCE) analyses on current and future investments • Develop strategic partnerships and investigate options for network sharing	**Likelihood** Medium **Impact** High **Trend** → **Monitoring KPI:** • Net cash flow from operating activities
Spectrum auctions	Participation in spectrum auction in the Netherlands in 2020 (700, 1400 and 2100 MHz) and 2021/2022 (3500 MHz): KPN has to acquire or to renew the required frequency blocks and may have to pay a high price for the required spectrum.	• Thorough preparation by experienced KPN team and external experts; extensive simulation of auctions • Investigate alternative combinations of spectrum and advanced techniques to meet customer demands • Prudent financial policies to secure adequate funding • Proactive stakeholder management and dialogue with regulators and other governmental bodies.	**Likelihood** Medium **Impact** High **Trend** → **Monitoring KPI:** -
New business initiatives to compensate declining existing business	KPN may not be able to sufficiently grow and monetize new business initiatives and opportunities in the near future to compensate declining existing business, which may jeopardize KPN's profitability.	• Focused innovation initiatives, new business as well as strategic partnerships and cooperation with OTT players (open innovation model) to ensure KPN meets the changing customer needs and adapts to a dynamic market • Introduction of 'Field labs', Operator of the Future project ('Horizon Three') and 'Proof of Concept' to test new technologies with customers • Open innovation hub to incorporate innovation themes in KPN's strategy • KPN startup community to cooperate with startups and scout new innovative technologies • KPN Ventures to form partnerships with innovative companies • Allocate Capex budgets for innovative new business • Well-guided migration of customers from legacy to new innovative portfolio	**Likelihood** Medium-High **Impact** High **Trend** ↗ **Monitoring KPI:** • Revenues new business • Market sizes (IoT, etc) • OIT IT and Telco • Incubator budget
Financing KPN and volatile financial markets	KPN requires solid access to debt capital markets to finance its operations and refinance its outstanding debt. The pressure on KPN's financial framework may increase in the event of higher net debt levels and/or lower profitability. In that case, KPN might not be able to maintain its current credit ratings, which could negatively affect pricing and availability of financing resources.	KPN ensures solid access to debt capital markets by: • Commitment to an investment-grade credit profile • Maintaining a strong liquidity position and prefunding debt redemptions • Monitoring and forecasting of metrics used by rating agencies • Maintaining discipline in allocating capital to investment opportunities and shareholder remuneration	**Likelihood** Low-Medium **Impact** High **Trend** ↘ **Monitoring KPI**: • Credit rating • Net debt/EBITDA ratio • Liquidity forecast • Rating metrics (used in credit rating) • Dividend pay out ratio
	Uncertainty or changes in financial markets could negatively affect pricing and availability of KPN's funding sources.	• Cash-flow forecasting to ensure sufficient liquidity headroom in both normal and stressed market circumstances • Maintaining a varied maturity profile, limiting the amount of debt maturing in any one calendar year • Financing upcoming debt maturities well ahead of their maturity • Maintaining sufficient liquidity reserves in the form of cash and / or committed credit facilities • Managing the mix of floating and fixed interest rates • Diversification in funding sources	**Likelihood** Medium **Impact** Medium **Trend** ↘ **Monitoring KPI:** • Liquidity forecast • Redemption profile • Fixed/floating interest rate mix

Category	Risk	Countermeasures	Evaluation
Equity erosion	Group equity position may be negatively impacted by impairments of goodwill or other financial assets, lower profits or future dividend payments. If our equity position is too low, it could potentially limit our dividend payments to shareholders.	• Improve profitability of KPN Group • Monitoring future development of equity position and solvency ratio • Balanced shareholder remuneration in relation to profit and cash-flow development	**Likelihood** Medium **Impact** Medium **Trend** → **Monitoring KPI** • Group equity position • Free distributable reserves
Dependence on suppliers and outsourcing / offshoring partners	KPN strongly depends on products and services of external suppliers. This dependency relates to adequate telecommunications equipment, software and IT services, and contractors' ability to build and roll out telecommunications networks, as well as suppliers' ability to deliver technical support. This dependency could potentially lead to unbalanced supply-demand relationships and could lead to an inability to obtain the products and services at a competitive price and quality. Furthermore, we identify the risk of an inappropriate level of back-to-back contracting with regards to customer requirements on e.g. price and services in supplier agreements. Suppliers of KPN could breach relevant legislation such as data protection, security, privacy, IPR, human rights and/or environmental laws, which could negatively impact KPN's reputation.	• Establishing a strong and centralized demand and contract management organization that defines, enforces and monitors compliance of suppliers with terms of contracts and preparation of re-transition plans as fall-back scenario • Simplification of the supplier landscape in line with KPN's strategy and cost focus • Evaluation of outsourced activities on effectiveness and efficiency and, where applicable, preparation of a re-transition plan for insourcing • Include the possibility to terminate contracts based on non-performance and in that case migration of the activities to other suppliers • Include a right to audit clause in supplier contracts and the possibility to conduct regular audits • Monitor compliance of suppliers with the KPN Security Policy • Align customer contract requirements with supplier contract requirements (this alignment is part of the governance rules for outsourcing) • Sharing of KPN's supplier code of conduct with all suppliers and request all medium and high-risk suppliers to confirm compliance with this code • For high-risk suppliers, performance of audit procedures to evaluate suppliers' compliance with international standards for human rights and environmental laws. Monitoring of timely follow-up on main audit findings • Promote transparent pricing and way of doing business.	**Likelihood** Medium **Impact** Medium **Trend** → **Monitoring KPI**: • Spend development: % spend at top 20 suppliers • JAC audit results
Geopolitical developments for suppliers, which could trigger security, business continuity and reputational risks	Geopolitical volatility, driven by rising international tensions, protectionism and security concerns, may impact our ability to do business, including sourcing, in any part of the world. These concerns could lead to bans and other sanctions on suppliers of hardware and software. Such sanctions could significantly impact business continuity of those suppliers and consequently could also harm KPN's availability and use of network equipment. Dutch government or other regulating bodies could impose additional requirements to mitigate or prevent possible security issues that some vendors (or the originating countries) could bring for Dutch society. If we can no longer use equipment of those vendors in our networks, or parts of our network, it could lead to higher investment costs in future. Additionally, use and public opinion of these vendors could lead to reputational damage for KPN.	• Closely monitor latest global and political developments in general and specifically US and EU actions • Implement fall-back scenarios and policies if KPN can no longer acquire or use hardware and software from specific suppliers and avoid dependence on single vendors or countries • Implement new governmental regulations, by defining KPN's critical assets and implementing technical and process security measures, in order to sustain trusted service delivery with specific suppliers (task force Vendor Security Assurance) • Ensure good relations and exchange with relevant national security agencies and political decision-makers • Maintain strong PR and communication with customers and other stakeholders regarding the use of equipment from specific suppliers and KPN's high security standards.	**Likelihood** High **Impact** High **Trend** ↗ **Monitoring KPI:** N/a

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Category	Risk	Countermeasures	Evaluation
Employment and diversity	KPN may not be able to attract and retain qualified and diverse staff members, as the war for talent increases rapidly. This could lead to insufficient competency in KPN's workforce. Also, employees or new candidates may have negative perceptions or uncertainties about KPN's future. If KPN does not meet the diversity goals and 'social return' requirements, this could impact KPN's future profitability (e.g. lower margins in business market for public sector), customer satisfaction and reputation. Restructurings could lead to less motivated personnel and/or key personnel leaving the company and thus loss of knowledge and continuity.	• Improve skilled and talented workforce by: - Innovative and inspiring talent-management programs to attract and maintain qualified staff (both from the Netherlands and abroad) - Discover new talent and make KPN more attractive for talented employees across the organization - Launch of a new labor-market strategy to attract external staff with new capabilities, e.g. via the new 'www.fieldlab.nl' website - Promote technical education initiatives at high schools and universities to attract new and diverse workforce • Clear communication to (key) staff about KPN's strategy and reasons for restructuring and value their opinions • Application of HR ideation campaigns to improve company-wide restructuring execution • Sustainable employability and mobility: support employees in acquiring different skills, enabling them to find a new role inside or outside KPN • Maintain or improve employee engagement and attractiveness as employer • Continued implementation of KPN's policy to improve diversity in KPN's workforce • Implementation of a strategic plan on inclusion and social return	**Likelihood** Medium **Impact** Medium **Trend** ↗ **Monitoring KPI:** • Employee engagement • % women in senior management • Ranking KPN in 'attractive employer' benchmarks
Adverse macro economic conditions	Although the current macroeconomic perspectives are still positive for the coming years, the economic climate could deteriorate in the longer term, for example due to continued political uncertainties in Europe and the United States and increasing protectionism in global trade. If the macroeconomic conditions worsen, this could lead to declining spending of customers in both the Consumer and Business market and higher bad debt, and will consequently lead to lower future revenue growth, profitability and cashflows.	• Close monitoring of and swift response to new market developments and trends, for example by drafting contingency plans such as plans for cost-cutting initiatives and restructurings • Lean operating model: acceleration of simplification and digitalization program. This will lead to improved time-to-market, better quality of service and a simplified and agile organization. Additionally, this will also lead to a structurally lower level of operational costs • Seizing new opportunities by innovation and introduction of new services, to compensate for (accelerating) declining telecom and IT businesses.	**Likelihood** Low **Impact** Low-Medium **Trend** → **Monitoring KPI** • Organic revenue growth

↗ risk is increasing (worsening) → risk is stable ↘ risk is decreasing (not as bad)

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Appendix 5: Glossary

This glossary lists the key terms and concepts included in the Integrated Annual Report.

3G
Third-generation mobile system, which is based on the UMTS universal standard.

4G
Fourth-generation mobile system, a standard for wireless communication delivering high-speed data for mobile phones and data terminals.

5G
Fifth-generation mobile system, a standard for wireless communication delivering high-speed data for mobile phones and data terminals, exceeding 4G speeds. 5G targets high data rates, reduced latency, energy saving, higher system capacity and massive device connectivity.

A

ACM (Authority for Consumers and Markets)
The ACM acts as a regulator in the Netherlands and is responsible for monitoring compliance with antitrust rules.

ADR
American depository receipt.

Adjusted revenues
Adjusted revenues are derived from revenues (including other income) and are adjusted for the impact of restructuring costs and incidentals. Incidentals are non-recurring transactions of EUR 5m or over unless significant for the specific reportable segment, which are not directly related to day-to-day operational activities.

Adjusted EBITDA AL
Adjusted EBITDA AL (adjusted EBITDA after leases) are derived from EBITDA and are adjusted for the impact of restructuring costs and incidentals and for lease costs, including depreciation of right-of-use assets and interest on lease liabilities. Incidentals are non-recurring transactions of EUR 5m or more unless significant for the specific reportable segment, which are not directly related to day-to-day operational activities.

AI (artificial intelligence)
AI is the intelligence demonstrated by machines.

API (application programming interface)
A digital socket that can provide developers with controlled access to internal services.

ARPU (average revenue per user)
ARPU is the sum of connection fees, monthly fixed subscription revenues, traffic revenues and gross service-provider revenues less related discounts during a one-month period, divided by the average number of customers during that month. Gross service-provider revenues represent revenues generated by third-party providers. KPN accounts for the net part as gross service-provider revenues.

Average 4G download speed
The average download speed is based on the results of a speedtest that customers initiate on 4G with their smartphone. Robot measurements and customers using networks other than KPN's are excluded from the results.

Average maximum download speed broadband fixed
The average maximum download speed that we report is the predicted technical speed, based on the best available technologies, per address. Figures are based on year-end data.

B

BCF (business control framework)
The BCF contains all corporate policies and guidelines that are mandatory for KPN segments and entities. It forms the cornerstone of the governance of the KPN Group.

B2B
Business-to-business, commercial transactions between businesses.

Broadband
Broadband refers to telecommunication that provides multiple channels of data over a single communications medium, typically using some form of frequency or wave division multiplexing.

C

Capex (capital expenditure)
Investments in property, plants, equipment and software.

CDP
The CDP (formerly the Carbon Disclosure Project) is a joint initiative of investors worldwide that questions and benchmarks listed companies on their approach to climate change.

Churn (calculated on an annual basis)
The number of customers no longer connected to an operator's network divided by the operator's customer base.

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Circular economy
The circular economy is a generic term for an industrial economy that is producing no waste and pollution and in which material flows are of two types: biological nutrients, designed to re-enter the biosphere safely, and technical nutrients, which are designed to circulate at high quality in the production system without entering the biosphere.

Circular Manifesto
Document signed by KPN and supplier to support KPN's circular goal of close to 100% circular products. By signing, KPN and supplier agree to collaborate in contributing to a more circular economy.

Climate-neutral
For KPN, climate-neutral means operating with zero net CO_2e emissions.

Cloud services
Cloud services are standardized IT capability (services, software or infrastructure) delivered via internet technologies in a pay-per-use, self-service way.

C2B
Consumer-to-business, a business model in which consumers create value and businesses consume that value.

CO_2e
Carbon dioxide equivalent, is a standard unit for measuring carbon footprints. The idea is to express the impact of each different greenhouse gas in terms of the amount of CO_2 that would create the same amount of warming. That way, a carbon footprint consisting of different greenhouse gases can be expressed as a single number.

Conflict minerals
Conflict minerals are minerals mined under conditions of armed conflicts and human rights issues. These minerals are used in a variety of products, including consumer electronic devices such as mobile phones.

Critical supplier
See high risk supplier.

CSR (corporate social responsibility)
CSR, to KPN, is the integrated vision of entrepreneurship, in which the company takes responsibility and creates value in economic (profit), ecological (planet) and social (people) terms. We incorporate CSR into our business and by doing so, take our social responsibility and contribute to societal challenges.

Customer base
Customer base is the total number of subscribers.

D

DEFRA
UK Department for Environment, Food & Rural Affairs. DEFRA has published conversion factors to calculate greenhouse gas emissions.

DJSI (Dow Jones Sustainability Index)
The DJSI series is a collection of indices that track the performance of companies that are frontrunners in terms of CSR. The DJSI is based on an analysis of corporate economic, environmental and social performance. There are several sub-indices based on geographical parameters.

DSL (digital subscriber line)
DSL is a technology for bringing high bandwidth information to homes and small businesses over copper PSTN lines. The widely used term xDSL refers to different variations of DSL, such as ADSL, HDSL, VDSL and SDSL.

DVB-T2 (Digital Video Broadcasting - Second Generation Terrestrial)
The extension of the television standard DVB-T, devised for the broadcast transmission of digital terrestrial television.

E

EBITDA
Operating result before depreciation and impairments of property, plant and equipment and amortization and impairments of intangible assets.

EBITDA AL
EBITDA AL (EBITDA after leases) are derived from EBITDA and adjusted for lease costs, including depreciation of right-of-use assets and interest on lease liabilities.

EcoVadis
EcoVadis is an international platform that assesses the material CSR impacts of companies. Purchasing organizations can integrate EcoVadis Scorecards into their day-to-day business practices driving their organization to make more sustainable procurement decisions, while positively incentivizing trading partners that align with their sustainability practices.

EEIO (environmentally extended input output data)
EEIO models estimate energy use and/or GHG emissions resulting from the production and upstream supply chain activities of different sectors and products. The resulting EEIO emissions factors can be used to estimate cradle-to-gate GHG emissions for a given industry or product category. EEIO models are derived by allocating national GHG emissions to groups of finished products based on economic flows between industry sectors.

Externally
An externality is an economic term referring to a cost or benefit incurred or received by a third party. However, the third party has no control over the creation of that cost or benefit.

F

FTE (full-time equivalent)
The equivalent of the number of employees with a full-time contract.

FttC (Fiber to the Curb)
FttC is defined as an access network architecture in which the final part of the connection occurs in the district distributor box in the street.

FttH (Fiber to the Home)
FttH is defined as an access network architecture in which the final part of the connection to the home also consists of optical fiber.

FttH households
FttH households are defined as premises to which an operator can connect in a service area. Fiber is available, at least, at the premises property boundary.

FttS (Fiber to the Sites)
FttS is defined as an access network architecture in which the final part of the connection to the mobile sites also consists of optical fiber.

FCF (Free cash flow)
FCF is defined as cash flow from continuing operating activities plus proceeds from real estate, minus capital expenditures (Capex), being expenditure on PP&E and software and adjusted for repayments of lease liabilities.

G

Gbps (Gigabit)
A gigabit is a unit denoting the speed of data transfer. It is the speed in billions of bits per second.

GHG (Greenhouse Gas) Protocol
The GHG Protocol is a multi-stakeholder partnership of business, non-governmental organizations (NGOs), governments and others that develop internationally accepted GHG accounting and reporting standards for organizations.

Green electricity
Green electricity is electricity from renewable sources. KPN only uses wind energy and electricity from biomass that does not compete with food production.

GRI (Global Reporting Initiative)
The Global Reporting Initiative is an organization that publishes international standards for CSR reporting.

H

High-risk supplier
Our procurement process includes an assessment of all new contracted suppliers, classifying them based on the potential social and environmental risk their operations, products and services represent. We assess this risk based on three parameters: geographical areas, spend and potential environmental impact of a supplier's operations, products or services. High-risk suppliers are audited by independent external auditors once every two to four years.

I

IT
IT refers to information technology.

IoT (Internet of Things)
The Internet of Things connects objects such as garbage bins or cars via a chip with the internet. This offers many opportunities, such as Smart City solutions.

IPTV
IPTV is a system through which television services are delivered using the internet protocol suite over a packet-switched network such as the internet. iTV is KPN's IPTV offering in the Netherlands.

ISDN (Integrated services digital network)
A form of digital telephony. It is an alternative to the analogue POTS. With ISDN, more data can be transported over a copper two-wire connection at the district level than is usually possible with POTS.

ISO (International Organization for Standardization)
This organization is responsible for international management standards such as ISO 14001, ISO 140064-1, ISO 27001 and ISO 22301 (mentioned in this report).

iTV
iTV stands for interactive TV. With iTV, the customer can easily choose when, where and which programs to watch.

J

JAC (Joint Audit Cooperation)
The JAC is a cooperation of 13 European telecommunication operators (including KPN) focusing on the social, ethical, and environmental conditions across their supply chains.

Appendices

K

KPN Mooiste Contact Fonds
This KPN foundation supports societal initiatives aimed at stimulating social contact, by combining people and technological resources to best advantage.

L

LGBTQI+
Lesbians, gays, bisexuals, transgenders, queers, intersexuals and people with other sexual and/or gender identity. KPN Pride is an inclusive community for LGBTQI+, and all colleagues (including heterosexuals) who are interested in LGBTQI+ subjects related to the KPN workfloor.

LoRa (Long Range)
Network architecture to connect millions of low-energy and low-data devices to the internet in a cost-effective way. This opens up countless application possibilities for KPN's Internet of Things (IoT).

LTE (Long-Term Evolution)
LTE, commonly marketed as 4G LTE, is a standard for wireless communication of high-speed data for mobile phones and data terminals.

M

M2M (machine-to-machine)
Direct communication between devices using any communications channel, including wired and wireless.

Market share
Market share is the percentage or proportion of the total available market that is being serviced by KPN. These figures are based on externally available market data, which may not be completely accurate, and may partially be based on estimates.

Mbps (Megabits per second)
A megabit is a unit denoting the speed of data transfer. It is the speed in millions of bits per second. The bandwidths of broadband networks are often indicated in Mbps.

MHz (Megahertz)
MHz is one million hertz (a unit of frequency).

MTA
MTA refers to mobile terminating access.

N

NPS (Net Promoter Score)
NPS is a tool for measuring customer loyalty, based on whether customers would recommend KPN to someone else.

Normalized EBITDA
Normalized EBITDA is defined as a 12-month rolling total EBITDA excluding restructuring costs, incidentals and major changes in the composition of the Group (acquisitions and disposals).

Normalized ETR
Normalized ETR is defined as the total ETR excluding incidentals (such as return to provisions), major changes in the composition of the group, changes in (de-)recognition of deferred taxes and changes in tax law.

Notice and Take Down code
A code that specifies how organizations have to deal with reports of unlawful content on the internet. Content is removed by the host following notice. Notice and take down is widely operated in relation to copyright infringement, as well as for libel and other illegal content We are committed to removing content related to Child Sexual Abuse Material within 24 hours after notification by our national hotline, Expertisebureau Online Kindermisbruik (Expertise Center for Online Child Abuse).

O

OTT (over-the-top)
In broadcasting, over-the-top content (OTT) refers to the delivery of audio, video, and other media over the internet for which no subscription to a traditional cable or satellite operator is required. A famous example is WhatsApp, which is replacing text messaging.

P

PSTN (Public Switched Telephone Network)
Globally used telephone network

R

RepTrak
RepTrak, developed by the Reputation Institute, is a method to calculate a reputation score of companies. KPN's reputation is based on three out of twelve RepTrak attributes that are kept confidential and are stable over the years.

Return on capital employed
Return on capital employed is calculated by the net operating profit less adjustments for taxes divided by capital employed. Net operating profit is the adjusted EBITA (excluding incidentals

and amortization of other Intangibles, and including restructuring costs). KPN defines capital employed as the carrying amount of operating assets and liabilities, which excludes goodwill and the other intangibles.

Roaming
Transfer of mobile traffic from one network to another, referring to the exchange of international mobile traffic.

S

Scope 1
Direct greenhouse gas emissions occurring from sources that are owned or controlled by an organization.

Scope 2
Indirect greenhouse gas emissions from the generation of purchased electricity, heating or cooling consumed by an organization.

Scope 3
Other direct greenhouse gas emissions as a consequence of the activities of the company, but occurring from sources not owned or controlled by an organization.

Service revenues
Service revenues are defined as the aggregate of connection fees, monthly subscription fees and traffic fees. The term service revenues refers to wireless service revenues.

#SMARTer2030
GeSI's SMARTer2030 report demonstrates how ICT initiatives can improve the quality of human life globally by 2030. In 2015, the #SMARTer2030 report was launched with the aim to extend our horizon to 2030 and to look at ICT-enabled sustainability from a holistic point of view. The translation of the #SMARTer2030 research into opportunities for KPN and the Netherlands followed in 2016.

SME
SME refers to small and medium enterprises.

SOC (Security Operations Center)
The SOC monitors the high-risk systems of KPN in order to act quickly in case of security risks or incidents.

SoHo
SoHo refers to Small Office/Home Office companies.

Stakeholder
Stakeholders are the people or organizations with an interest in the company, such as customers, employees, shareholders, suppliers, governments and media.

Subscriber
A subscriber is defined as an end-user with a connection to the mobile or fixed networks and/or service platforms of KPN.

Sustainable Development Goals (SDGs)
On 25 September 2015, countries within the United Nations adopted 17 goals to end poverty, protect the planet, and ensure prosperity for all as part of a new sustainable development agenda. Each goal has specific targets to be achieved in 2030. Also known as Global Goals.

T

Tier standards (I to IV)
Telecommunications Infrastructure Standard for data centers. Tier levels describe the availability of data at a location. The higher the tier, the greater the availability. Tier IV is the highest level and entails independent dual-powered cooling and expected data availability of 99.995% or higher.

Transparency Benchmark
The Transparency Benchmark is a yearly benchmark that investigates the content and quality of the sustainability reports of Dutch companies.

Triple-play
Term used to describe the provision of telephony, internet and television services to a household by a single provider.

TSR (total shareholder return)
A measure of the performance of different companies' stocks and shares over time. TSR is calculated from the growth in capital from purchasing a share in the company, assuming that the dividends are reinvested each time they are paid. This growth is expressed as a percentage as the compound annual growth rate.

V

Value over volume
Term used to describe the strategy to have more focus on value instead of numbers and sales.

VBDO (Vereniging van Beleggers voor Duurzame Ontwikkeling)
The Dutch Association of Investors for Sustainable Development (VBDO) works to create a sustainable capital market, a market that considers not only financial criteria but also non-financial, social and environmental criteria. VBDO's vision is to increase sustainability awareness among companies and investors.

Appendices

Virgin materials
Materials sourced directly from nature in their raw form, such as wood or metal ores. Manufacturing products using virgin materials uses much more energy and depletes more natural resources, as opposed to producing goods using recycled materials.

Virtualization
The separation of the physical hardware and the functions to run the network in software.

VoLTE (Voice over LTE)
VoLTE allows the voice service to be delivered as data flows within the LTE data bearer.

W

Weighted downtime reduction
The weighted downtime concerns the average monthly time period in which a combination of KPN platforms and systems is inaccessible to clients due to major incidents, weighted by the impact of this downtime.

WBSO (Wet bevordering speur- en ontwikkelingswerk)
The WBSO is a subsidy that is intended for every entrepreneur in the Netherlands who conducts research into technological innovations.

Appendices

Appendix 6: Social figures

Table 1: Total number of employees (in FTEs and number)

	2019 FTE	2019 number	2018 FTE	2018 number	2017 FTE	2017 number
KPN The Netherlands	11.248	11.913	12,412	13,157	13,021	13,838

Table 2: Employee contract type (in % of total number of employees)

		2019	2018	2017
KPN The Netherlands	Permanent	94.4	93.6	94.7
	Temporary	5.6	6.4	5.3

Table 3: Employee employment type (in % of total numbers of employees)

		2019	2018	2017
KPN The Netherlands	Part-time	26.6	26.9	26.7
	Full-time	73.4	73.1	73.3

Table 4: Composition of employees per age category (in % of total numbers of employees)

		2019	2018	2017[1]
KPN The Netherlands	<30 years	10.0	10.6	1.5
	30 - 50 years	52.9	53.6	76.1
	> 50 years	37.1	35.8	22.4

1 The 2017 numbers are based on age groups 16-24, 25 to 54 and 55 and older.

Table 5: Spread of KPN employees by region (in FTE and numbers, both as % of total)

		2019	2018	2017
the Netherlands	FTE	99.9	99.8	98.1
	number	99.9	99.8	98.2
Other	FTE	0.1	0.2	1.9
	number	0.1	0.2	1.8

Table 6: Gender proportion among employees (in FTE and numbers, both as % of total)

		2019 FTE	2019 number	2018 FTE	2018 number	2017 FTE	2017 number
KPN The Netherlands	male	80.7	78.9	80.2	78.2	79.3	77.3
	female	19.3	21.1	19.8	21.8	20.6	22.7

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Table 7: Gender proportions at management level (as a % of total top and middle management)

		2019 Top	2019 Middle	2018 Top	2018 Middle	2017 Top	2017 Middle
KPN The Netherlands	male	77.4	83.8	78.2	83.8	79.7	83.9
	female	22.6	16.2	21.8	16.2	20.3	16.1

Table 8: Employees covered by a collective bargaining agreement (in numbers and % of total number of employees)

		2019	2018	2017
KPN The Netherlands	number	10,091	11,117	11,808
	%	84.8	84.5	85.3

Table 9: Employee training: average number of hours and costs (in hours and euros per FTE)

		2019	2018	2017
KPN The Netherlands	hours/FTE	87.2	77.1	66.4
	euro/FTE	2,047	1,895	1,517

Table 10: Employee turnover (as a % of total employee numbers)

		2019	2018	2017
KPN The Netherlands	intake	2.8	4.2	3.3
	exit	19.8	14.4	10.3

Table 11: Accident rate (in accidents per 100 FTEs)

	2019	2018	2017
KPN The Netherlands	0.43	0.20	0.08

Table 12: Absentee rate (as a % of total employee numbers)

	2019	2018	2017
KPN The Netherlands	4.40	4.25	4.09

Appendices

Appendix 7: Environmental figures

1 As outlined in the Combined Independent Auditor's Report (see page 165-173 of our Integrated Annual Report 2019), this Appendix is part of the assurance scope of EY's assurance procedures over KPN's 2019 sustainability information.
2 Scoping and calculation methodology of the reported items is specified In Appendix 3 (page 180-193 of our Annual Report 2019)
3 Coverage of all figures according to materiality assessment (98% of operational costs)
4 NL|DC was sold in 2019. Where material, environmental figures have been corrected unless stated otherwise.

Table 1: Energy consumption (in PJ)

	Target 2030 compared to base year	target 2022 compared to base year	2019	2018	2017	2016	2010 (base year)
The Netherlands		–	2.728	2.841	2.820	2.955	3.662
KPN non–NL entities		–	–	–	0.012	0.019	0.217
KPN Group (excluding NL|DC)	**-44%**	**–34%**	**2.728**	**2.841**	**2.832**	**2.974**	**3.879**
Energy directly consumed		–	0.386	0.445	0.483	0.489	–
Energy indirectly consumed		–	2.342	2.396	2.349	2.485	–
KPN Group (excluding NL|DC)	**-44%**	**–34%**	**2.728**	**2.841**	**2.832**	**2.974**	**3.879**
NL|DC (sold in 2019)		–	0.299	0.393	0.400	0.408	0.365
Total		**–**	**3.027**	**3.234**	**3.232**	**3.382**	**4.244**

1 KPN Group energy consumed (excluding NL|DC) decreased by 30% compared to base year.

Table 2: Electricity consumption (in GWh)

	Target 2030 compared to base year		Target 2022 compared to base year		2019[1]		2018		2017		2016		2010 (base year)	
	NL	KPN Group	NL	KPN Group	NL	KPN Group	NL	KPN Group	NL	KPN Group	NL	KPN Group	NL	KPN Group
Network					580	580	595	595	581	583	606	608	694	697
Offices and shops					37	37	36	36	33	34	39	42	70	72
KPN Group (excluding NL|DC)	**-33%**		**-27%**		**617**	**617**	**631**	**631**	**614**	**617**	**645**	**650**	**764**	**769**
NL|DC (sold in 2019)					83	83	107	107	109	109	111	111	99	99
Total					**700**	**700**	**738**	**738**	**723**	**726**	**756**	**761**	**863**	**868**

1 KPN Group electricity consumption decreased by 20% versus base year

Table 3: Fuel consumption, lease vehicle fleet (petrol, diesel and LPG)

	Unit	target as from 2025	target 2020	target 2019[1]	2019	2018	2017	2016	2010 (baseyear)
KPN The Netherlands (excluding NL|DC)	1,000 liter	100% inflow of CO_2e neutral cars	–50%	-49%	8,457	9,347	9,429	10,126	16,597
NL|DC (sold in 2019)	1,000 liter				66	65	63	65	119
Total	**1,000 liter**				**8,523**	**9,412**	**9,492**	**10,191**	**16,716**

1 KPN The Netherlands fuel consumption decreased by 49% versus base year

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Table 4: Other Energy consumption KPN Group

	Unit	2019	2018	2017	2016
Natural gas					
KPN Group (excluding NL|DC)	1,000 m3	2,580	3,424	4,390	3,774
NL|DC (sold in 2019)	1,000 m3	49	74	79	82
Total natural gas		**2,629**	**3,498**	**4,469**	**3,856**
Heating purchased	GJ	27,618	29,653	32,279	39,594
Cooling purchased	GJ	92,891	94,571	95,139	102,980
Diesel for emergency power generators					
KPN Group (excluding NL|DC)	1,000 liter	116	103	129	119
NL|DC (sold in 2019)	1,000 liter	56	81	63	122
Total diesel for emergency power generators		**172**	**184**	**192**	**241**

Table 5: CO_2e emissions own operations Scope 1 and 2 (in kTon)[1]

	target 2050	2019	2018	2017	2016	2010 base year
Scope 1 NL	0.0	0.0	0.0	0.0	0.0	58.8
Scope 2 NL	0.0	0.0	0.0	0.0	0.0	35.9
KPN Group (excluding NL|DC)	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**94.7**
KPN non–NL entities	0.0	0.0	0.0	0.0	0.0	25.0
NL|DC (sold in 2019)	0.0	0.0	0.0	0.0	0.0	44.0
Total	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**163.7**

1 The reported emissions in the table are net scope 1 and scope 2 market based. In the table on page 50 both net and gross scope 1 emissions are reported as well as the location and market based scope 2 emissions.

Table 6: Energy efficiency and Carbon intensity indicators

	target 2020	2019	2018	2017	2016	2010
Ton CO_2e per Gb/s KPN Netherlands (2010=100)	0.0	0.0	0.0	0.0	0.0	100.0
GWh per Gb/s Network Netherlands (2010 =100)	5.2	5.4	5.6	7.8	11.2	100.0

Table 7: CO₂e emissions Scope 3 (in kTon) KPN The Netherlands

	target 2040 compared to base year	target 2025 compared to base year	Target 2020 compared to base year	2019[1]	2018	2017	2016	2014 base year
CAT1 Purchased goods and services				498.7	518.6	544.3	526.0	535.1
CAT2 Capital goods				198.5	174.9	162.8	200.0	237.5
CAT3 Fuel and energy related activities				5.1	9.7	26.9	40.7	93.0
CAT4 Upstream transportation and distribution				-	-	-	-	-
CAT5 Waste generated in operations				0.1	0.5	0.1	0.0	0.3
CAT6 Business travel				3.2	3.1	3.5	3.3	3.2
CAT7 Employee commuting				16.5	15.9	15.5	16.6	17.7
CAT8 Leased assets				–	–	–	–	–
CAT9 Downstream transportation and distribution				17.6	18.3	19.6	14.9	23.0
CAT10 Processing of sold products				–	–	–	–	–
CAT11 Use of sold products				2.1	2.3	2.8	3.1	3.7
CAT12 End-of-life				–	–	–	–	–
CAT13 Downstream leased assets				135.1	135.0	146.8	147.1	128.0
CAT14 Franchises				–	–	–	–	–
CAT15 Investments				–	–	–	–	–
Total CO_2e emissions	**-50%**	**-20%**	**-17%**	**876.9**	**878.3**	**922.3**	**951.7**	**1,041.4**
Total upstream CO_2e emissions				**722.1**	**722.7**	**753.0**	**786.6**	**886.7**
Total downstream CO_2e emissions				**154.9**	**155.6**	**169.3**	**165.1**	**154.7**

1 Due to refining our methodology, we restated our scope 3 figures for previous years. Our emissions in the value chain decreased by 16% compared to base year.

Table 8: Other environmental impacts KPN Group

	Unit	target 2020	2019	2018	2017	2016
Materials usage						
Cable length [1,2]	1,000 km		373	367	364	359
Paper consumption	Tons		268	459	505	1,042
% FSC or PEFC	%		100%	100%	100%	100%
Coolants (e.g. R407C and R417A)						
KPN Group (excluding NL|DC)	kg		657	825	838	766
NL|DC (sold in 2019)	kg		0	157	51	263
Total	kg		657	982	889	1,029
Water						
Consumption offices and shops (excluding NL|DC)	1,000 m3		52.4	66.5	76.0	89.1
Consumption operations (excluding NL|DC)	1,000 m3		31.7	51.7	91.7	80.0
Total KPN Group (excluding NL|DC)	1,000 m3	80	84.1	118.2	167.7	169.1
NL|DC (sold in 2019)	1,000 m3		92.3	130.0	123.3	125.8
Total	1,000 m3		176.4	248.2	291.0	294.9

1 Including tubes used for cables
2 Excluding Reggefiber

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Table 9: Estimated avoided energy consumption and CO_2e emissions by usage of KPN products and services

Estimated avoided energy consumption (in PJ)[1]	target 2020	target 2019	2019	2018	2017	2016
Teleworking (enabled by KPN connectivity)[2]			2.154	2.144	1.434	1.428
Dematerialisation			0.169	0.131	0.130	0.076
KPN Audioconferencing			0.109	0.135	0.130	0.140
KPN Video Conferencing			0.050	0.053	0.056	0.004
KPN Hosting services			0.032	0.030	0.035	0.041
KPN iTV Cloud solution			0.012	0.018	0.018	0.017
Total estimated avoided energy consumption (excluding NL|DC)			2.527	2.511	1.804	1.706
Total energy consumption KPN (excluding NL|DC)			2.728	2.841	2.832	2.974
% Avoided energy consumption compared to energy consumption KPN	**94%**	**89%**	**93%**	**88%**	**64%**	**57%**
Estimated avoided energy consumption NL|DC services (NL|DC sold in 2019)			N/a	0.120	0.123	0.111
Total energy consumption KPN (including NL|DC)			N/a	3.234	3.232	3.382
% Avoided energy consumption compared to energy consumption KPN (including NL|DC)			N/a	81%	60%	54%

Estimated avoided CO_2e –emissions (in kTon)[1]	2019	2018	2017	2016
Teleworking (enabled by KPN connectivity)[2]	173.0	172.3	114.5	114.7
Dematerialization	12.4	10.4	10.3	7.4
KPN Audioconferencing	8.3	10.2	10.0	10.7
KPN Video Conferencing	3.7	3.8	4.2	0.3
KPN Hosting services	3.7	3.5	4.0	4.7
KPN iTV Cloud solution	1.8	2.5	2.5	2.3
Total estimated avoided carbon emissions	**203.0**	**202.7**	**145.4**	**140.1**
Estimated avoided emissions NL|DC services	N/a	13.8	14.1	12.7
Total estimated avoided carbon emissions (including NL|DC)	N/a	216.4	159.5	152.8

Avoided Particulate matter emissions (PM_{10}) in tons[3]	2019	2018	2017	2016
Total avoided PM_{10} emissions	410	not calc.	not calc.	not calc.

1 NL|DC is sold in 2019. NL|DC services (KPN Colocation services) are therefore excluded.
2 In 2018 we updated our Teleworking calculation methodology using more accurate data from CBS on the number of Teleworkers in the Netherlands. The figure was higher than the number we used in previous years.
3 PM_{10} is particulate matter 10 micrometers or less in diameter.

Table 10: Circular information on reuse, recycling and disposal

Total outflow[1]		Target 2020	Target 2019	Result 2019	Result 2018	Result 2017	Result 2016
Total volume non–hazardous materials & waste	**ton**			**6,538**	**6,494**	**5,344**	**6,417**
Reuse	ton			480	497	347	332
Recycling	ton			4,486	4,416	3,135	3,684
Incineration (net)[2]	ton			1,543	1,547	1,833	2,160
Landfill	ton			29	34	29	241
Total volume hazardous materials & waste	**ton**			**148**	**105**	**56**	**275**
Reuse	ton			–	–	–	–
Recycling	ton			114	75	53	171
Incineration (net)	ton			31	20	3	101
Landfill	ton			3	10	–	3
Total volume	**ton**			**6,686**	**6,599**	**5,400**	**6,692**
% Reuse	%			7%	7%	6%	12%
% Recycling	%			69%	68%	59%	34%
% Reuse and Recycling[3]	**%**	**79%**	**77%**	**76%**	**75%**	**65%**	**46%**
% Incineration (net)	%			24%	24%	34%	51%
% Landfill	%			0%	1%	1%	3%
Collected equipment							
Modems and TV settop boxes	%	80%	70%	78%	67%	69%	74%
Mobile phones[4]	%			5%	6%	6%	9%

1 Figures are excluding NL|DC (sold in 2019).
2 Residual waste is incinerated which leaves a residue. After incineration, part of this residue is recycled (e.g. in construction applications). To determine net–incineration as reported, we deduct the volume of residue after incineration which is recycled and the volume which is landfilled.
3 In 2016 we calculated the reuse and recycling rate based on a partial scope (i.c. 42% of total volume)
4 Percentages 2017 and 2018 have been restated due to expansion of scope.

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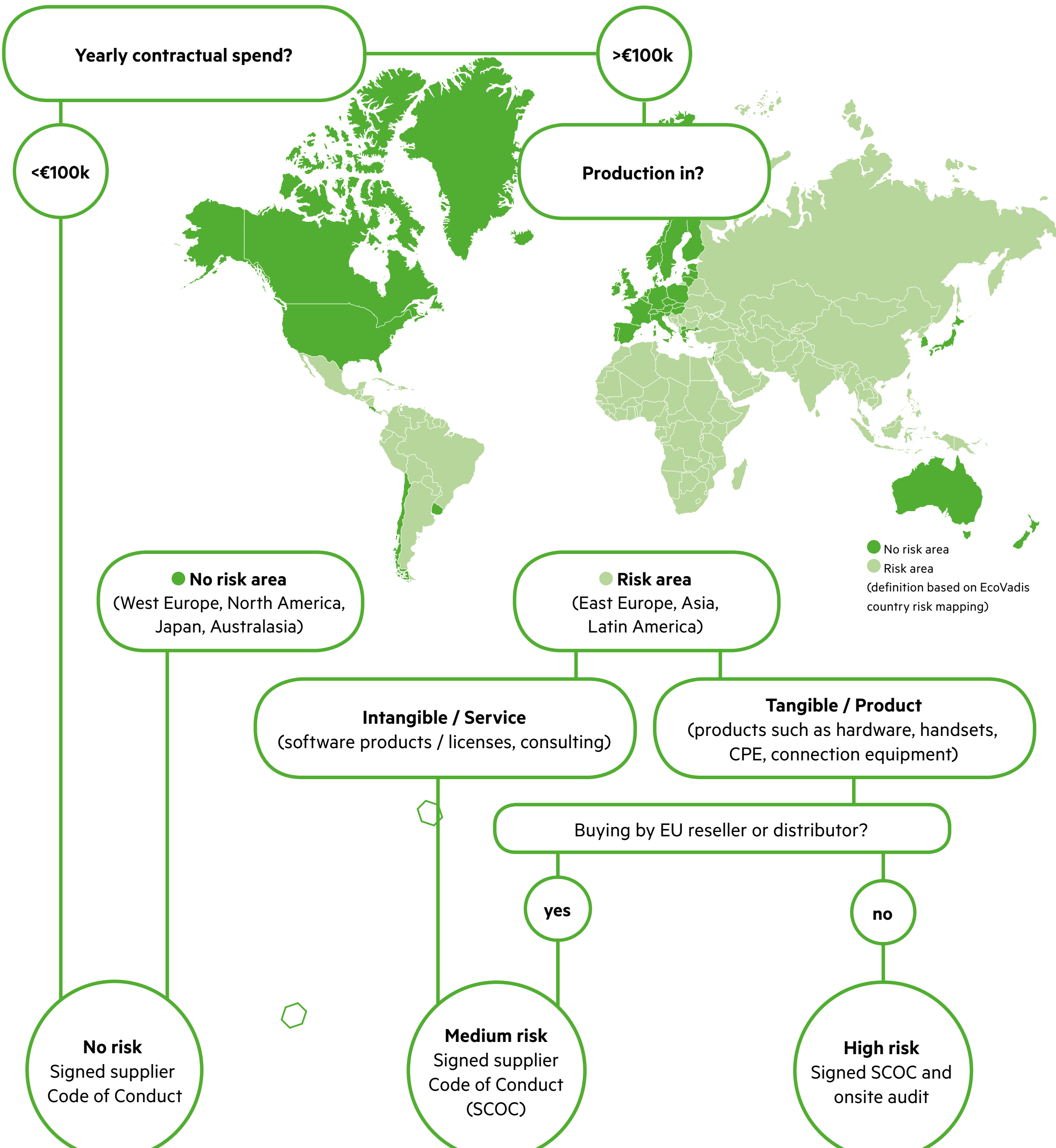
Appendix 8: Supply chain

Risk level decision maker



Assessing our suppliers

KPN works together with suppliers in order to purchase their products and services. We critically review these suppliers in terms of their environmental impact and the working conditions of their staff.
Our sourcing process (new, extension or renewal of products or services) therefore includes a qualification process. This entails classifying the supplier based on the potential social and environmental risks that its operations, products and services represent.

We assess these risks based on three parameters (see decision tree on the previous page):
- Geographical areas
- Spend
- Potential environmental impact of a supplier's operations, products or services

For the definition of the risk of countries of production we use the EcoVadis country risk mapping.

In 2019, we identified 39 critical suppliers based on the definition above.

Total number of suppliers	2108
High risk suppliers	39
Medium and low risk suppliers	2069

Critical Tier I, Tier II, Tier III and Tier IV suppliers to KPN are audited by the Joint Audit Cooperation (JAC) association.
In cooperation with other JAC members, audits were carried out in production plants (Tier I, II, III and IV) located in Asia, Latin America and Eastern Europe in the following countries:
- Brazil
- China
- India
- Malaysia
- Taiwan
- Thailand
- Turkey
- Vietnam

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Appendix 9: GRI Index

GRI Standard	#	GRI Disclosure	Page number(s), URL(s) and/or information	Omission
General Disclosures				
Organization Profile	102-1	Name of the organization	Koninklijke KPN N.V.	
	102-2	Activities, brands, products, and services	Our purpose and the world around us, p. 8 Strategy, key performance and value creation model, p. 12 Flexible, simple and converged products and services p. 35 KPN does not sell products that are banned in certain markets. However, some aspects of our products are subject to stakeholder questions and public debate. This primarily concerns EMF (electromagnetic fields), see https://overons.kpn/en/kpn-in-the-netherlands/our-network/health - and conflict minerals. Through our membership of EICC and GeSI, we support initiatives to prevent human rights violations and the financing of armed conflicts by mineral extraction. KPN will make use of a mineral mapping program which is in development in cooperation with social organizations, thereby responding to the call made by MakeITfair, an organization which is campaigning for the ICT sector to be more transparent about the origin of minerals. See: https://overons.kpn/en/kpn-in-the-netherlands/sustainabillity/suppliers	
	102-3	Location of headquarters	Rotterdam, the Netherlands	
	102-4	Location of operations	KPN operates in the Netherlands and the Americas	
	102-5	Ownership and legal form	Corporate governance, p. 58	
	102-6	Markets served	Our purpose and the world around us, p. 8 Strategy, key performance and value creation model, p. 12 Converged smart infrastructure, p. 32 Flexible, simple and converged products and services, p. 35 Focused innovation and digitalization, p. 39	
	102-7	Scale of the organization	Strategy, key performance and value creation model, p. 12 Shareholder value, p. 21 Sustainable employability, p. 45 Consolidated Financial Statements, p. 98	
	102-8	Information on employees and other workers	Sustainable employability, p. 45 Appendix 6: Social figures, p. 207 In 2019, about 97% of the KPN workforce is represented in a formal joint management-worker health and safety committee, which supports and advises on occupational health and safety programs. All employees (on the payroll as regular staff) are eligible for regular performance and career development reviews. 65.4% of all employees had at least one performance and career development review in 2019. 39.7% of all employees had reviews on a more regular basis. 34.6% did not have any review in 2019. (This is excluding other participations). The percentage difference between the average salary of men and women in the collective labor agreement (CLA) scales decreased from 2.25% in 2018 to 1.98% in 2019	Reporting on employees of contractors is considered not applicable to KPN. Our stakeholders do not request us to report on such information.
	102-9	Supply chain	Sustainable employability, p. 45 Environmental performance and responsible supply chain, p. 48 Long-term and short-term impact on society, p. 26	

GRI Standard	#	GRI Disclosure	Page number(s), URL(s) and/or information	Omission
	102-10	Significant changes to the organization and its supply chain	Strategy, key performance and value creation model, p. 12 Shareholder value, p. 21 Consolidated Financial Statements p. 98 Flexible, simple and converged products and services, p. 35 Converged smart infrastructure, p. 32 Sustainable employability, p. 45 Environmental performance and responsible supply chain, p. 48 Corporate governance, p. 58 **Supply chain management** In 2019, JAC raised 93 environmental issues at suppliers following on-site audits. 126 environmental issues were resolved during 2019 (these also include issues raised in previous years). 69 of 93 issues raised in 2019 are still pending. KPN has about 39 high risk suppliers. In 2019, no supplier relations were terminated. In 2019, JAC raised 330 CSR issues at suppliers following on-site audit relating to working hours and health & safety at suppliers. 395 issues in these two categories were resolved during 2019 (these included issues from previous years). 235 of 330 issues raised in 2019 are still pending. In 2019, JAC has raised 419 issues relating to human rights (these include the following auditing categories: health & safety, working hours, child labor & juvenile workers, wages & compensation, forced labor & prison labor, discrimination, disciplinary practice and freedom of association). 605 were resolved during 2019 (including issues raised in previous years). 295 out of 419 issues raised in 2019 are still pending. In 2019, JAC raised 12 CSR issues at suppliers following on-site audits relating to child labor & juvenile workers. 9 issues were resolved during 2019 (including issues raised in previous years). 6 of 12 issues raised in 2019 are still pending. In 2019, JAC has raised 55 issues relating to business ethics (including corruption). 94 issues were resolved during 2019 (including issues raised in previous years). 38 of 55 issues raised in 2019 are still pending. In 2019, JAC raised 14 CSR issues at suppliers following on-site audits relating to forced labor & prison labor. 11 of these issues were resolved during 2019 (including issues raised in previous years). 10 of 14 issues raised in 2019 are still pending. In 2019, JAC has raised 567 CSR issues overall, of which 55 relating to business ethics (including corruption). 94 issues related to business ethics were resolved during 2019 (including issues raised in previous years). 402 out of 567 issues raised in 2019 are still pending.	
	102-11	Precautionary principle or approach	Compliance and risk, p. 66 For our approach to EMF, see: https://overons.kpn/en/kpn-in-the-netherlands/sustainabillity/working-together	
	102-12	External initiatives	The most important charters, principles, or other initiatives to which KPN subscribes or which KPN endorses are: UN Global Compact UN Declaration of Human Rights International Labor Organization (ILO) OECD Principles of the World Economic Forum RE100 For more information and context, see: https://overons.kpn/en/kpn-in-the-netherlands/sustainabillity/working-together	

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GRI Standard	#	GRI Disclosure	Page number(s), URL(s) and/or information	Omission
	102-13	Membership of associations	Our most important memberships are: GeSI ETNO Green GrId Teleworking Forum Mobility Management Task Force UN Global Compact ITU Nederland ICT ECP For more information and the most recent overview of memberships, see: https://overons.kpn/en/kpn-in-the-netherlands/sustainabillity/working-together For information on lobbying activities, see: Appendix 3: Transparency, p. 180	
Strategy	102-14	Statement from senior decision-maker	CEO letter to the stakeholders, p. 4	
	102-15	Key impacts, risks, and opportunities	In the sections 'Our purpose and the world around us' and 'Strategy, key performance and value creation model' we describe the challenges KPN faces, including the way KPN responds and regards them as challenging opportunities. Our key impacts are displayed in the value creation model and explained in 'Long-term and short-term impact on society'. Our purpose and the world around us, p. 8 Strategy, key performance and value creation model, p. 12 Long-term and short-term impact on society, p. 26 In the section 'Environmental performance and responsible supply chain' we describe the key impacts of climate change to our business, and the way we turned them into business opportunities. These business opportunities are translated into KPIs and include targets, results, goals and evaluation processes. The Board of Management has final responsibility. Environmental performance and responsible supply chain, p. 48 Our CSR governance is described in our 'Corporate governance' chapter, p. 58 In our 'Compliance and risk' section, we describe the main risks KPN faces. The environmental, privacy and security risks are integrated in our risk systems and part of the top risks of KPN. Compliance and risk, p. 66	
Ethics and integrity	102-16	Values, principles, standards, and norms of behavior	Remuneration Report, p. 86 Safeguarded privacy and security p. 42 Sustainable employability p. 45 Compliance and risk, p. 66 Environmental performance and responsible supply chain p. 48 For more information, see our Code of Conduct and the KPN SpeakUp Line: https://ir.kpn.com/websites/kpn/English/7050/code-of-conduct.html For more information on our management approach on privacy and security, see Security link at: https://overons.kpn/en/kpn-in-the-netherlands/security	

GRI Standard	#	GRI Disclosure	Page number(s), URL(s) and/or information	Omission
	102-17	Mechanisms for advice and concerns about ethics	Employees can seek advice and report violations on ethical and lawful behavior by contacting the KPN Helpdesk Security, Compliance and Integrity. All reports made to this helpdesk are registered. In 2019, 4,065 reports have been made to the helpdesk. However, KPN only registers reports on violations of the Code of Conduct and the subcodes (which include all company policy on ethical and lawful behavior) including the results of formal investigation and follow-up in terms of corrective measures. The system is not yet designed to be able to register requests for advice separately. Reports on possible violations of the KPN Code of Conduct or subcodes (which include all company policy on ethical and lawful behavior) are registered by the KPN Helpdesk Security, Compliance and Integrity. In 2019, 0 reports of possible violations of the Code of Conduct and 1,209 reports on possible violations of the subcodes have been registered. In 112 occasions, these were followed by corrective measures. KPN does not register the number of complaints about breaches of the company Code or other ethical issues at the helpdesks, social media and mvo@kpn.com. For the Code and more information on anonymous reporting, see: https://ir.kpn.com/websites/kpn/English/7050/code-of-conduct.html Compliance and risk, p. 66	
Governance	102-18	Governance structure	Corporate governance, p. 58 Compliance and risk, p. 66 Composition of the boards, p. 73	
	102-19	Delegating authority	Corporate governance, p. 58 Compliance and risk, p. 66 Composition of the boards, p. 73 Supervisory Board Report, p. 80	
	102-20	Executive-level responsibility for economic, environmental, and social topics	Corporate governance, p. 58 Composition of the boards, p. 73 Supervisory Board Report, p. 80	
	102-21	Consulting stakeholders on economic, environmental, and social topics	Corporate governance, p. 58 Composition of the boards, p. 73 Appendix 3: Transparency, materiality and stakeholder engagement, p. 180	
	102-22	Composition of the highest governance body and its committees	Composition of the boards, p. 73 Supervisory Board Report, p. 80 KPN's Supervisory Board members represent amongst others our shareholders and society. Their competences are broad, and cover a range from expert financial knowledge towards green energy solutions and societal development. For more information on the background of our Supervisory Board members, please see: https://ir.kpn.com/websites/kpn/English/7030/supervisory-board.html	
	102-23	Chair of the highest governance body	Composition of the boards, p. 73	
	102-24	Nominating and selecting the highest governance body	Supervisory Board Report, p. 80 Corporate governance, p. 58	
	102-25	Conflicts of interest	Remuneration Report, p. 86 Corporate governance, p. 58 Supervisory Board Report, p. 80	
	102-26	Role of highest governance body in setting purpose, values, and strategy	Supervisory Board Report, p. 80 Composition of the boards, p. 73 Corporate governance, p. 58 Compliance and risk, p. 66	
	102-27	Collective knowledge of highest governance body	Composition of the boards, p. 73 Supervisory Board Report, p. 80 Corporate governance, p. 58 Compliance and risk, p. 66	

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GRI Standard	#	GRI Disclosure	Page number(s), URL(s) and/or information	Omission
	102-28	Evaluating the highest governance body's performance	Supervisory Board Report, p. 80	
	102-29	Identifying and managing economic, environmental, and social impacts	Compliance and risk, p. 66	
	102-30	Effectiveness of risk management processes	Compliance and risk, p. 66 Supervisory Board Report, p. 80	
	102-31	Review of economic, environmental, and social topics	Compliance and risk, p. 66	
	102-32	Highest governance body's role in sustainability reporting	Steering Committee Integrated Reporting. The Board of Management has final responsibility for the Integrated Annual Report. Corporate governance, p. 58 Appendix 3: Transparency, materiality and stakeholder engagement, p. 180	
	102-33	Communicating critical concerns	Critical concerns are communicated on a quarterly basis to both the Board of Management and the Supervisory Board. This communication consists of a GRIP report, an external audit report and an internal audit report. The GRIP report is most comprehensive and includes all risks for KPN communicated by risk managers. The external audit report comprises mostly financial risks for KPN whereas the internal audit report reports financial and IT security risks. The Board of Management closely monitors all risks and defines procedures and working methods for critical risks. All risks are reviewed by the Audit Committee.	
	102-34	Nature and total number of critical concerns	Reference omitted	The nature and number of critical concerns raised during 2019 cannot be communicated, as this concerns sensitive information.
	102-35	Remuneration policies	Remuneration Report, p. 86 Supervisory Board Report, p. 80	
	102-36	Process for determining remuneration	Supervisory Board Report, 80, Remuneration Report, p. 86	
	102-37	Stakeholders' involvement in remuneration	Supervisory Board Report, p. 80	
	102-38	Annual total compensation ratio	We monitor the ratio in annual total compensation for our employees in the main country of operation: the Netherlands. The basis for determining the ratio is the pension base salary, which includes all fixed components of the salary of our employees. For the calculation, we use the annualized salary as paid on 31 December of the reporting year. This is not by definition a full time salary, part time salaries are also included. All bonuses paid during 2019 are included in the calculation, just as the value of vested shares or phantom shares received by employees in the reporting year. For the reporting year 2019, the ratio of annual total compensation of the highest-paid individual to the median annual total compensation is 24.9/1. Due to changes in management, the ratio between the highest paid individual and median salary is lower than 2018. The total annual compensation of the highest paid individual is predominately defined by incentives. Consequently this results in highly fluctuating total annual compensation year-on-year even though base payments remains unchanged.	

GRI Standard	#	GRI Disclosure	Page number(s), URL(s) and/or information	Omission
	102-39	Percentage increase in annual total compensation ratio	We monitor the ratio in annual total compensation for our employees in the main country of operation, the Netherlands. The basis for determining the ratio is the pension base salary, which includes all fixed components of the salary of our employees. For the calculation, we use the annualized salary as paid on 31 December of the reporting year. This is not by definition a full time salary, part time salaries are also included. All bonuses paid during 2019 are included in the calculation, just as the value of vested shares or phantom shares received by employees in the reporting year. For the reporting year 2019, the annual total compensation of the highest paid individual decreased with 0.1% in 2019 (compared with 2018) and the annual total compensation of the median increased with 5.3% in 2019 (compared with 2018). The ratio of the percentage increase of the highest paid individual to the increase of the median annual total compensation of 2019 is +0.02/1.	
Stakeholder engagement	102-40	List of stakeholder groups	Our purpose and the world around us, p. 8 Appendix 3: Transparency, materiality and stakeholder engagement, p. 180	
	102-41	Collective bargaining agreements	Appendix 6: Social figures, p. 207 This indicator supports Principles 1 and 3 of the UN Global Compact.	
	102-42	Identifying and selecting stakeholders	Our purpose and the world around us, p. 8 Appendix 3: Transparency, materiality and stakeholder engagement, p. 180 KPN selects stakeholders based on their relevance to the IT industry and to KPN's CSR themes. They are also organizations or persons (or their representatives) with whom we have a formalized contractual or business relationship, such as customers, investors, employees and suppliers. A major additional criterion is whether they had previously indicated their desire to be involved in KPN's CSR policy. The other category of stakeholders concerns social organizations with which we do not have a business relationship, but whose views we value because KPN's operations impact on the interests they represent. We very much wish to engage in dialogue with authoritative, influential organizations, such as the ETNO, MVO Nederland, Circle Economy or the Nationaal Ouderenfonds, an organization representing senior citizens in the Netherlands. It exceeds our capacity to open up the dialogue to every social organization that works on a particular subject.	
	102-43	Approach to stakeholder engagement	Customer value, p. 18 Appendix 3: Transparency, materiality and stakeholder engagement, p. 180 KPN does not engage with stakeholders exclusively as part of the report preparations process, although all stakeholders input is considered to be of potential value to the report. KPN wants to know what topics stakeholders deem important and actively respond to their rising demands. One way to interact with its stakeholders is through sponsoring. In 2019 KPN spent EUR 8,525,817 and 6,659 hours on donations, sponsoring and community projects. This amount also includes a calculation of the time spent by our staff on volunteer work. The above amount is composed as follows: Cash contributions (+/-83% of total expenditure) Time (+/-3% of total expenditure) In-kind giving (+/-3% of total expenditure) Management overhead (+/-11% of total expenditure)	
	102-44	Key topics and concerns raised	Our purpose and the world around us, p. 8 Customer value, p. 18 Appendix 3: Transparency, materiality and stakeholder engagement, p. 180	
Reporting practice	102-45	Entities included in the Consolidated Financial Statements	The basis for the entities covered in the Consolidated Financial Statements is KPN's legal structure. All entities covered by the Consolidated Financial Statements are also included in Corporate governance, p. 58 Consolidated Financial Statements, p. 98	
	102-46	Defining report content and topic Boundaries	Contents, p. 3 Strategy, key performance and value creation model, p. 12 Appendix 3: Transparency, materiality and stakeholder engagement, p. 180	

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GRI Standard	#	GRI Disclosure	Page number(s), URL(s) and/or information	Omission
	102-47	List of material topics	Appendix 3: Transparency, materiality and stakeholder engagement, p. 180 Appendix 2: Connectivity of non-financial information, p. 176	
	102-48	Restatements of information	Shareholder value p. 21 Appendix 3: Transparency, materiality and stakeholder engagement, p. 180 Footnotes included in tables.	
	102-49	Changes in reporting	Appendix 3: Transparency, materiality and stakeholder engagement, p. 180 Footnotes included in tables.	
	102-50	Reporting period	1 January 2019 - 31 December 2019	
	102-51	Date of most recent report	24 February 2019	
	102-52	Reporting cycle	Annually	
	102-53	Contact point for questions regarding the report	Colophon	
	102-54	Claims of reporting in accordance with the GRI Standards	This report has been prepared in accordance with the GRI Standards: Comprehensive option.	
	102-55	GRI Index	The GRI Index can be found in the downloadmanager on www.kpn.com/annualreport	
	102-56	External assurance	Independent assurance report, p. 165 Appendix 3: Transparency, materiality and stakeholder engagement, p. 180	

Material Topics

Economic performance		Linked with other material topic: Economic value		
GRI 103: Management approach 2018	103-1	Explanation of the material topic and its Boundaries	Appendix 3: Transparency, materiality and stakeholder engagement, p. 180 Where impacts occur: Inside: KPN Group (including KPN the Netherlands and all subsidiaries). Outside: providers of capital, governments and communities in countries of operation. For KPN's involvement, see references in 103-2	
	103-2	The management approach and its components	CEO letter to the stakeholders, p. 4 Strategy, key performance and value creation model, p. 12 Shareholder value, p. 21 Corporate governance, p. 58	
	103-3	Evaluation of the management approach	Corporate governance, p. 58	
GRI 201: Economic performance 2018	201-1	Direct economic value generated and distributed	Our purpose and the world around us, p. 8 Strategy, key performance and value creation model, p. 12 Shareholder value, p. 21	
	201-2	Financial implications and other risks and opportunities due to climate change	Environmental performance and responsible supply chain, p. 48 Compliance and risk, p. 66 Appendix 7: Environmental figures, p. 209 KPN discloses all material carbon emissions, climate governance and management approach, including the financial implications of risks regarding climate change and the costs of mitigating actions for the CDP (formerly, the Carbon Disclosure Project). Find our 2019 disclosure at https://cdp.net/en.	
	201-3	Defined benefit plan obligations and other retirement plans	Consolidated Financial Statements; [17] Retirement benefits, p. 145	
	201-4	Financial assistance received from government	KPN does not receive significant financial assistance from the government.	

GRI Standard	#	GRI Disclosure	Page number(s), URL(s) and/or information	Omission
Tax	Linked with medium material topic: Tax strategy			
GRI 103: Management approach 2018	103-1	Explanation of the material topic and its Boundaries	Appendix 3: Transparency, materiality and stakeholder engagement, p. 180 Where impacts occur: Inside: KPN Group (exceptions and/or limitations are indicated in footnotes to the tables or text). Outside: customers, suppliers, governments, local authorities, communities in countries of operation. For KPN's involvement, see references 103-2	
	103-2	The management approach and its components	Corporate governance, p. 58 Tax and regulation, p. 63	
	103-3	Evaluation of the management approach	Corporate governance, p. 58 Tax and regulation, p. 63	
GRI 207: Tax 2019	207-1	Approach to tax	Corporate governance, p. 58 Tax and regulation, p. 63 For our Tax strategy & Policy, see: https://ir.kpn.com/websites/kpn/English/7070/tax-strategy-_-policy.html	
	207-2	Tax governance, control, and risk management	Corporate governance, p. 58 Compliance and risk, p. 66 Tax and regulation, p. 63 Tax strategy & Policy: https://ir.kpn.com/websites/kpn/English/7070/tax-strategy-_-policy.html References 102-17 and 102-56	
	207-3	Stakeholder engagement and management of concerns related to tax	Corporate governance, p. 58 Tax and regulation, p. 63 Appendix 3: Transparency; Stakeholder engagement and materiality, p. 180 Tax strategy & Policy: https://ir.kpn.com/websites/kpn/English/7070/tax-strategy-_-policy.html	
	207-4	Country-by-country reporting	Tax and regulation, p. 63 Consolidated Financial Statements, p. 98	
Materials	Linked with other material topic: Materials			
GRI 103: Management approach 2018	103-1	Explanation of the relevant topic and its Boundaries	Appendix 3: Transparency, materiality and stakeholder engagement, p. 180 Where impacts occur: Inside: KPN Group (exceptions and/or limitations are indicated in footnotes to the tables or text). Outside: suppliers and customers in countries of operation For KPN's involvement, see references 103-2.	
	103-2	The management approach and its components	Environmental performance and responsible supply chain, p. 48 Corporate governance, p. 58	
	103-3	Evaluation of the management approach	Corporate governance, p. 58 Long-term and short-term impact on society, p. 26	
GRI 301: Materials 2018	301-1	Materials used by weight or volume	KPN is a service provider and not a production company. The materials consumed are therefore limited.	
	301-2	Recycled input materials used	See circularity of inflow in: Environmental performance and responsible supply chain, p. 49	
	301-3	Reclaimed products and their packaging materials	See return rates in chapter: Environmental performance and responsible supply chain, p. 49 Appendix 2: Connectivity of non-financial information, p. 176 Appendix 3: Transparency, materiality and stakeholder engagement, p. 180 This indicator supports Principles 8 and 9 of the UN Global Compact. Appendix 7: Environmental Figures, p. 209	Reporting on reclaimed packaging material is considered not applicable to KPN. Our stakeholders do not request us to report on such information.
Water and effluents	Linked with other material topic: Water			
GRI 103: Management approach 2018	103-1	Explanation of the relevant topic and its Boundaries	Appendix 3: Transparency, materiality and stakeholder engagement, p. 180 Where impacts occur: Inside: KPN Group (exceptions and/or limitations are indicated in footnotes to the tables or text). Outside: governments, local authorities, communities in countries of operation. For KPN's involvement, see references 103-2.	

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GRI Standard	#	GRI Disclosure	Page number(s), URL(s) and/or information	Omission
	103-2	The management approach and its components	Environmental performance and responsible supply chain, p. 48 Corporate governance, p. 58 Appendix 7: Environmental figures, p. 209	
	103-3	Evaluation of the management approach	Corporate governance, p. 58.	
GRI 303: Water and effluents 2018	303-1	Interactions with water as a shared resource	Not material	
	303-2	Management of water discharge-related impacts	Not applicable	
	303-3	Water withdrawal	Only applies to third party freshwater. See Appendix 7: Environmental figures, p. 209	
	303-4	Water discharge	Only applies to third party water released to municipal water treatment facilities (same volume assumed as reported under 303-3).	
	303-5	Water consumption	Not applicable	
Effluents and waste	Linked with other material topic: Waste			
GRI 103: Management approach 2018	103-1	Explanation of the relevant topic and its Boundaries	Appendix 3: Transparency, materiality and stakeholder engagement, p. 180 Where impacts occur: Inside: KPN Group (exceptions and/or limitations are indicated in footnotes to the tables or text). Outside: governments, local authorities, communities in countries of operation. For KPN's involvement, see references 103-2.	
	103-2	The management approach and its components	Environmental performance and responsible supply chain, p. 48 Corporate governance, p. 58 Appendix 7: Environmental figures, p. 209	
	103-3	Evaluation of the management approach	Corporate governance, p. 58	
GRI 306: Effluents and waste 2016	306-1	Water discharge by quality and destination	Not applicable	
	306-2	Waste by type and disposal method	Calculation methodology is explained in Appendix 3: Transparency, materiality and stakeholder engagement, p. 180 Waste figures are included in Appendix 7: Environmental figures, p. 209	
	306-3	Significant spills	Not applicable	
	306-4	Transport of hazardous waste	Only transport of hazardous waste within the Netherlands applies and can be found in the waste figures in Appendix 7: Environmental figures, p. 209	
	306-5	Water bodies affected by water discharges and/or runoff	Not applicable	
Customer privacy		Linked with high material topic: Data & information protection		
GRI 103: Management approach 2018	103-1	Explanation of the material topic and its Boundaries	Appendix 3: Transparency, materiality and stakeholder engagement, p. 180 Where impacts occur: Inside: KPN Group (exceptions and/or limitations are indicated in footnotes to the tables or text). Outside: all customers. For KPN's involvement, see references 103-2.	
	103-2	The management approach and its components	Safeguarded privacy and security p. 42 For more information on our management approach on privacy and security, see https://overons.kpn/en/kpn-in-the-netherlands/security For our Privacy Statement, see http://www.kpn.com/algemeen/missie-en-privacystatement.htm Corporate governance, p. 58 This management approach supports Principle 8 of the UN Global Compact.	

GRI Standard	#	GRI Disclosure	Page number(s), URL(s) and/or information	Omission
	103-3	Evaluation of the management approach	Corporate governance, p. 58	
GRI 418: Customer privacy 2018	418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	Safeguarded privacy & security, p. 42 A selection is made of all incidents at 'treatment end date' that have been closed in 2019 and have been reported to the Dutch Data Protection Authority. In 2019, KPN the Netherlands received 210 complaints about privacy. KPN's integrity experts review incident reports prompted by grievances, with the legal and regulatory framework being the first check made. The next step checks for violations of the KPN Company Code and of the relevant supporting codes.	
	Own indicator	% of Dutch people that believe their data is safe with KPN	Safeguarded privacy and security, p. 42	
High material topics with own indicators				
Customer interaction				
GRI 103: Management approach 2018	103-1	Explanation of the material topic and its Boundaries	Appendix 3: Transparency, materiality and stakeholder engagement, p. 180 Where impacts occur: Inside: KPN Group (exceptions and/or limitations are indicated in footnotes to the tables or text). Outside: all customers. For KPN's involvement, see references 103-2.	
	103-2	The management approach and its components	Customer value, p. 18 Corporate governance, p. 58	
	103-3	Evaluation of the management approach	Corporate governance, p. 58	
	Own indicator	Net Promoter Score (NPS)	Customer value, p. 18 Appendix 3: Transparency, materiality and stakeholder engagement, p. 180	
	Own indicator	RepTrak	Customer value, p. 18 Appendix 3: Transparency, materiality and stakeholder engagement, p. 180	
Innovation in products and services				
GRI 103: Management approach 2018	103-1	Explanation of the material topic and its Boundaries	Appendix 3: Transparency, materiality and stakeholder engagement, p. 180 Where impacts occur: Inside: KPN Group (exceptions and/or limitations are indicated in footnotes to the tables or text). Outside: customers, suppliers, governments, local authorities, communities in countries of operation. For KPN's involvement, see references 103-2	
	103-2	The management approach and its components	Strategy, key performance and value creation model, p. 12 Corporate governance, p. 58	
	103-3	Evaluation of the management approach	Corporate governance, p. 58 Long-term and short-term impact on society, p. 26	
	Own indicator	See indicators for: Customer interaction; Network quality, reliability & availability; Data & information protection; Economic value	The world is becoming increasingly interconnected. Three major developments have fundamentally changed our industry in the past decades: the introduction of mobile phones, the internet and digitalization. These major changes require a high level of systematic, future-oriented and innovative thinking. Technology is an essential part of who we are and what we do. Everything we want to achieve for our customers and society initially has an effect on our own business operations. As digital transformation is highly integrated with our daily business operations all our indicators contribute to our digital transformation. More information on our newest digital developments can be found under 'Focused innovation and digitalization' p. 39	

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GRI Standard	#	GRI Disclosure	Page number(s), URL(s) and/or information	Omission
Network quality, reliability & availability				
GRI 103: Management approach 2018	103-1	Explanation of the material topic and its Boundaries	Appendix 3: Transparency, materiality and stakeholder engagement, p. 180 Where impacts occur: Inside: KPN Group (exceptions and/or limitations are indicated in footnotes to the tables or text). Outside: all customers. For KPN's involvement, see references 103-2	
	103-2	The management approach and its components	Strategy, key performance and value creation model, p. 12 Converged smart infrastructure, p. 32 Corporate governance, p. 58	
	103-3	Evaluation of the management approach	Corporate governance, p. 58 Long-term and short-term impact on society, p. 26	
	Own indicator	Average 4G download speed	Converged smart infrastructure, p. 32	
	Own indicator	Weighted downtime reduction	Converged smart infrastructure, p. 32	
Supplier selection and good governance				
GRI 103: Management approach 2018	103-1	Explanation of the material topic and its Boundaries	Appendix 3: Transparency, materiality and stakeholder engagement, p. 180 Where impacts occur: Inside: KPN Group (exceptions and/or limitations are indicated in footnotes to the tables or text). Outside: customers, suppliers, governments, local authorities, communities in countries of operation. For KPN's involvement, see references 103-2	
	103-2	The management approach and its components	Environmental performance and responsible supply chain, p. 48 Corporate governance, p. 58	
	103-3	Evaluation of the management approach	Corporate governance, p. 58	
	Own indicator	Return rate for customer equipment	Environmental performance and responsible supply chain, p. 48	
	Own indicator	% weight of equipment and materials reused or recycled	Environmental performance and responsible supply chain, p. 48	

Colophon

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The inside pages of this publication have been printed on PaperWise, a new generation of paper and board with a very low environmental impact. The cover has been printed on wood-free white offset paper (FSC).

Forward-looking statements and management estimates
Certain of the statements we have made in this Integrated Annual Report are 'forward-looking statements'. These statements are based on our beliefs and assumptions and on information currently available to us. They include information concerning our possible or assumed future results of operations, business strategies, financing plans, competitive position, potential growth opportunities, potential operating performance or expense improvements and the effects of future legislation or regulation.

Forward-looking statements include all statements that are not historical facts and can be identified by the use of forward-looking terminology such as the words 'believe', 'expect', 'plan', 'intend', 'anticipate', 'estimate', 'predict', 'potential', 'continue', 'may', 'will', 'should', 'could', 'shall', or the negative of these terms or similar expressions.

Forward-looking statements involve risks, uncertainties and assumptions. Actual results may differ materially from those expressed in these forward-looking statements. No undue reliance should be put on any forward-looking statements. Unless required by applicable law or applicable rules of the stock exchange on which our securities are listed, we have neither the intention nor an obligation to update forward-looking statements after distribution of this Integrated Annual Report. All market share information in this financial report is based on management estimates based on externally available information, unless indicated otherwise.

The terms 'we', 'our' and 'us' are used to describe the company.

We always aim to further improve our CSR activities and reporting. Therefore, we highly appreciate your feedback, questions and comments on our Integrated Annual Report and CSR activities. Please contact mvo@kpn.com.

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