





3 Denmark store

TELECOMMUNICATIONS

SERVING SOCIETY

The Telecommunications division plays an essential role in society, connecting over 110 million people across the world, enabling people to work, learn, do their banking and shopping, and connect with their friends and families. Through these services, the division forms an integral part of the operations and services of businesses and governments around the world, acting as a driver of economic growth and human progress.

The importance of communications, has been highlighted by the COVID-19 pandemic, which saw a [20% surge in overall internet usage](#) , and accelerated digital transformation on average by [7 years](#) . It is now more important than ever that all people have the necessary skills and access to benefit from digitalisation and to ensure that no one is left behind.








While the Telecommunications division aims to be environmentally responsible in the way it manages its businesses and networks, there is also an opportunity for its technologies to play a key role in enabling GHG emissions reductions in society, thereby supporting the transition to a low-carbon economy.








The division's role in serving society is clear –
To build a sustainable, inclusive and thriving digital society.





Material topics, goals and progress

The following table highlights the material topics identified for the Telecommunications division, as well as the relevant UN Sustainable Development Goals ("SDG"), the division's goals, and progress made.

Material topics & SDGs	Goals	Highlights
Taking action on climate change  	<ul style="list-style-type: none"> Set science-based GHG emissions reduction targets to be validated by the Science Based Targets initiative. Calculate scope 3 emissions. Conduct a gap analysis against the recommendations set out in the TCFD framework. Report to the Carbon Disclosure Project ("CDP"). 	<ul style="list-style-type: none"> CK Hutchison Group Telecom committed to new science-based targets: <ul style="list-style-type: none"> Reduce scope 1 and 2 emissions by 50% by 2030, versus a 2020 baseline. Reduce scope 3 emissions by 42% by 2030, versus a 2020 baseline. Both targets are pending validation by the Science Based Targets initiative. Partnered with a third party to calculate scope 3 emissions across CKHGT for the first time as well as conduct a gap analysis against the TCFD recommendations. Reported to the CDP for the second time in 2020 and received a score of B-.
Creating a thriving digital future     	<ul style="list-style-type: none"> Deliver better connectivity, every day, for every customer. Invest in innovation and development of next generation networks. Identify and expand products and services which reduce GHG emissions and create other societal benefits. Help to ensure that all people, including disadvantaged groups, can access the benefits of the digital economy. Support people to study, work and access healthcare during the pandemic. 	<ul style="list-style-type: none"> Continued to make significant network investments in 5G, which will enable enhanced realisation of energy efficiency benefits. Expanded support for smart energy systems, for example continuing to support Ireland's leading energy utility ESB Networks with a multi-year smart meter rollout. 3 Ireland collaborated with ista to provide combined building energy management and connectivity services to support energy consumption reduction across major UK pub group. The division's dedicated data analytics business, CKDelta, partnered with UK Power Networks to support the smart energy transformation. Designed and installed a 5G Private Network at the Port of Felixstowe enabling remote-controlled connectivity of port vehicles, enhancing port efficiency and safety. Continued to extend the division's range of positive impact products and services across its markets.

Material topics & SDGs	Goals	Highlights
Delivering responsible products and services   	<ul style="list-style-type: none"> • Ensure best-in-class systems for data privacy and cyber security. • Help to ensure the safety and wellbeing of the division's customers as they use its products and services. 	<ul style="list-style-type: none"> • Maintained ongoing control systems to strengthen governance, risk management and compliance to minimise the risk of a data privacy breach. • Worked closely with leading industry bodies to mitigate latest security threats and support secure technologies. • Continuously evaluated emerging technologies, assessing risk and benefits and developing appropriate security policies and capabilities. • Offered a range of customer products to help support the digital safety and security of consumer and business customers, including Secure Web, Family Protect and Security Pro, 3Mobile Protect and Drei Internetschutz.
Creating a great place to work   	<ul style="list-style-type: none"> • Be an employer of choice, with employees that feel heard, engaged and supported. • Be a diverse business where employees feel they are included and belong; ensure conscious leadership; work in partnership with internal and external networks. 	<ul style="list-style-type: none"> • Continued to support and engage employees during the pandemic. • Focused on developing future-fit skills with learning and development programmes in digitalisation. • 3 Ireland and 3 UK implemented inclusive leadership training for people managers, a new introduction to diversity, inclusion and belonging module as part of the onboarding process, and developed new Inclusive Meetings Guidance. • WINDTRE incorporated gender diversity metrics into short-term and long-term incentives schemes. • Several businesses recognised by awards for leadership in inclusion and diversity.
	<p>SDG 17, "Partnerships for the goals", underpins action on all material topics and enables the best possible impacts through collaboration and working with relevant partners.</p>	

Taking action on climate change

The information and communications technology sector has a lifecycle carbon footprint equivalent to approximately [1.4% of total global CO₂ emissions](#) , and is responsible for around [4%](#) , of global electricity consumption. This includes the manufacturing and operation of fixed networks, mobile networks and data centres, as well as the manufacturing and use of devices. With the ongoing increase in the number of digitally-enabled businesses and consumers, and the rapid rise in use of data, this footprint is set to grow. In this context, it is imperative that the division sets and implements carbon reduction strategies as a core part of its technology roadmap such that it can meet the needs of customers in a sustainable way, now and into the future.

Climate governance

Action on climate change is driven through the division's Climate Action Working Group (CAWG) with representation from each of the businesses. This CAWG is working together on all aspects of climate governance and strategy including science-based target setting and GHG emissions reduction opportunities, with a focus on energy efficiency, renewable energy procurement opportunities and supply chain GHG emissions measurement and management.

In 2021, the CAWG worked with a third party expert to undertake a gap analysis of current practice against the recommendations

of the Taskforce on Climate-related Financial Disclosures ("TCFD") and identify next steps. In 2022, CK Hutchison Group Telecom ("CKHGT") will undertake a dedicated climate risk and opportunity assessment as well as conduct scenario analysis to understand and quantify the risks and uncertainties it may face under different hypothetical futures.

In progressing its GHG emissions reporting and disclosure journey, CKHGT reported to the Carbon Disclosure Project ("CDP"), receiving a grade of B-.

GHG emissions reduction targets

In 2021, CKHGT developed science-based GHG emissions reduction targets with the help of a third party expert including:

- Reduce scope 1 and 2 emissions by 50% by 2030, versus a 2020 baseline; and
- Reduce scope 3 emissions by 42% by 2030, versus a 2020 baseline.

These targets align with the sectoral decarbonisation approach for scope 1 and 2 emissions reduction, agreed between the information and communication technologies sector and the Science Based Targets initiative, and is consistent with a 1.5°C pathway. These targets are also pending validation by the Science Based Targets initiative during 2022.



CKHGT has also set a target to reach net-zero in operations (scope 1 and 2) by 2040. CKHGT will be working to incorporate scope 3 emissions also within this long-term ambition as well as seek validation by the Science Based Targets initiative.

CKHGT'S CARBON FOOTPRINT

During 2021, CKHGT calculated its scope 3 emissions for the first time and conducted an in-depth review of its scope 1 and 2 emissions to form its new 2020 baseline. The scope 3 emissions study revealed that 74% of its total value chain emissions relate to scope 3, with key contributors to this being purchased goods and services and capital goods.

CKHGT's indirect electricity emissions, or scope 2 emissions, are responsible for 25% of its total value chain emissions. Of this, networks contribute over 94%. Only 1% of its carbon footprint is attributable to its scope 1 emissions, which largely relates to refrigerants leakage and GHG emissions by its owned and operated fleet.

This carbon footprint exercise has revealed the following key opportunities:

- Creating energy efficiency in the division's networks and data centres;
- Increasing the proportion of renewable electricity procurement; and
- Engaging with supply chain partners to reduce the GHG emissions associated with the production and transportation of the goods and services procured.

Figure 33: Breakdown of scope 1, 2 and 3 emissions

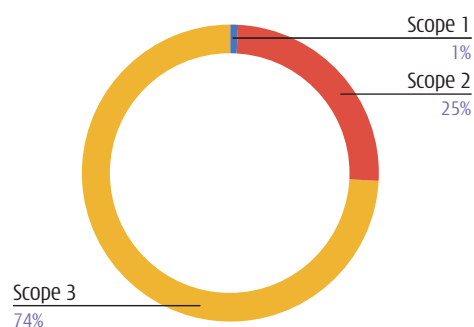


Figure 34: Breakdown of scope 2 emissions by emissions type

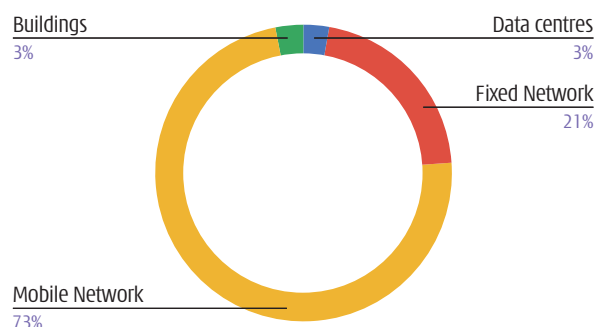
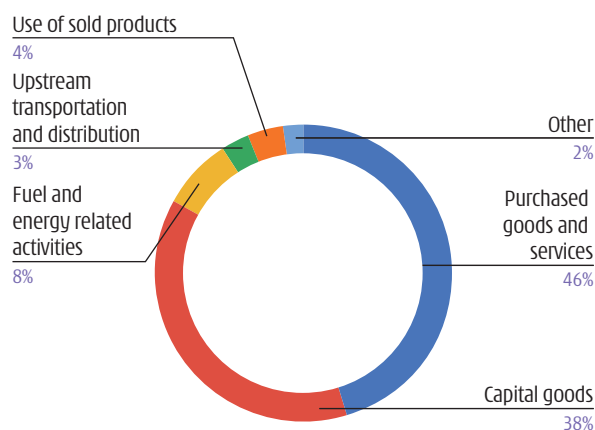


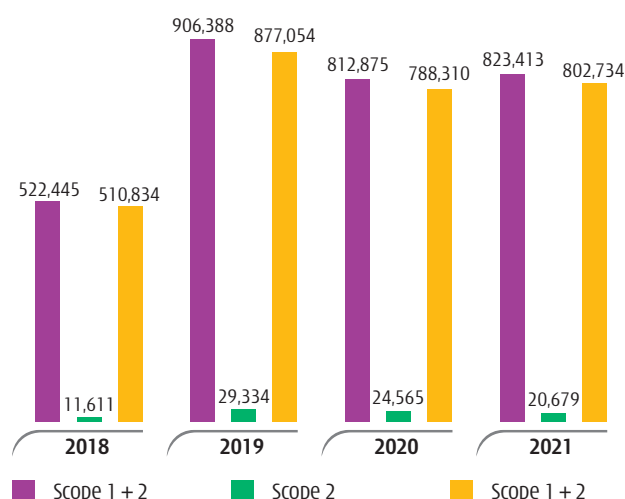
Figure 35: Scope 3 footprint by scope 3 category



GHG emissions performance

Due to an increase in traffic needs of the network during the pandemic with more people working and connecting from home, scope 1 and 2 emissions increased by 1.3% in 2021 versus 2020 but decreased by 9.2% versus 2019.

Figure 36: Scope 1 and 2 GHG emissions performance (tCO₂e)






Energy efficiency

Key measures being implemented widely across the businesses have included:

- Upgrades to more energy efficient 5G radio equipment, as well as upgrades to transmission networks, including virtualisation of core networks and network services, which support more energy efficient data processing;
- Consolidation of radio access network sites enabling the decommissioning of thousands of sites to optimise the service coverage and avoid unnecessary consumption and GHG emissions;
- Data centre cooling upgrades and energy saving adjustments;
- Procurement of renewable electricity;
- Installation of energy management systems and LED lighting, as well as moving into more energy efficient office premises; and
- Fleet replacement with electric vehicles.

5G AND ENERGY EFFICIENCY

The 5G technology rollout, and in particular where it is accompanied by the switch-off of legacy 2G and 3G networks, can be expected to achieve significant energy efficient benefits. The rollout of 5G drives operational energy efficiency in several ways:

- [5G is significantly more energy efficient](#) , at carrying data than earlier generations of technology, and particularly when deployed as 5G standalone (where 5G technology is used for both signalling and information transfer i.e. using 5G core rather than 4G core). The benefits are further realised where legacy technologies networks are switched off.
- 5G is the first fully virtualised network technology, which means that the core network is run as software (in the cloud) instead of hardware. As network functions move to the cloud, the physical infrastructure is used more efficiently. There is also significant potential to use machine learning and artificial intelligence for real-time operations management to optimise energy consumption of the radio network. Artificial intelligence is understood to reduce power consumption by up to [15%](#) , under current systems. Autonomous networks in the future may introduce even higher reductions.
- Along with 5G, there is an opportunity to deploy more energy-efficient equipment, such as a new generation of batteries and more efficient power amplifiers. Further savings can be achieved through the implementation of enhanced equipment cooling, such as free cooling, which utilises the cooler outside air temperature for cooling rather than traditional refrigeration.
- An essential part of the 5G infrastructure portfolio is the replacement of domestic copper cables with fibre. Fibre-To-The-Home is estimated to be [85%](#) , more energy efficiency than copper.



3 Hong Kong engineers testing a 5G radio base station on a rooftop

3 UK BREAAAM "EXCELLENT" HEADQUARTERS

In 2021, 3 UK relocated its original office premises in Reading and Maidenhead to new buildings in Green Park, Reading. The new office achieved a BREEAM New Construction (2014) rating of Excellent. The solar panel installation is expected to generate around 17,400kWh of renewable energy per year. The new office also has passive infra-red controlled LED lighting and electric vehicle charging points for staff and visitors. In addition to high thermal efficiency, the building includes an intelligent building management system controlling heating, ventilation and cooling.



3 UK's new office achieves BREEAM New Construction rating of excellent

Renewable electricity

Recognising the important role that renewable electricity plays in achieving its GHG emissions reduction targets, the businesses are either already using a significant proportion of renewable electricity or are actively monitoring and assessing opportunities to increase the share of renewable electricity in their energy supply.

Overall, renewable electricity comprises 26% of electricity consumption across the division. With 3 Ireland, 3 UK, 3 Sweden and 3 Austria purchasing between 80-100% renewable electricity.

3 Austria, WINDTRE, 3 Ireland and 3 UK further produce renewable energy through their own solar photovoltaic systems. WINDTRE has built 13 solar installations with a total annual production of approximately 350MWh per annum, and in 2021, 3 Ireland ran a remote mast site solar feasibility study which led to the installation of a further 10 sites during the year.

Sustainable transportation

In a number of markets, the businesses are moving to a lower carbon vehicle fleet. WINDTRE has a fleet of 8 electric or hybrid-electric cars, as well as a 60-vehicle car sharing programme, seven of which are electric and 21 are hybrid-electric. A further 17 charging points for electric or plug-in hybrid cars were installed at the Rome headquarters. 3 Sweden has also transitioned to using hybrid and electric vehicles and 3 Ireland recently ran a full car fleet tender including preferences for electric vehicles.

SUSTAINABLE LOGISTICS AT 3 AUSTRIA

3 Austria is committed to operating carbon-neutral, digital and plastic-free logistics. The business reuses inbound shipping cardboard boxes for onward distribution to retailers, with excess quantities collected, pressed and resold as recyclable material. It has also removed paper-based documentation for delivery notes, contracts and correspondence; its digital processes save over half a million pages of paper per year due to the elimination of delivery notes alone. Any electronic waste is resold to dealers via a certified disposal company. It further aims for plastic-free packaging through using filling material made from recycled paper or cardboard inlays, and folding cartons instead of using adhesive tape.

Creating a thriving digital future

A report produced by Deloitte and GeSI found that digital technologies could have a transformational impact on the world's ability to meet the 2030 Agenda and the SDGs, specifically finding that of the 169 SDG targets, 103 are directly influenced by digital technologies. According to the [Social Progress Imperative](#) , the world is on track to miss the 2030 due date in order to achieve the SDGs by over 60 years at the current rate of progress; mobile network-enabled transformation to accelerate positive change has never been more important.

The deployment of 5G connectivity that provides speed and capacity at fundamentally different levels will be increasingly central to progress against the SDGs. Digitalisation is expected to disrupt all parts of the economy over the next decade and, if sufficient policy and investment is received, has the potential to be a key driver of the low-carbon transition, among other priorities central to sustainable development.

Building next generation networks


Fifth generation or 5G, is the next generation in mobile technology, bringing super-fast data speeds, consistent connections and low latency. It offers enormous potential to make lives safer, smarter and more efficient, supporting innovative uses across sectors such as energy, transport, and manufacturing, amongst others.

Across the Telecommunications division, the businesses are investing significantly in 5G radio equipment, 5G distributed core, and backhaul, enabling customers to access the benefits of 5G. At the same time, they are supporting any customers with devices still reliant on 3G, to transition to 4G and 5G, by providing notice that 3G networks are nearing end of life and competitive offers for upgrade of devices where needed. 4G nevertheless remains important, utilising core spectrum available for data transmission, and compatible with millions of devices currently in use.




Following its 5G launch in 2020, 3 Ireland now has over 80% population coverage, bridging the digital divide across the country


Enabling the low-carbon transition

Transitioning to a low-carbon economy and reaching net-zero by 2050 will require the use of technology that can facilitate the rapid reduction in GHG emissions required to meet this goal. Mobile network-enabled technologies have a key role to play in this transition through increasing connectivity, improving efficiency and impacting behaviour change. While GHG emissions from the mobile sector account for approximately 0.4% of global GHG emissions, the level of avoided emissions enabled by mobile communications technologies is [10 times greater](#) .

The division recognises there is commercial potential in being the digital partner of choice and it is actively positioning its capabilities and offerings, particularly with respect to enabling the net-zero transition. The benefits of smart connectivity are realised when Internet of Things ("IoT") connectivity is deployed within a specific device or application, and often in combination with data analytics and artificial intelligence for smarter decision-making.

IoT connects objects and equipment such as industrial sensors, medical devices and vehicles, so that they can interact with one another, and can be remotely monitored and controlled. IoT enables significant efficiencies with enormous potential for benefits in safety, productivity, efficiency and environmental sustainability.

Already, there are more connected devices than people in the world, and it is predicted that by 2025, [27 billion devices](#)  will be capturing data on how people live, work, move through cities and operate and maintain the machines on which they depend.

A 2018 analysis of more than 640 IoT deployments, led by the World Economic Forum in collaboration with research firm IoT Analytics, showed that [84% of existing IoT deployments](#)  have the power to meaningfully advance the SDGs. In conjunction with artificial intelligence and analytics, IoT solutions offer even more powerful tools to make decisions which create better societal outcomes.

The division's investments in 4G and 5G connectivity are already enabling the deployment of IoT across a range of applications in its markets, including where businesses have implemented private networks. In addition, NarrowBand-IoT (NB-IoT) has been launched in Italy and Austria where businesses partner with IoT solution providers to provide connectivity across a range of applications including fleet management, healthcare and environmental monitoring.



IOT APPLICATIONS

Large-scale IoT connectivity can be used to optimise port operations at all levels. It can enable real-time monitoring of port equipment and machinery, container monitoring and tracking, vehicle movements, as well as issue detection and failure prevention.

Using a 5G Private Network designed and installed by 3 UK in 2021, Hutchison Ports' Port of Felixstowe, the UK's busiest container port, is trialling remote-controlled rubber-tyred gantry cranes that are used for container stacking and truck loading. In this use case, cranes are operated from remote-control centres which enables greater workforce flexibility and safety, and optimises fuel efficiency.

WINDTRE has partnered with Italgas, the leading gas distributor in Italy, to support the digitalisation of its entire gas network, leveraging WINDTRE's NB-IoT capability. The solution combines IoT SIMs with a private Access Point Name allowing for the secure transmission of network data to Italgas data centres, and a Cisco/Jasper service management platform. This has enabled Italgas to perform real-time monitoring of network operations, alarm management, big-data analysis and predictive maintenance. It also allows for remote reading of gas consumption thereby avoiding the need for Italgas service personnel to travel around the network, creating operational efficiencies and reducing the use of fuel use for transportation.



Hutchison Ports Port of Felixstowe

Large-scale IoT connectivity can be used to optimise port operations at all levels

Energy management

IoT can be used to enable energy management across different stages of the electricity supply network, from power generation to the end-point consumers. The ability to monitor the energy consumption of assets, be they heavy machinery or household devices, enables better forecasting and reduced energy wastage. On the supply side, sensor-enabled assets enable optimisation of asset maintenance, integration of renewable energy and reduced waste by predicting energy peaks.

The division partners with utilities companies to provide SIM cards for utility meters in residential and commercial properties, enabling real-time remote monitoring of consumption. In just Italy and Ireland alone, the division has over four million SIM cards in utility meters, helping customers to actively monitor their consumption of electricity, gas and water.

The division also collaborates with energy specialists offering energy management solutions, enabling customers to take control of their energy usage and identify opportunities for reduced consumption. One such collaboration is with energy solutions specialist ista, one of the Group's Infrastructure companies.

AUTOMATING METER READINGS WITH ESB NETWORKS IN IRELAND

3 Ireland is the provider of managed IoT connectivity to Ireland's leading energy utility, ESB Networks. ESB Networks uses 3 Ireland SIMs embedded in smart meters which measure the energy consumption of individual customers at half hourly intervals, with data transmitted over a private Access Point Name provided by 3 Ireland, offering a secure end-to-end data connection. In 2021, 3 Ireland continued to support ESB Networks with the rollout of this transformational project, providing SIMs to support the installation of 40,000 smart meters per month.

BUILDING MANAGEMENT SYSTEMS


CK Hutchison Innovation Opportunities Development ("CKH IOD") is dedicated to promoting innovation and collaboration across the telecommunications and other Group businesses. CKH IOD is partnering with ista, to drive the uptake of energy solutions combined with connectivity provided by the Telecommunications division across the wider Group.

Working with CKH IOD, 3 Ireland partnered with ista to provide IoT connectivity as part of a building energy management system solution for a well-known UK pub group. This system offers a simple low-cost control platform, allowing remote monitoring and control of key aspects of the site's energy consumption. ista manages a portfolio of systems across its client's sites with a particular focus on the hospitality and retail sectors, and with installations demonstrating a 10-20% reduction in site energy use.



Asset tracking and fleet management

Another important application of IoT in the sustainability context is use for asset tracking and the benefits to GHG emissions reduction. To illustrate, on-board telematics can create fuel savings through optimised routing and reduced idling times for freight and logistics. Research from the GSMA indicates that, of the 4.4 gigatonnes GHG emissions that need to be reduced by the transport sector by 2030,

32%  of this can be met through connectivity supporting routing and fleet management in shipping and heavy goods vehicles.

The division therefore considers logistics and fleet management to be an important area of focus as it aims to grow its sustainable products and services portfolio.

ASSET TRACKING SOLUTIONS

3Locate is 3 Ireland's asset management solution that enables companies to monitor both powered and non-powered assets. It can be used in a range of settings such as maximising the efficiency of onsite plant and machinery, delivery trucks or other fleet transportation. Insights using 3Locate can be used to reduce idling time and vehicle movements, driving efficiency and reducing fuel consumption.

Using vehicles and fleets smarter can lead to typical savings of between 20-30%. Transport and logistics companies using the technology have saved on fuel costs by reducing idling time by up to eight hours per heavy goods vehicle per week.

The solution can also be combined with dashcams and driver behaviour analytics, helping to improve driver safety while enabling lower costs of insurance.

Electric vehicle infrastructure

With the governments regionally committing to banning the sale of internal combustion engines, the need for a rapid rollout of electric vehicle infrastructure is crucial. The businesses are developing data driven insights to support the transformation taking place across the mobility and energy sectors working to help the various actors involved in such a complex rollout including power distributors, charge point operators, urban planners, and payment solutions providers.

ENABLING THE ELECTRIC VEHICLE TRANSFORMATION

CKDelta is the Group's dedicated data analytics business. It specialises in designing and testing innovative solutions for business, using diverse and unparalleled data sets from across the Group and other partners.

In 2030, the UK is set to enact a ban on the sale of new petrol, diesel, and hybrid vehicles with 91% of new car sales expected to be electric vehicles. The transformation required presents a number of challenges to those within the energy and mobility sectors. Firstly, distribution network operators will need to reinforce their networks as demand from consumers for electricity increases, and will need to routinely monitor fluctuations in pressure on the grid. Secondly, charge points will need to be installed in the right locations for economic viability in the long-term and to ensure that no one is at a disadvantage in accessing electric vehicle charging. In addition, charge point operators will need to build an

understanding of the commercial viability of their investments, and will need to manage and adapt their network of charge points economically on an ongoing basis.

CKDelta is providing data-driven insights to help address these challenges and to make this transition a reality. Working with UK Power Networks, it is applying advanced data capabilities and machine learning to simulate the behaviour of the network at scale for accurate estimation of changing network load profiles.

CKDelta is also partnering with ista to develop a suite of tools that enable data-driven insights for planning the installation of electric vehicle charging points in commercial properties. The approach combines data from multiple sources such as rich demographic data, meter data and mobility data to enable prioritisation of locations for optimum, carbon impact and return on investment.

CKDelta is providing data-driven insights to help address the challenges of the electric vehicle transition



3 Austria cell site towers



DATA INSIGHTS FOR TRANSPORT PLANNING

3 Denmark and **3** Austria are leveraging the combined power of data and connectivity to provide insights in support of more efficient transport network planning.

Data insights is a growing new business area for **3** Denmark which is focused on providing valuable tools and intellectual property for mapping and analysing mobility data. By looking at population travel and movement patterns, businesses and society can gain valuable insights on how to optimise public transport, where to place electric vehicle infrastructure or how to distribute energy and electricity in the most efficient way. Mobility data is aggregated and anonymised, providing insights on device movement patterns in aggregate.

In June 2021, the Danish State Railway entered into an agreement with **3** Denmark to obtain anonymised mobility insights for a better understanding of Danish transport needs to enable reductions in road traffic and associated GHG emissions, among other objectives.

Similarly, **3** Austria is providing major public transport provider, Salzburger Verkehrsverbund, with motion insights in a three-year project aimed at optimising network planning and scheduling to encourage greater use of public transport thereby reducing road traffic and GHG emissions.

Network resilience

The Telecommunications division's goal is to deliver better connectivity, every day, for every customer. Network resiliency serves as a fundamental social responsibility – to ensure that customers are able to connect securely, communicate, access data and share information anytime, anywhere.

5G networks will be required to adapt during extreme weather events, and increasingly so in the face of climate change. Resiliency is enabled by efficient radio equipment that in the future can be powered by micro grids and renewable energy. The resiliency of cell site towers against damage caused by extreme weather events has been a priority focus area for the division's crisis management teams, in addition to rolling out innovative technology solutions such as "network in a box" that can deploy a complete network rapidly enabled by technology features such as self-backhauling, and potentially satellite backhauling. In this regard, the division continues to use a range of network technologies optimised for local weather systems, from metropolitan and rural Asia, to the northern European extremes of Sweden.

The Telecommunications division is exploring the recent advances in the satellite industry to provide impromptu backup to its terrestrial networks in the event of extreme weather or other significant disruptions.

Supporting innovation in 5G and sustainability

Across markets, the division is actively supporting innovation in 5G and IoT applications, in many cases with a focus on creating sustainable, positive impact. For example, **3** Sweden held its inaugural and highly successful 5G Sustainability Awards.



3 Sweden held its inaugural 5G Sustainability Awards

3 SWEDEN'S 5G SUSTAINABILITY AWARDS

3 Sweden launched the 5G Sustainability Awards in September 2021 to support 5G innovation that contributes to positive societal and environmental impacts. The competition received 40 nominations with ideas including using artificial intelligence for heart, breathing and circulation monitoring and "refill robots" to reduce disposable packaging.

The winners were selected by a jury of experts in technology, innovation, sustainability and entrepreneurship. The first place was awarded to Buddywise which seeks to address the global problem of thousands of people dying every day in workplace incidents. The technology uses 5G and a combination of artificial intelligence and smart cameras to help detect and warn of potential occupational safety hazards in the workplace. Buddywise was awarded SEK 100,000 of start-up capital, as well as access to coaching and office space provided by 3 Sweden and an invitation to the Three Business Talkshow, which showcases entrepreneurs and discusses topical issues for business. Second place, and a SEK 50,000 prize,



Buddywise won first place in 3 Sweden's 5G Sustainability Award

went to Consenz to help develop its idea of using 5G to connect car fleets for safer and greener mobility in smart cities. Bronze, with a SEK 25,000 prize, was awarded to Dronest for its 5G-connected drones that are intended to be first responders on accident sites and emergencies.

3 Hong Kong, through leveraging territory-wide 5G coverage, is able to offer a host of innovative new solutions. For example, smart robots have been deployed in shopping malls to perform dual concierge and security guard roles, providing shoppers with customer service support during the day while also guarding the facilities by capturing and reporting security breaches.

In 2021, the Hong Kong business launched dedicated 5G business services for companies in the construction, shopping mall management and performing arts sectors and supported a number of customers to apply for the government's Subsidy Scheme for Encouraging Early Deployment of 5G.

3 Hong Kong was recognised for its ongoing investment in innovative 5G solutions, winning numerous awards for innovation in the "International Business Awards of the Stevie Awards". This included a silver award in the "New Products and Product Management Awards-Business-to-Business Products" category for its 5G Contactless Car Park Solution, and a gold award in the "New Product and Product Management Awards - Virtual Event Technology Solution" category for its 5G 4K Live Broadcasting Solution.

WINDTRE's commitment to investing in 5G and innovation is demonstrated through its 2030 goal to be the "smart partner of 100 smart cities". In 2021 it began a number of activities in support of this goal, including:

- A digital services maturity analysis of cities to define priority areas;



- Initial contact with local public administration; and
- Enhancing its Smart City Service Catalogue to include systems for the management of artistic and cultural heritage, public safety and emergency management, energy efficiency, air quality and waste management, and smart mobility solutions focused on enhancing efficiency and safety.



Live concert streamed from the Tsz Shan Monastery via 5G by 3 Hong Kong

WINDTRE renewed its partnership with ZTE to test innovative solutions through the ZTE Innovation & Research Center in L'Aquila, with particular focus on the activities in the areas of 5G and IoT and specific focus on smart city services.

Positive impact products and services

Consumers are becoming increasingly aware of the environmental and social impacts of the products they buy, and their expectations are changing as they seek to make choices that align with their values. Research published by Deloitte in 2021 found that nearly [one in three consumers](#)  claim to have stopped purchasing certain brands or products due to ethical or sustainability-related concerns, and for Gen Z this increases to [45%](#) .

Recognising both the division's role in enabling more sustainable outcomes as well as the rise of the conscious consumer, the division is focused on creating products and services for positive impact across all of its markets.



For example:

- **3** Austria continued to scale its e-health services, Doctors Online, in partnership with Generali insurance and Instahelp, which offers online, face-to-face professional mental health support. **3** Austria also offers Eloop, an electric car sharing service, and Drei Energie, a carbon neutral electricity and gas offering for Austrian customers.
- **3** Denmark is working with the Danish Ministry of Defence on a national public warning system, in line with requirements under the European Electronic Communications Code. This cell broadcast system will send out a push SMS both nationally and regionally to warn the public of danger, such as in the case of natural disasters, local fires and gas leaks.
- **3** UK has been piloting a scheme with five police forces across England and Wales, providing replacement SIMs and loan devices free of charge to victims of rape whose devices have been taken into police custody as part of the investigation so they are not without a device which may cut them off from their support network.



- WINDTRE has partnered with WWF in its GenerAction Sea programme, protecting the Mediterranean Sea and the Italian shoreline. Customers subscribing to the "solidarity option" donate EUR50c every month which is matched by WINDTRE in order to help protect the marine environment including species at greatest risk, like the Loggerhead Sea Turtle.

Responsible and circular devices and accessories

Consumers on average replace their smartphones [every 33 months](#) . With approximately 1.4 billion phones being sold annually and only 20% being recycled, that creates substantial hazardous waste among other environmental impacts. Further, analysis has shown that [75%](#)  of the lifecycle carbon footprint of a mobile device lies within the production stage, making it important for device manufacturers and retailers to identify ways to increase device longevity.

Across the division, the businesses are identifying opportunities to reduce the use of resources associated with products and packaging, and to extend the life of products through take-back arrangements and refurbished product offerings, thereby reducing the environmental impacts across the product lifecycle.

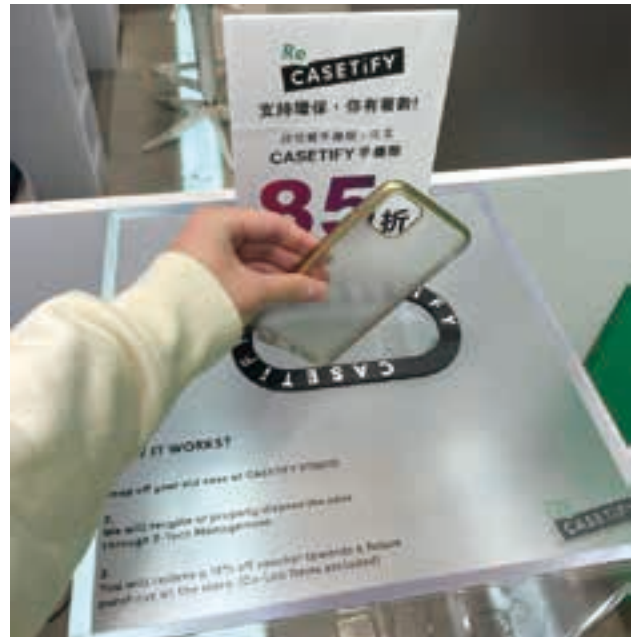
Extending product life and circularity

The division has trade-in and device buy-back schemes across its markets with specific examples of how these programmes work including:

- **3** Denmark has a take-back programme offered in partnership with a company that refurbishes used devices. Under the scheme, customers can trade in their old device with a price reduction on a new device. In 2021, 89% of traded-in devices were reused, while the remaining 11% were recycled.
- **3** Sweden's take-back programme enables customers to return their used devices by free return post, which are then cleared of data and refurbished to be on-sold as second-hand phones. By using the take-back programme customers are given discounts on their subscriptions or can choose to donate the cost to the Swedish Childhood Cancer foundation.
- **3** Austria is trialling a programme to offer customers refurbished handsets, smart watches and tablets professionally remanufactured by certified partner, Renewed, and provided with a 24-month warranty. At the end of 2021, **3** Austria launched an incentive programme for customers that voluntarily postpone their contractual handset replacement by six months, aiming to further conserve resources and extend the product's life.

PHONE CASE RECYCLING IN HONG KONG

Every year, millions of mobile phones are produced and sold. Unlike mobile phones, phone cases are generally made from plastic with no resale value. Every year more than one billion mobile phone cases end up in landfill. In 2021, 3 Hong Kong collaborated with CASETiFY to recycle used phone cases and incentivised customers with a promotional discount.



FAIRPHONE

3 Denmark is proud to be offering Fairphone to Danish customers. As the name suggests, Fairphone's mission is to build a fairer world by putting people and planet first and driving conversations about what "fair" really means.

Amsterdam-based Fairphone originally began as an awareness campaign on conflict minerals and turned into a phone company in 2013, with the aim to source as many materials as possible in both humane and environmentally responsible ways.

Fairphone's aims now go beyond responsible sourcing to also address the circular economy with its durable, modular and repairable design allowing for easy modification, update and repair. It is also the only phone on the market that comes with a 10/10 score iFixit ranking—a ranking that scores smart phones based on their ease of reparability.



Sustainable SIMs

The division is pursuing a number of sustainable SIM solutions.

The use of e-SIMs enable the delivery of a digital profile to a chip on the device, rather than supplying a physical SIM card giving more flexibility and choice to customers for the types of services

they subscribe to while reducing plastic and electronic waste. Throughout 2021, the division scaled its e-SIM platform to more operating countries, while continuing to work with the ecosystem of device vendors to bring more e-SIM enabled devices to market.




During 2021, it continued its programme to replace the standard credit card sized SIM holder with a new half-sized format cutting plastic waste in half.

Sustainable accessories


Developing more sustainable accessories and packaging has also become a more recent focus. **3** UK, **3** Ireland, **3** Denmark and **3** Sweden launched a range of more sustainable mobile accessories with the Danish brand dbramante1928. **3** UK and **3** Denmark also launched 100% plant-based and compostable phone cases made by A Good Company. In 2021, **3** Denmark launched a new accessory brand, Utility Project, and ensured the packaging is plastic-free and certified by the Forest Stewardship Council.



Digital inclusion

The pandemic has seen digital transformation across society leap forward on average by [seven years](#) , with more businesses and Government services integrating digital technologies into their business models and customer service. A [2020 study](#)  by McKinsey showed that companies have accelerated the digitalisation of products, services and customer interactions by [20 percentage points](#) , exceeding 50% for the first time ever.

People have been through extended periods where physical contact and movement has been limited to control COVID-19, making them ever more reliant on digital technologies to access support, to work or learn, to buy essential goods, and to connect with social networks. This has made it more important than ever to reduce the digital divide and enable more people to access the benefits of digital technologies.

Digital exclusion may occur for multiple reasons including lack of access to telecommunications networks or devices, or lack of digital skills. Research has shown that about [37% of the world's population](#) , or 2.9 billion people, are still offline and excluded

from the direct benefits of the global digital economy. Groups with higher levels of digital exclusion tend to include older generations, people with disabilities, and lower socioeconomic groups.

Supporting the elderly and those with disabilities

In support of its goal to have seniors 100% connected by 2025, WINDTRE has partnered with AnyTech365, an IT security and support company, to offer all WINDTRE customers over 60 years' of age access to telephone support to set up their new smart phone. It has also published video tutorials on its website to help older people to carry out day-to-day digital activities such as sending a WhatsApp text or video call, or ordering groceries for delivery.

3 Hong Kong also maintained a focus on digital inclusion for the elderly. The year 2021 marked the 11th anniversary of the Group's Lo-Yau-Kee Monthly Service Plans Sponsorship whereby senior citizens from various charitable organisations benefit from this waiver-of-service-fee scheme. **3** Hong Kong also supported the Jockey Club Digital Support Project for the Elderly by providing smartphones, together with 12-month free basic mobile service. User training was also provided to help the beneficiaries learn the practical skills of using smartphones and mobile applications.

In 2021, **3** Austria has partnered with Mosaik, a non-profit organisation focused on providing care, counselling and support to people with disabilities. Through donations and other support, **3** Austria helped enhance the access of Mosaik clients to digital health, communication and other multi-media resources.



3 Hong Kong supports Jockey Club Digital Support Project

Rural access

Recognising the challenges of connectivity and digital exclusion in some of Italy's rural areas, WINDTRE has committed to bring fast connection and smart technologies to 100 Italian internal villages. In addition to improving connectivity and offering free Wi-Fi services, the project also includes holding dedicated digital education events.

3 UK is working with the UK Government and several other mobile operators on the Shared Rural Network, a GBP1 billion programme aiming to collectively bring guaranteed coverage to 280,000 additional premises and an additional 16,000 kilometres of roads in rural areas across the UK. Once completed, 95% of the UK will have reliable 4G coverage by at least one mobile operator. **3** UK has committed to reach 90% geographic coverage by 31 January, 2027.

3 UK also partnered with CCS Insight, a technology market intelligence and advisory firm, on research to better understand the potential for Fixed Wireless Access (FWA), i.e. superfast 5G broadband. The research looks at its potential to be a cost effective, quicker, and more environmentally responsible approach, given

that it avoids the need for extensive laying of fibre to connect rural areas. Currently, only 20% of rural areas are able to access ultrafast Wi-Fi, with four in five people waiting on fibre to be laid. The research calculated that FWA could be installed for half the cost of full fibre while still providing a comparable level of connectivity.

3 UK also identified a number of policy reforms that would be vital to enabling more FWA deployment.

3 Ireland is committed to enhancing connectivity for its customers. Indeed, **3** Ireland was the first mobile operator in Ireland to bring 5G to every county, providing superfast broadband to remote areas in Ireland.

3 Ireland has been working with the Arranmore Business Council to provide connectivity to the island of Arranmore, Ireland and in doing so supporting societal and economic development. This connectivity, combined with other facility improvements and the move to remote working more generally, has helped to reverse the island's century-long economic decline, with its population now growing, and new businesses opening preserving a unique way of life for generations to come.



Island of Arranmore, Ireland

Small businesses

The division is also working to support small businesses in accessing the benefits of digital transformation.

Through **3** Austria's "Drei Digitalimpuls" initiative, it aims to impact the digital capability gap between large and small businesses, which has been widened further by the impact of COVID-19. The initiative includes free "digital checks" for companies as well as training and other education opportunities throughout Austria. It also participated in the government initiative Digital Team Austria, through which it provided several thousand companies with high-performance, free Internet access during the pandemic.

Small and medium-sized enterprises are crucial to Ireland's economy, with 99.8% of private businesses having fewer than 250 employees, employing over 1 million people. **3** Ireland supports small businesses, with a variety of services such as WAN connectivity, Unified Communications and security solutions.

In 2021, **3** Ireland launched its 3 Grants for Small Businesses programme. The programme, managed by the small business network and support provider, Enterprise Nation, supported 10 small businesses with a EUR100,000 award made up of funding, advice, support and connectivity solutions from **3** Ireland's expert business advisers. Shortlisted applicants were required to present a virtual pitch setting out how the grant would help the business, and what the positive impact on their community would be.

Supporting society through the pandemic

The COVID-19 pandemic has fundamentally changed the way society interacts as measures have been put in place globally to reduce physical contact and to slow the spread of the virus. In 2021, the division continued to focus on ways to help customers stay connected during lockdown, and to ensure that customers remained as safe as possible when coming in-store as these were permitted to reopen in some locations.

Supporting access to health advice and care

Across the division, businesses continued to offer customers free data access and calls to healthcare support websites and hotlines. For example, **3** UK zero-rated access to the NHS website and 111 non-emergency helpline along with the dedicated NHS Test & Trace 119 helpline. Working with the Ministry of Justice, **3** UK allowed free access to several victim support and domestic abuse support services. **3** Ireland zero-rated health and educational websites provided by Irish government for customers. WINDTRE also continued to enable free access to Senior Italia FederAnziani, assisting its senior customers to access professional, psychological support at no cost. **3** Ireland also donated phones and SIMs providing free calls, texts and data to charities, nursing homes and hospitals.

3 IRELAND-SUPPORTING MENTAL HEALTH CHARITY DURING COVID-19

The support line of mental health charity Aware, is an important source of help for those in Ireland impacted by depression, bipolar disorder, among other mood-related conditions, and more recently, anxiety caused by the impact of the pandemic.

When COVID-19 forced offices to close, Aware needed a way to enable its 115 trained volunteers to take calls securely while volunteering from home. **3** Ireland worked swiftly with Aware to train, test and pilot 3Connect, an encrypted and anonymous, cloud-based telephony service, protecting the privacy of callers and volunteers. 3Connect routes calls over the internet via an app and automatically diverts calls to the volunteers who are logged into the app for their shift. The app was live within three days, with volunteers taking calls from home no matter where they were based.

"From March to July, we answered 68% more calls than during the same period in 2019, with significant peaks in April, May and July of over 80%. Thanks to the implementation of 3Connect, we were able to answer almost 15,000 calls in an 18-week period, providing information, understanding and support when people needed it most."

- Maria Walsh Healy, Support Line Manager with Aware

Supporting access to education

3 Ireland launched the Data for Schools programme, providing 15,000 free SIM cards with unlimited data to schools across the country for distribution to families and students to help with home-schooling and connectivity during lockdown. WINDTRE extended its EduTime initiative, helping under-25 customers to study remotely with 50GB of data at no cost. During the third lockdown, **3** UK removed upfront costs on all 4G+ MiFi devices across all contract lengths, and discounted accessories for a limited period at the start of the lockdown. It also worked with the UK Government's Oak National Academy to zero-rate access to its online classroom and resource hub.

The division's support included a particular focus on helping disadvantaged or vulnerable families to access home learning. In January 2021, **3** UK partnered with the UK's Department for Education's Get Help with Technology programme, to provide the most disadvantaged children across England with unlimited data allowing them to continue with their education online until the end of the school year.



Free internet donation to schools

Post-pandemic recovery

Looking ahead, the Telecommunications businesses collectively have an important role to play in the post-pandemic economic growth and recovery. WINDTRE has been exploring this range of potential through a number of studies, publishing several reports during the year, including:

- "The value of connectivity in post-Covid-19 Italy" in collaboration with the Centro Studi Investimenti Sociali (CENSIS) and presented at the Luiss Business School in Rome;
- "The value of the telecommunications sector for the country system", prepared in partnership with the European House, Ambrosetti; and
- "The telecommunications sector in Italy: regulatory framework and impact analysis", in collaboration with the Luiss Business School of Rome.

These reports highlighted a range of insights and recommendations relating to network development needs and digital inclusion, which are making an important contribution to local discourse.



Delivering responsible products and services

The division has a responsibility to play an active role in protecting customers from the risks and potential harm where telecommunications services are misused or abused. This includes working to protect the privacy of customer data, maintaining the highest level of cyber-security standards, taking action to help reduce scams and identity theft, and supporting customers in their digital safety as they use the products and services provided by the division's businesses.

Data privacy

The right to privacy is recognised in the Universal Declaration of Human Rights as a fundamental human right. This has been extended to recognise the right to data privacy in many jurisdictions throughout the world. Protecting the data entrusted by customers and employees is therefore of the highest priority to the division. Failure to maintain a rigorous approach to data privacy can have significant impact on reputation as well as direct financial consequences.

Data protection laws throughout the world continue to emerge and evolve, and compliance with these laws is guided by country-specific privacy policies with advice and guidance on operations provided by locally appointed Data Protection Officers. The EU General Data Protection Regulation is considered to be the highest standard of data protection legislation and compliance and standards to uphold this regulation are embedded in operations and processes throughout the division. Mandatory training is provided to all European employees, including new starter induction as well as on-the-job refresher training. Further, specific training has been developed for sales support staff and system administrators.

Country-specific Privacy Notices have been developed and adapted to local regulatory requirements. These are available on country-level websites in local languages, with clear information on the collection, use, sharing, retention and deletion of personal data including data transferred to third parties (in addition to opt-outs). Contact details are provided for data subjects to raise concerns about data privacy and to exercise their rights under data protection legislation.

Entrusting the personal data of customers and employees to third party vendors for data processing services requires adequate data protection from a technical and organisational point of view and minimum-security requirements are required from all vendors as part of contractual due diligence. These requirements relate to:

- General security in terms of physical security, access policies, software, hardware and cloud resources protection;
- Security controls focusing on the protection of data;
- Applicable privacy law; and
- A list of internationally-verified certifications, standards and frameworks.

These requirements are supplemented with many other compliance requirements in line with country-specific data privacy laws. Third parties must also undergo rigorous assessments where appropriate and adhere to the terms and conditions in data processing agreements. Further in-depth inspections are carried out for selected third parties.

The division continues to adopt new control systems to strengthen governance, risk management and compliance to minimise the risk of regulatory action being taken for non-compliance with data privacy legislation. For example, WINDTRE has adopted a Governance, Risk Management and Compliance system that allows it to monitor the entire data processing chain, as well as

to analytically assess the level of compliance of each system involved. In 2021, WINDTRE invested approximately EUR18 million in services and platforms for data and system security.

Reflecting the highest standards that the business applies to maintaining data privacy, in March 2021, 3 Hong Kong was awarded a Gold Certificate at the "Privacy Friendly Awards of the Office of the Privacy Commissioner for Personal Data, Hong Kong".

As the rate of technological development continues at speed, new legislation on data protection has developed globally, and in the last year, new laws modelled on the GDPR have emerged in China, Vietnam and India, which impact indirectly on the Telecommunications division when contracting with entities operating in those territories. The transfer of personal data from the EU to non-EEA countries without adequate standards of protection for that data continues to be scrutinised by both regulators and the courts. The division is monitoring developments in this area to ensure that the transfer of data is in compliance with appropriate transfer mechanisms.

Cyber security

The division's cyber security measures protect the confidentiality, integrity and availability of systems and information. This is an issue of significant public concern as critical infrastructure increasingly moves onto digital platforms across all the division's operating markets, with potential vulnerability to cyber-attacks and the consequences of data breaches.

To meet these challenges, the division coordinates cyber security efforts across its telecommunications businesses, and collaborates with wider industry bodies such as the GSMA and ETSI so that it can counteract and mitigate the latest security threats in both IT and mobile networks.



The division has adopted international standards and frameworks such as ISO 27001 and the NIST Cyber Security Framework to ensure that systems are as secure and resilient as possible, and to ensure compliance with all applicable laws. Principles contained within these international frameworks are translated into risk-based operational practices, where security is a key consideration in the design, implementation, running and decommissioning of systems; a method that has been applied in digital transformation projects at the largest businesses. Security risk assessment, vulnerability assessments and minimum control standard checking processes for new products and services are carried out regularly.

People factors are crucial in raising cyber security awareness and maintaining vigilance. The division therefore holds regular online training for both employees and contractors, to boost staff security awareness, especially on aspects relating to social engineering, phishing and ransomware attacks. Instructor-led sessions are also held for high-risk functions to reinforce best practice and identify any areas of concern.

External consultants are engaged regularly to conduct ethical hacking against the division's networks. These exercises probe not only the IT aspects, but also the people aspects, for example by sending phishing emails to gauge staff responses, tailgating employees to gain access to office areas, and attempting to plant monitoring devices into the company's networks or IT infrastructure.

The division is continuously evaluating emerging technologies to assess relative risks and benefits and developing appropriate security policies and technical capabilities. As with most new technologies, the current set of emerging technologies such as pervasive IoT, automation, artificial intelligence and quantum computing potentially introduce new threats that need to be addressed. In many of these areas, research and standardisation efforts are underway to mitigate the risks. For example, the development of artificial intelligence-based and cognitive cyber security will be required to avoid artificial intelligence threats, and the achievement of autonomous self-adaptive and self-preserving networks will require the adoption of privacy-aware networks, zero-trust architectures and cyber-resiliency approaches. Similarly, the transition to quantum-resistant cryptography will be needed to protect against potential quantum attacks.

Reducing scams and identify theft

Scams are known to be a significant and growing problem worldwide. In the UK, for example, reports to Action Fraud, the fraud and cybercrime reporting centre for England, Wales and Northern Ireland, were up 33% during the 12 months to March 2021 as compared to the prior year, with victims losing GBP2.3 billion. Of all fraud types, phone fraud saw the biggest year-on-year increase, up 87%.

During 2021, 3 UK deployed additional technology that has enabled it to successfully filter and block inbound spam and fraudulent SMS traffic on its network. As a result, it saw a year-on-year increase of 33% in blocked SMS messages since 2020, with millions more prevented from reaching customers. Despite a rise in scam messages, since April 2021, the efforts of 3 UK have seen up to 5.8 million messages blocked per month, with that rising to 14 million during some of bigger attacks, such as "Flu bot".

There are several tools available for the businesses to combat fraud, and also to support other companies. Where local data-sharing arrangements allow, the Subscriber Intelligence application is able to provide data that enables stronger customer identification processes and hence prevent fraud. 3 Austria has implemented two Application Programme Interfaces (APIs) to support secure data transfer and customer identification.

Digital safety and wellbeing

As the digital world has grown, so too has the misuse of the internet. Risks and issues faced by customers include security of personal data and information as they use their devices, potential exposure to offensive or abusive content, the threat of cyber-bullying, as well as the mental health impacts of social media use. The division has a responsibility to play its part in protecting customers using the controls that it has available, as well as to support customers in using the internet as safely as possible.

Across the division, the businesses are launching products and services for consumer and business customers to help to protect their online safety and security.

For example, WINDTRE has launched a number of products. This includes Secure Web, a cyber security service addressing the particular needs of SMEs, and offering customers protection from attacks and malicious agents. WINDTRE also offers Family Protect and Security Pro, a suite of apps dedicated to navigating the web safely, protecting the whole family on both fixed line and mobile devices.

In partnership with award-winning cyber security company Corrata, 3 Ireland offers a business mobile security solution, 3Mobile Protect, that protects mobile devices from phishing and malware and prevents data loss on company smartphones and tablets. This responds to the increasing number of mobile phishing attacks occurring outside of email, and the importance of raising standards of mobile security, which is often given less attention than laptop computer security by businesses. 3Mobile Protect is inexpensive, easily accessible for SMEs or corporate users and set-up effort is minimal.

SUPPORTING CHILD SAFETY

In 2018, WINDTRE launched the award-winning "NeoConnessi", an education platform in Italy to help parents and children navigate the online world safely together. The platform provides articles, insights, technical tips, and advice on how to create a healthy tension of control and trust with one's child as they begin their online introduction. Chosen experts and experienced parent bloggers also contribute to ensure content is best suited to the needs of parents. In 2021, it launched a children's story including important messages about surfing the web safely, developed in collaboration with the Italian Police. This was distributed to 14,000 classes of 7,000 schools in Italy.

In 2021, WINDTRE also added a new feature, "Neoconnessi Silver" with a training course, video tutorials, articles and insights dedicated to seniors to strengthen the bond between generations on digital safety and reduce the digital divide.

Creating a great place to work

The Telecommunication's division aims to create workplaces that attract and retain diverse talent and where all employees are empowered and supported to be their best selves at work.

While the needs and priorities in individual markets may differ, four key factors are important to achieving this objective across the division:

- A clear framework for employee engagement;
- Clear purposes and values which are embedded within the organisation, and to which all employees feel connected;
- An inclusive culture which values the diverse perspectives of all individuals and empowers them to be their best selves and work; and
- A structured approach to career development and performance management which provides meaningful career pathways and empowers all employees to realise their potential.

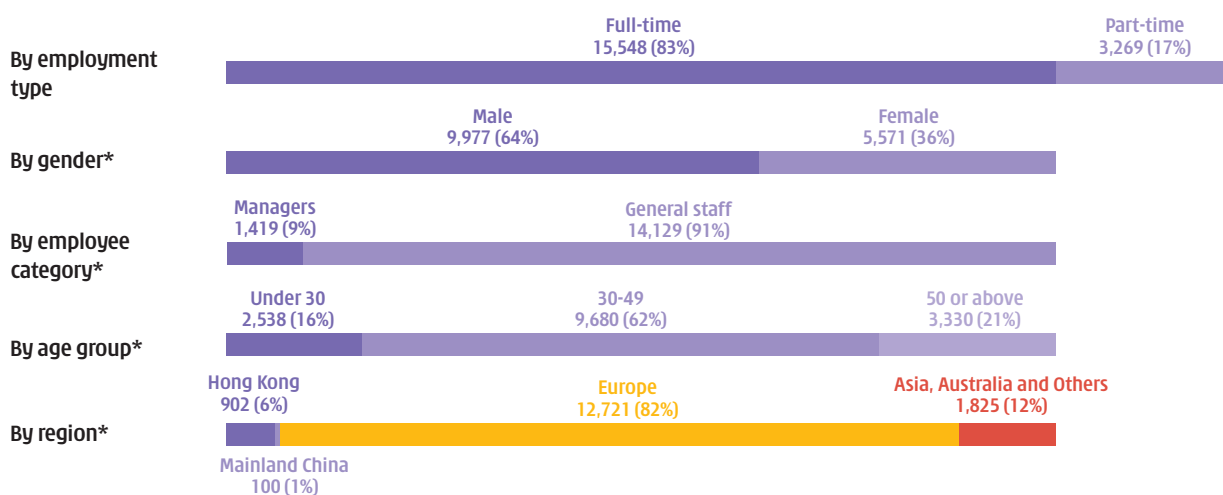
Employee engagement

A fundamental aspect of employee engagement is acting on timely, data driven insights to inform action plans, which are acted upon and updated as circumstances and performance change.

Reflecting this, the businesses conduct regular, confidential and anonymous employee engagement surveys (annually or twice-yearly) covering topics such as motivation, culture, leadership and personal development. Senior management reviews this feedback to understand strengths and issues highlighted by employees, and to implement improvement plans where needed. Managers also discuss findings and potential changes with their teams.

In different markets these surveys are complemented by additional surveys or other feedback mechanisms. For example, **3** Denmark conducts an additional annual survey on employees' mental and physical health; **3** Austria seeks 360 degree feedback for managers, and for the first time in 2021, surveyed perception of employer brand; and WINDTRE has conducted thematic surveys such as the 2021 Diversity and Inclusion survey.

Figure 37: Employee profile as at 31 December 2021



* full-time employees only

The division also takes advantage of other forums to elicit feedback such as through “Tell Us” sessions, onboarding and exit interviews and through external review platforms such as Glass Door.

WINDTRE's engagement survey, “#diciamolanostra”, conducted since 2017, placed it in the Top Companies in Italy for Employee Experience for 2021, with an Employee Engagement rate of 87%, exceeding the benchmark of other Italian companies by 5%. Reflecting this performance, WINDTRE was also awarded Top Employer for Italy by the Top Employers Institute, for the third successive year in 2021.

During 2021, two of the businesses were recognised for their well-regarded employer brands. WINDTRE was recognised in the Best Employer Brand category of the Italy LinkedIn Talent Awards, and **3** Hong Kong was awarded Asia's Best Employer Brand at the 12th Asia's Best Employer Brand Awards, by the Employer Branding Institute.

Employee engagement during the pandemic

During the pandemic, the businesses worked to ensure that employees remained connected to the workplace, helping to mitigate the risk of disengagement and disconnection from company culture during extended periods of lockdown.

This included support with IT set-up for home working, increased team meetings including regular one-on-one meetings to support employee wellbeing, set-up of new intranet sites and workplace social media platforms, access to healthcare services, additional employee benefits such as vaccination leave, and updated health and safety arrangements to protect employees for return to office.

3 Hong Kong's 3recreative Group, consisting of employees from different departments, was tasked with helping to enhance staff engagement and reinforce employees' sense of belonging by organising events, sharing sessions and group purchases. The business also introduced a new communications platform including announcements and videos on business developments and other interesting topics such as sustainability to keep employees connected.

3 Ireland offered several support and wellness options for employees during lockdowns, such as the Employee Assistance Programme and Digital Doctor, as well as talks on mental health and other aspects of wellbeing. As part of its Wellbeing Strategy, it has partnered with Headspace, the leading mindfulness and meditation app, offering all employees free access to Headspace content for a year.

Engaging employees through sustainability

Sustainability has become important to the employee value proposition for many companies, and can make an important contribution to workforce engagement and positive workplace culture.

Reflecting this, the businesses have been engaging employees on sustainability through a range of mechanisms.

In 2021, WINDTRE launched a new and expansive sustainability strategy covering how it will integrate sustainability across the business out to 2030. To engage employees in this strategy, it rolled out a new sustainability training course including three modules, developed together with the Alliance for Sustainable Development (ASviS), an organisation dedicated to sustainable development in Italy. It also launched a new sustainability newsletter for employees and held regular live-streamed sustainability events through the business intranet.

In 2021, **3** Sweden held a sustainability engagement week, including daily live podcasts and interviews of senior executives interviewed discussing various sustainability topics, including: the 5G implementation and how it can be used by business to achieve sustainable outcomes; gender equality and how **3** Sweden is “closing the gap”; and the **3** Sweden climate strategy and why science-based targets are important.

LINKING SUSTAINABILITY TO COMPENSATION

In 2021, WINDTRE established a new managerial incentive plan linked to new sustainability targets and metrics it developed as part of a strategy refresh on topics such as GHG emissions reduction and gender diversity. This now accounts for a weighting of 10% of short-term incentives and 15% for long-term incentives. WINDTRE has also identified senior management responsibility and progress monitoring for each target included within the plan.

Learning and development

The telecommunications industry is evolving at a rapid speed with new technologies such as artificial intelligence and cloud computing demanding more from employee skillsets. The division therefore reviews the critical skills employees need to have on an ongoing basis and invests in programmes to keep their skills and knowledge relevant and future-ready.

3 UK and **3** Ireland are building digital skills in areas such as search engine optimisation, search engine marketing, DevOps, DesignOps and Adobe Experience Manager through digital platforms the businesses have invested in. **3** UK is also proactively equipping its people with skills in agile working methodologies, providing certification for Product Owners and Scrum Masters, and in user experience design and testing skills to support its user-centric design principles. **3** UK delivered over 650 hours of training across the business using its Pluralsight digital training tools. LinkedIn Learning is also leveraged to give employees access to over 16,000 courses on topics such as artificial intelligence, data science and business analytics.

WINDTRE invests in a range of activities and support measures to prepare its people for the challenges of the future, with its target linked to managerial incentive schemes. During the year it delivered more than 260,000 training hours across an expansive learning and development plan to cover soft, digital, and language skills, including its Digital Mindset Development Programme for all WINDTRE employees. WINDTRE also supported upskilling and reskilling for the technology transformation, and supported mentoring programmes for targeted groups of employees, including "Future Leaders".

Beyond digital skills training, skills gaps are identified through training needs analysis, and training is provided accordingly across a wide range of areas such as change management, negotiation, presentation, resilience, storytelling, time management, emotional intelligence, working virtually and business writing skills. The division also supports further education opportunities through education support funds.

Effective and flexible leadership is critical to business success and as such, a number of businesses have developed comprehensive programmes to facilitate high performance in leaders and their teams.

The Elevate Leadership Development Programme is available to all people managers at **3** UK and **3** Ireland. The programme is updated annually to provide comprehensive growth and development in all areas of leadership. At the senior level, the programme also provides for 180 assessments and 1-2-1 coaching for the participants.

3 UK and **3** Ireland also have access to the Phenomenal Teams programme which is designed to build high performance teams. The programme takes place over a six-month period and has robust assessment built in to test how effective the interventions have been for the team. There is also an Amplify New Manager Programme, available to all new people managers in the **3** UK and **3** Ireland businesses providing a comprehensive introduction to leading at **3**.

With a view to developing a pipeline of future talent and leaders in the company, **3** Hong Kong holds an annual management trainee programme for university graduates. New recruits participate in cross-functional rotations, in addition to comprehensive training and mentorship from senior leaders before taking on permanent roles within the business. Through its Reverse Mentorship Programme it also assigns senior managers with reverse mentees to share their insights from the perspective of the younger generation.

Inclusion and diversity

Across the division, the businesses recognise the value of embracing diverse perspectives, experiences and ideas, with a workforce which reflects the diversity of the customer bases they serve. They also recognise the importance of an inclusive culture to the overall employee value proposition, thereby supporting the attraction and retention of talented employees, enhancing employee motivation, and increasing productivity overall.

During 2021, the businesses focused on the establishment or further enhancement of employee resource groups to act as spaces for people to seek views, build action plans, and celebrate the diverse range of life experience within the organisation. Overall, each business aims to address the local needs of their employee base in their markets.

3 Denmark has a diverse employee demographic and a strong focus on promoting gender diversity, having set an overall gender diversity target of 40% female representation across the organisation, as well as individual gender diversity targets for retail stores, telesales and customer management teams. To support the achievement of these targets, specific initiatives have included a review of the recruitment process, with job descriptions and postings amended to motivate a broader applicant pool, as well as changes to applicant screening and interviews.

3 Austria has a strong focus on raising awareness and visibility of inclusive practices, and was awarded the equality seal of quality for its work to promote gender equality within its business and beyond. Its actions include modifying its job advertisements to be more inclusive and early encouragement of girls into technology careers, including the popular “bring-your-daughters” day, and cooperation with schools to attract female talent to into the telecommunications industry.

Recognising the importance of data driven insights on inclusion, WINDTRE launched a diversity survey which will underpin its future strategic planning. Its goal is to ensure gender equality in access to growth, career development and remuneration opportunities. It is targeting gender balance in recruitment and promotions, and is focused on equal pay for men and women, having obtained Equal Pay Certification from an external provider. In recognition of its efforts, WINDTRE was awarded the 2021 Award as Best Employer for Women by Istituto Tedesco di Qualità e Finanza and La Repubblica.

WINDTRE has also given additional attention to making its working environment and programmes inclusive to persons with disabilities by nominating a dedicated Disabilities Manager and establishing a disabilities steering committee including members from HR, IT, Privacy and Health and Safety. A Disabilities Hub has also been developed to promote awareness and ensure the services the business offers are inclusive to those with disabilities.

During 2021, **3** UK and **3** Ireland launched an updated strategy to be at the forefront in embracing diversity, inclusion and belonging. It expanded employee networks groups and external partnerships

and held events throughout 2021 to raise awareness, inform, and inspire the diverse workforce, attended by over 1,000 employees.

3 UK further signed the Business in the Community Race at Work Charter, a public commitment to improving the experiences of black, Asian and minority ethnic employees in the workplace, and progressed a range of actions aligned with this commitment.

3 UK also rolled out inclusive leadership training for its people managers, a new introduction to diversity, inclusion and belonging module as part of the employee onboarding process, as well as new Inclusive Meetings Guidance. The new **3** UK headquarters at Green Park was also designed to be an inclusive workspace which meets the needs of the diverse workforce, partners and customers. Design features include a range of spaces to support different ways of thinking and interacting, non-gender specific toilets and showers, technology systems inclusive of those with hearing and visual impairments in meeting rooms, signage to support a range of needs including the use of Braille, a family-friendly area and space for cultural needs.

During 2021, **3** Ireland also dedicated focus to supporting transgender and non-binary employees, and elevated its actions on cultural diversity with a range of cultural diversity celebration days, including an inclusive language event and enhancements to its Cultural Diversity hub. It also sought to influence greater alignment from supplier partners through its new Supplier Code of Conduct. Reflecting significant progress, **3** Ireland was awarded the “Gold accreditation” by Investors in Diversity, only the fifth organisation to achieve the gold standard in Ireland.

3 IRELAND STEM SCHOLARSHIP

In July 2021, in an effort to influence the wider system and attract women from around Ireland and across the world to study STEM subjects, **3** Ireland and Trinity College Dublin announced a new STEM scholarship partnership which will fund the creation of 25 Scholarships for Women in STEM over five years, and two Trinity Access Teacher Fellowships for three years.

“This project is very worthwhile. I’m really delighted that **3** has decided to support the teaching of maths at secondary level and STEM subjects for women in Trinity at third level. By working together we can help to persuade people to study these subjects and introduce them to the beauty and wonder of maths and science.”

– Dr Patrick Prendergast, Provost of Trinity College Dublin 2011 – 2021



3 Ireland and Trinity College Dublin creates a scholarship partnership to attract women to study STEM subjects