

Ericsson  
2021 in  
review

Value creation  
for the future



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# This is Ericsson

Ericsson is a leading provider of mobile connectivity solutions to telecom operators and to enterprise customers in various sectors. Our portfolio spans Networks, Digital Services, Managed Services, and Emerging Business and Other, and is designed to help customers digitalize, increase efficiency, find new revenue streams and create new user experiences.

The core of Ericsson's strategy is technology leadership. This also provides the foundation for expansion into enterprise. Conditional to closing, the intended acquisition of Vonage aims to enable Ericsson's creation of a global cloud-based platform for open network innovation, in the longer term.

Ericsson's business is divided into five geographical market areas: North America, Europe and Latin America, Middle East and Africa, South East Asia, Oceania and India, and North East Asia. The Company has some 100,000 employees, and customers in more than 180 countries. Ericsson is headquartered in Stockholm, Sweden. The Ericsson share is listed on Nasdaq Stockholm and the Ericsson ADS is traded on NASDAQ New York.

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# Strengthening a foundation for future growth

Fulfilling our purpose of creating connections that make the unimaginable possible is based on our leading technology position. During 2021, we capitalized on the strength of our core infrastructure business and continued to build a foundation for growth that takes advantage of new opportunities in enterprise digitalization.

I'm excited about what lies ahead for Ericsson. Our core business is strong and growing. During 2021 we delivered on our strategy of technology leadership in mobile infrastructure by expanding our market share and improving gross margins.

A decade ago, 4G digitalized the consumers' world. With 5G, we now have a platform that is revolutionizing enterprises, anything from how first responders work to new types of applications available to consumers. We believe that addressing these additional segments offers the wireless infrastructure market solid long-term growth prospects.

In addition to growing in our core business, we are also pursuing opportunities in the enterprise space – leveraging the strength of our mobile technology.

As enterprises increasingly choose wireless as their primary source of connectivity, we continue to provide pre-packaged solutions for wireless enterprise networking. These include dedicated networks, wireless WAN and IoT

connectivity. We see strong future growth potential in this area and are increasing our investments to capture this opportunity.

Going forward, the capabilities of 4G and 5G networks will increasingly be accessed through open cloud interfaces. To address this, we will build a global network platform for open innovation. A market for 4G application development already exists but with 5G, the capabilities and opportunities are markedly greater.

In 2021, we took a significant step by announcing our ambition to acquire Vonage, a global provider of cloud-based communications with over 120,000 enterprise customers and more than one million registered developers. Through Vonage, we intend to also offer unified communication and contact center platforms to our existing customer base. Longer term we will expose 5G capabilities through a global network platform to stimulate innovation on top of the network.

We plan to run Vonage as a new business area and will invest in growing its business.



This follows the same integration approach taken with Cradlepoint, which is performing well, in line with our acquisition plans, despite a delayed uptake of 5G devices.

## Business performance

In 2021, we continued our strategy execution and cemented a position as a global 5G leader. Our strong product portfolio and deep R&D capabilities supported market share gains despite considerably lower sales volumes in Mainland China. By year-end, Ericsson

supplied 108 out of 200 live 5G networks. More importantly, our solutions performed well in the field, earning top honors in multiple third-party benchmarks of network performance.

In line with sales growth, we strengthened our profitability, underscored by a strong reported gross margin of 43.4% and a reported EBIT margin of 13.7%. Our cash generation reached new records for the business, with free cash flow before M&A of SEK 32.1 billion.

In 2021, we increased the number of employees in R&D by 1,210 and invested a

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total of SEK 42.1 billion in this area – an increase from SEK 39.7 billion in 2020. We will continue to increase investments in our 5G portfolio, including in our orchestration offerings, to further position us in a future world of open standards and technologies.

#### 5G market

5G isn't just a new generation of mobile technology, it's transforming our world. For consumers, higher bandwidth, lower latency and more security and reliability are supporting new use cases such as e-health, connected vehicles and immersive cloud gaming. 5G fixed wireless access is also gaining momentum as many countries look to rapidly build out high-capacity broadband and close the digital divide. For enterprises, 5G is enabling organizations to optimize value chains and minimize costs and emissions related to operations and logistics.

Worldwide, there were estimated to be 660 million 5G subscriptions at the end of 2021, making 5G the fastest deployed mobile generation ever. It is clear that the pandemic accelerated digitalization, confirmed the criticality of digital infrastructure and further redefined our relationship to work, education and one another. During 2021, governments around the world continued to make wireless infrastructure the cornerstone of their pandemic recovery and economic growth plans.

#### Innovation and openness

Ericsson continues to stand up for free and open markets. We are part of a thriving ecosystem of innovators that provides others with access to our technology. Our patent portfolio is world leading with more than 60,000 granted patents. Through this portfolio, we continue to push the boundaries of what our industry can deliver to customers, consumers and enterprises.

Open innovation and collaboration has always benefited our industry. However, current geopolitical tensions threaten to splinter an ecosystem that took decades to establish. A fractured ecosystem would impact everyone, but higher prices and fewer choices would disproportionately impact developing nations. I hope the current protectionist discourse gives way to a more open and productive policy climate, that recognizes the benefits and gains of global cooperation, free trade and open markets.

#### Purpose and Vision

We are entering a new era of digitalization, unleashing a level of innovation never seen before. During 2021, we renewed our company's purpose to articulate our role in this development. "Creating connections that make the unimaginable possible" recognizes the core of what we do: building network infrastructure that connects billions of people and that will soon connect nearly everything.

These networks are a platform for innovation that is powering digitalization in every corner of the globe. Technologies such as 5G, AI, IoT and the cloud, are offering enterprises and society greater visibility and control and the opportunity to create new value by addressing growing demands and delivering superior customer experiences.

Connectivity is a powerful catalyst for transformation and sustainable development, one that will touch all parts of modern life. Achieving our ambitious vision is going to require a concerted effort between partners from across and beyond the ICT ecosystem.

#### People and culture

Companies are only as good as their people, and I am confident that we have the best people in the industry. The Ericsson team strives to be truly world class by championing

our values of respect, professionalism, perseverance and integrity. The turnaround of our fortunes would not have been possible without the great talent in the Company.

However, I am deeply saddened to report a sharp decline in our safety performance during 2021. Tragically, there were still individuals losing their lives during the year in preventable incidents and accidents while working for Ericsson. This is unacceptable and I have committed to taking urgent steps to alter this trend in 2022. Our goal is that no harm should come to any of our colleagues or contractors and that everyone should return home to their families, safely, every day.

Over the last few years, we have invested significant resources to strengthen our ethics and compliance efforts. This work takes time and includes putting strong systems and controls in place to prevent and detect wrongdoings. These investments have also allowed us to identify many wrongdoings that date back a decade. Confronting these past wrongdoings is critical to strengthening our compliance culture.

An important part of these efforts is creating a culture that promotes the right behavior while encouraging speaking up. During 2021, we made good progress embedding integrity, our new core value, and speaking up in our culture. This is evidenced by the continuous and increasing engagement of our employees over the recent years in raising compliance questions as well as potential concerns to ensure we conduct business with integrity. We saw an increase in reported potential compliance concerns by 10 percent. We feel this reflects confidence by employees and third parties in the integrity of our allegation management and investigation processes and that we take serious measures when we learn of any potential misconduct. We continue to invest heavily in improving our Ethics and

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Compliance (E&C) Program in accordance with our strategy and objectives, to remediate historical issues, including gaps in our compliance processes and internal controls, and to strengthen our internal investigations team.

Our cultural transformation and E&C Program deliver enormous value to the Company's employees and stakeholders through responsible and sustainable business practices.

#### **Sustainability and corporate responsibility**

Sustainability is an integral part of Ericsson's strategy. In 2021, we set a long-term ambition for Ericsson to be Net Zero in carbon emissions across our value chain by 2040. During the year we also incorporated sustainability KPIs into our renewed credit facility. These activities underscore how sustainability is embedded throughout our operations. We continue to make progress on our portfolio and supply chain targets to halve our emissions by 2030 and to be Net Zero in our own activities at the same time.

We are committed to working with our customers to reduce energy consumption, emissions and costs from the operation of their networks. During 2021, we launched a series of ultra-light Massive MIMO radios that are up to 20% more energy efficient than the previous generation. Additionally, by applying connectivity solutions across other industry sectors, like transport and manufacturing, there is a potential to achieve a 15% reduction of global carbon emissions by 2030.

Our smart 5G factory in the U.S. highlights the sustainability gains possible through investments in connectivity. Using our own 5G solutions, our factory in Texas, USA, is designed to consume 24% less energy, 75% less water and is powered entirely by renewable electricity.

With around 2.9 billion people without internet connections, the digital divide contin-

ues to be a key challenge to global economic development. To address this issue, we have partnered with UNICEF in support of the Giga initiative which aims to connect every school to the internet by 2030. Through this effort, Ericsson is helping to tackle the challenge of mapping schools and assessing their connectivity in 35 countries by the end of 2023.

It is also crucial that young people have the right skills to contribute to a digital economy. Therefore, as part of the World Economic Forum Edison Alliance, Ericsson has committed to provide 1 million children and youths with access to digital learning and skill development programs by 2025.

These initiatives are underpinned by a strong focus on responsible business across the value chain, and Ericsson continues its long-standing commitment to the UN Global Compact's ten guiding principles.

#### **Concluding remarks**

The pandemic continues to shape our daily lives and has accelerated digitalization by years. At the start of the pandemic, 80% of our people moved to working from home with very limited disruption to our business. Digitalization represents a tremendous opportunity, including helping to solve what I believe is the most urgent issue we face: the climate crisis.

Over the next decade we also expect mobile networks to be a revolutionizing force for industry. We envision that limitless connectivity will redefine business and empower enterprises to become entirely agile with fully connected and constantly optimized value chains.

Our ambition is to continue to grow and develop our core mobile infrastructure business based on market growth and market share gains. With the investments we make in enterprise, through our pre-packaged wireless solutions and global network platform, we are

putting our company on a higher growth trajectory. Even though investments outside our core business may hurt profitability short term, we see that we can accelerate the pace towards reaching our long-term target of an EBITA margin (excluding restructuring charges) of 15–18%. After delivering an EBITA margin (excluding restructuring charges) of 14.6% in 2021, our ambition is to reach the long-term target no later than in 2 to 3 years.

I am excited about the future and the opportunity to imagine possible together with the incredible team at Ericsson. Our people are going to be pivotal in the realization of our vision: a world where limitless connectivity improves lives, redefines business and pioneers a sustainable future.

#### **Börje Ekholm**

President and CEO



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# 2021 highlights

## Networks

- Continuous strong momentum in 5G. 108 out of 200 live 5G networks by year-end 2021 were supplied by Ericsson. The Company was recognized as a market leader globally by Gartner and gained market share outside Mainland China.
- Ericsson invested in technology and cost leadership, strengthening its industry-leading portfolio, to benefit customers. Ericsson introduced ultralight, energy-efficient Massive MIMO radios for enhanced network performance and complemented them with a Cloud RAN portfolio for mid-band.
- Ericsson strengthened global supply chain resilience to ensure business continuity for our customers as a key priority.

## Digital Services

- Continued focus on R&D investments in cloud native 5G Core to secure market and technology leadership. Ericsson also invested in orchestration and automation to further accelerate 5G leadership.
- With its solutions, Ericsson addressed the strong demand for agility, quality and security, enabled through increased automation, high performing networks and low latency 5G.
- By the end of 2021 Ericsson had 48 5G standalone core (5GC) contracts, of which 10 were live with 5GC.
- Strong business momentum in the 5G Core portfolio with initial revenues in the second half of the year.

## Managed Services

- During the year, Ericsson invested in automation, analytics and AI offerings to increase customer value and efficiency in service delivery.
- Ericsson manages networks for approximately 200 customers, together serving more than one billion subscriptions.
- Ericsson continued to evolve the AI-based Ericsson Operations Engine for data-driven operations and optimization. 20 customers have transformed to Ericsson Operations Engine, representing more than 500 million subscriptions.
- Increasing traction for evolved portfolio with 10% of net sales coming from software and additional value added services (Value Packs).

## Emerging Business and Other

- Ericsson continued its expansion into enterprise with pre-packaged, wireless enterprise solutions, ensuring reliable and secure connectivity across businesses.
- Currently, there are approximately 8,000 enterprises onboarded to the Ericsson IoT platforms, with a growth of 23%. Ericsson also formed new partnerships within the industry ecosystem.
- Ericsson supplied 120 dedicated private networks to different verticals including mining, manufacturing and power utilities.
- The Cradlepoint solutions business contributed favorably to revenue growth and gross margin improvement.

## COVID-19

Ericsson delivered solid results in 2021 with limited impact from the COVID-19 pandemic, reflecting the positive response of Ericsson employees to the challenges presented by the global pandemic.

The health and safety of Ericsson's employees, customers, and other stakeholders is our top priority. We continued to take precautionary measures when and where needed, based on instructions from the World Health Organization (WHO) and

recommendations from government authorities. While mass vaccination against the COVID-19 virus during 2021 enabled the gradual return to normal working arrangements in some geographies, Ericsson continued to advocate working from home for the majority of its employees. Travel restrictions for non-essential international travel also remained in place.

Globally, more than 80% of our employees were working from home during most

of 2021. To ensure that employees have a good working environment, we continued our furniture program, which allows employees to order ergonomic office furniture for their home office. Ericsson also hosted seminars about health and well-being and ergonomics. In response to employee feedback, Ericsson is planning for a hybrid workplace in the future, which promotes flexibility and positive health and well-being.

Ericsson is working closely with its customers to support them in ensuring that they can maximize the capacity and performance of their networks. The current situation requires a humble attitude towards predicting the near-term future. However, based on our experience so far, we remain confident that our business can continue with limited impact from the pandemic.





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# Market and trends

As a technology frontrunner, Ericsson stays on top of trends and market activities to ensure that customer needs are fulfilled.

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# ICT industry trends



## More spectrum required for 5G

To serve the rapid uptake of 5G traffic and the introduction of new 5G-based services, telecom operators and other spectrum licensees need more spectrum. Low, mid and high spectrum bands have different physical properties that affect capacity, coverage and latency and must therefore also be matched with the service offering. The spectrum requirements in a local industrial environment and in rural areas can be very different.

New spectrum, as well as existing 4G spectrum, will be allocated for 5G use. Ericsson has developed Dynamic Spectrum Sharing that will allow 4G and 5G to share the same spectrum. This has already made the deployments of nation-wide 5G coverage in several markets possible.

During 2021 new spectrum bands, especially mid-band, have been made available in several markets and Ericsson's portfolio is matching these bands.



## 5G – the ongoing investment cycle

Each generation of mobile communications technology has opened up new opportunities for the telecommunications industry. When 4G was launched, it paved the way for smartphones, and enabled innovation and new services for consumers. In 2021 we entered the next chapter with the launch of 5G on a large and commercial scale, enabling innovation in enterprises.

As with previous mobile generations, investments in 5G will accelerate over the coming years as new 5G use cases and widespread adoption of the Internet of Things (IoT) take off. By 2027, Ericsson predicts that 5G will be deployed globally with approximately 4.4 billion 5G subscriptions, representing 49% of all mobile subscriptions. At the end of 2021 over 2 billion people, or close to 25% of the world's population, were living in areas with 5G coverage.



## Security

There is an increasing need for secure solutions for industrial automation and other private-network applications. Security requirements for networks are extensive and specified in standardization processes, network design and configuration. In the next phase of digital transformation with cyber-physical domains involving robots, sensors and autonomous cyber-physical processes, applications will have different and complex security requirements.

5G is based on global standards that have strong technical capabilities in the areas of security, privacy, reliability, availability and resilience. Ericsson believes security and network performance will rise to a level where networks can fulfil the requirements of even the most critical use cases for consumers and business.



## Artificial Intelligence

As new technologies like 5G, IoT and Cloud are gaining traction, networks are becoming increasingly complex. AI will enable efficient management of the data volumes this complexity produces. AI is also increasingly used to improve operational and customer experience.

As a response to customer challenges, Ericsson combines deep telecom domain expertise, data science and AI knowledge into 'AI by Design'. Ericsson's technology is AI-ready; we have made architectural decisions that aim to make AI easy to deploy, integrate across the network and solve problems holistically. We embed AI into every part of our portfolio where it makes sense.

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# Underlying megatrends



## Digitalization

The network platform forms the core of the digital infrastructure which is fundamental to the development of society. 5G is a key enabler for digital transformation and our reliance on phones, tablets and other devices highlights the need for the multi-lane superhighway that mobile networks provide.

As a society, we have taken a critical first step into the emerging mobile-first economy, catalyzed by the acceleration effect of a pandemic that has fast-tracked several years of digitalization in just 18–24 months. Ericsson continues to develop technologies that will serve as the foundation for connecting consumers and enterprises and support the sustainable development of society.



## COVID-19 pushing the technology tipping point

Challenged by the COVID-19 pandemic, companies, consumers and societies have significantly accelerated the adoption of digital technologies. New and accelerated customer behavior and needs, as well as unpredictable demand and a huge spike in working remotely are all important parts of the transformation. Hence, the importance of critical mobile communication and quality in connectivity has proved to be more important than ever.

The pandemic has acted as a catalyst of rapid change and cellular connectivity has proved to be the backbone of society, highlighting the need for universal internet access to support inclusive sustainable development.



## Climate change

The 2021 IPCC report (UN Intergovernmental Panel on Climate Change) stresses the need for immediate and drastic climate action to limit global warming to 1.5°C above pre-industrial levels. 5G-enabled capabilities such as enhanced connectivity, increased operational efficiency, and improved data sharing can contribute significantly to the reduction of GHG emissions.

According to Ericsson's research, ICT solutions have the potential to enable a 15% reduction of carbon emissions by 2030 across industries such as manufacturing and transport. In alignment with the 1.5°C ambition in the Paris Agreement, Ericsson has set an ambition to reach Net Zero carbon emissions across its value chain by 2040.



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# Resilient 5G systems

High-performance 5G systems are always available, perform as expected and deliver information uncompromised from the source, and recover quickly when faced with disturbances or attacks. The technical capabilities of a resilient 5G system include a combination of reliability, availability, robustness and security, whilst protecting privacy. These are foundational capabilities on which the ecosystem can confidently innovate and digitalize.

Existing critical functions in society are being digitalized and becoming dependent on telecom networks. At the same time, new capabilities are enabling the realization of new use cases. This is driving the evolution of traditional telecom networks into the primary innovation platform for both industry and society.

Throughout the ongoing digital acceleration, robust mobile networks have proved themselves to be invaluable in weathering the traffic storm. In doing so, they have provided the resilience to keep businesses connected, societies interactive, and mission-critical communication use cases running.

Unlocking higher predictability with five-nines resilience creates a powerful foundation for the new era of digital infrastructure that is opening up new possibilities for innovation across existing and new business, society and mission-critical use cases.

Our market-leading solutions equip telecom operators with energy efficient high-performance networks with security built into each layer of the network.

Our customers are well positioned to capture the digitalization opportunities realized by a resilient 5G system. For example, First Net in the US, connected all first responders in one network to improve and harmonize communication capabilities across the first responders. The solution handles worst-case scenarios, provides high availability and reliability, including always-on 24/7 with multiple priority levels to protect against traffic congestion. Secure, timely sharing of data, images and video, particularly when consumer and business traffic surges, is a critical requirement. New use cases being explored include drones, connected ambulances and AR in firefighters' helmets.





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# Strategy

The execution of our focused strategy has created a robust foundation for the future and made us a global leader in 5G. We have accelerated the pace towards our long-term EBITA target of 15–18% and now aim to reach it no later than in two to three years. We continue to pursue selective, disciplined and profitable growth in order to build an even stronger company long term.

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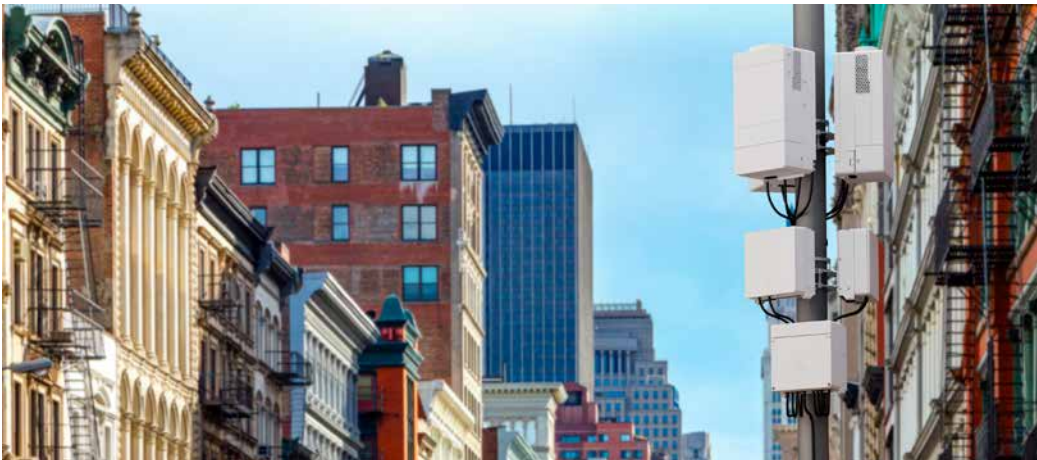
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Business strategy

# Creating long-term value

Ericsson’s strategy is to create long-term value through technology leadership. We aim to address long-term opportunities that present clear advantages of scale and new, profitable revenue streams. The Company’s ambition is to grow faster than the market through organic growth and acquisitions, with a focused approach based on the following criteria:

<b>Selective</b>	Product-led growth aligned with our streamlined portfolio and focusing on existing and targeted customers
<b>Disciplined</b>	Commercial and financial discipline and excellence in contract execution
<b>Profitable</b>	Growth is managed for value creation to support Group financial targets



## Building a stronger Ericsson long term

The execution of our focused strategy is visible in our solid financial performance, which shows organic growth, increased EBIT margin and a positive free cash flow. We are accelerating the pace towards reaching our long-term target of EBITA<sup>1)</sup> 15–18% with an ambition to reach the target no later than in two to three years. We continue to improve flexibility, reduce sensitivity to business mix and lower working capital. Our strategy to increase investments in research and development (R&D) for technology and cost leadership has been successful, giving us a competitive advantage as telecom operators accelerate their 5G investments.

The core of Ericsson’s strategy is to create long-term value through technology leadership. This provides the foundation to expand into wireless enterprise and create a global network and communication platform for open innovation. Through this platform, we aim to create an open 5G ecosystem, enabling developers and enterprises to access network capabilities for the development of completely new and improved services. This will support monetization for players in the ecosystem, including our telecom operator customers.

<sup>1)</sup> Excluding restructuring charges.

## A customer-centric strategy

There are four key areas in which we can support our customers’ success:

- Capture new revenue streams and new opportunities made possible by 5G and Internet of Things (IoT).
- Improve end-customer experience and network performance – the main differentiators among telecom operators.
- Provide our enterprise customers with pre-packaged solutions, bringing best security, reliability and ease of operation.
- Relentless efficiency improvements to lower the cost of delivering the increasing traffic in the networks.



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## Ericsson's strategy

For over 145 years, Ericsson has created value by pioneering communications technology. In the 5G era and beyond, we will lead a new wave of innovation and create connections that make the unimaginable possible.

We remain focused on the needs of telecom operators and enterprise customers by supporting their success on their digitalization journey. Our team is committed to helping customers improve their efficiency and end-customer experience while also opening up new revenue streams.

Our business strategy is focused on creating long-term value through extended leadership in mobile networks and focused expansion into enterprise.

### Extending leadership in mobile networks

- Investments in technology leadership for cost and performance
- Strong product portfolio enabling growth through market share gains

### Focused expansion into enterprise

### Enterprise wireless networks

- Best security, reliability and operations, pre-packaged solutions
- Wireless WAN edge solutions through Cradlepoint solutions, Cellular IoT and dedicated/ Mission Critical mobile networks
- Enterprise wireless networks expected to grow 20–30% annually

### Global network platform

- Grow the communication platform business through the intended acquisition of Vonage
- Platform for open innovation ensures monetization and creates new experiences made possible by 5G to benefit the full ecosystem

## Extending leadership in mobile networks

### Technology leadership

Investments in technology leadership for cost and performance allow us to bring innovative solutions to the market ahead of competitors, giving our customers an advantage. Ericsson has a strong commitment to R&D, with substantial contributions to cutting-edge standards and technologies. The Company capitalizes on its R&D investments by creating, securing, protecting and licensing a portfolio of patents in support of the overall business goals. Ericsson's patent portfolio comprised more than 60,000 granted patents by year-end 2021.

### Cost leadership

A cost-efficient base is essential for Ericsson's business. Investments in R&D enable not only technology leadership but also cost leadership. Using the latest technology enables us to reduce costs in our solutions benefitting our customers and us.

### Efficient operations

Network complexity is rapidly increasing with 5G, Cloud, IoT and other new technologies, and it is becoming challenging for humans to keep up with this complexity. Operating a 5G network, including data points in IoT, combined with demands of mission critical use-cases, is only possible when applying AI, automation and data analytics to manage "data-driven operations" of telecom networks.

### Global, scale and skill

Our global presence, our expertise and our close interaction with our customers bring opportunities for us to grow with discipline, leading to increased market footprint and economies of scale. The skill and expertise of our people is a key asset enabling us to provide valuable advice to our customers across the world.







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## Focused expansion into enterprise

With 5G our industry is moving beyond connecting people to also connecting machines and things. 5G is a powerful platform for innovation, which opens up new revenue and monetization opportunities for telecom operators in both the consumer segment and the enterprise segment.

### Enterprise wireless networks

There is significant revenue potential for telecom operators in delivering new 5G enterprise services. Our studies show that, globally, telecom operators could see an additional revenue opportunity of some USD 700 billion by 2030, driven by industry sectors such as healthcare, manufacturing and automotive.

We address these opportunities through focused expansion into enterprise by leveraging our wireless strengths. Our ambition is to support our customers by developing competitive industrial solutions that are secure, reliable and easy to scale, such as Cradlepoint solutions, Dedicated Networks and our global IoT platform. We see acquisitions as enablers for future growth.

### Global network platform

As 5G is creating a large, global innovation platform, we aim to create an open 5G ecosystem, enabling developers and enterprises to access network capabilities for the development of completely new as well as improved services. We believe that this will support monetization for players in the ecosystem, including our telecom operator customers.

The intended acquisition of Vonage will give Ericsson a platform to help our customers monetize their network investments, optimize the user experiences and to stimulate additional growth opportunities. In the longer

term, Ericsson intends to add value to the full ecosystem – telecom operators, developers, and enterprises – by creating a global platform for open network innovation.

## Solid foundation

Growth – both organic and inorganic – is managed for profitability, value creation and to ensure its alignment with Group targets. We want to grow the business through continued focus on our core business and expansion into enterprise. Our ambition is to grow faster than

the market through organic growth and with an M&A strategy supporting our strategic ambitions and value creation. Sustainability and corporate responsibility is an integral part of this strategy and is embedded across our operations to drive business transformation and create value for our stakeholders.

Our approach to climate action is holistic and focuses on reducing our own carbon footprint, supporting customers to reduce their impact, and helping society reduce emissions through the increased deployment of connectivity solutions.

We safeguard our long-term competitiveness through a value-led approach. Our company's core values of professionalism, respect, perseverance and integrity are at the heart of everything we do and ensure that we succeed by doing business the right way.

Ericsson has a solid foundation to continue to grow, invest and create value for our stakeholders. By executing our strategy, we can help create limitless connectivity that improves lives, redefines businesses and pioneers a sustainable future.





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## Corporate Responsibility and Business Integrity

Sustainability and responsible business practices are fundamental to Ericsson's culture and its commitment to drive business transformation, engage employees and create long-term value for stakeholders. A substantial part of this value is derived from the Company's focus on sustainability in its operations and portfolio as well as how its technology is applied across sectors in society.

Ericsson strives to minimize the negative impact of its own operations and has made significant investments to improve the energy performance of its portfolio in order to reduce the environmental impact of the ICT industry and across other sectors.

Ericsson is committed to conducting business responsibly and remains steadfast in its

efforts to foster a culture of integrity and a speak-up environment.

The Company drives a responsible business agenda that extends beyond legal compliance by proactively mitigating and addressing risks. Ericsson's Code of Business Ethics, revised and updated in 2021, defines both the Company's ethical principles and its expectations of responsibility across the value chain. The Company works continuously to strengthen and enhance both its Ethics and Compliance program and practices with a focus on building and maintaining trust and transparency. Moreover, transparent and standardized sustainability reporting is the foundation for comparability, decision-making, accountability and risk identification.

## Ericsson's Ethics and Compliance Program

The Company's Ethics and Compliance (E&C) Program is based on ten hallmarks aligned with international best practices and regulatory standards. Ericsson strengthened and enhanced its E&C Program in 2021 with a focus on a global cultural transformation to ingrain ethical, responsible and sustainable business practices in everything that the Company does. The cornerstone of that transformation is Ericsson's new value of integrity in addition to professionalism, respect and perseverance. Other notable

developments include the launch of the newly drafted Code of Business Ethics, which outlines the Company's fundamental ethical principles and expectations. In addition to launching our newly drafted Code of Business Ethics, Ericsson also issued new and enhanced steering and guidance documents and processes related to gifts, entertainment and hospitality, third party management, risk assessment, allegation management and investigations and Mergers & Acquisitions.





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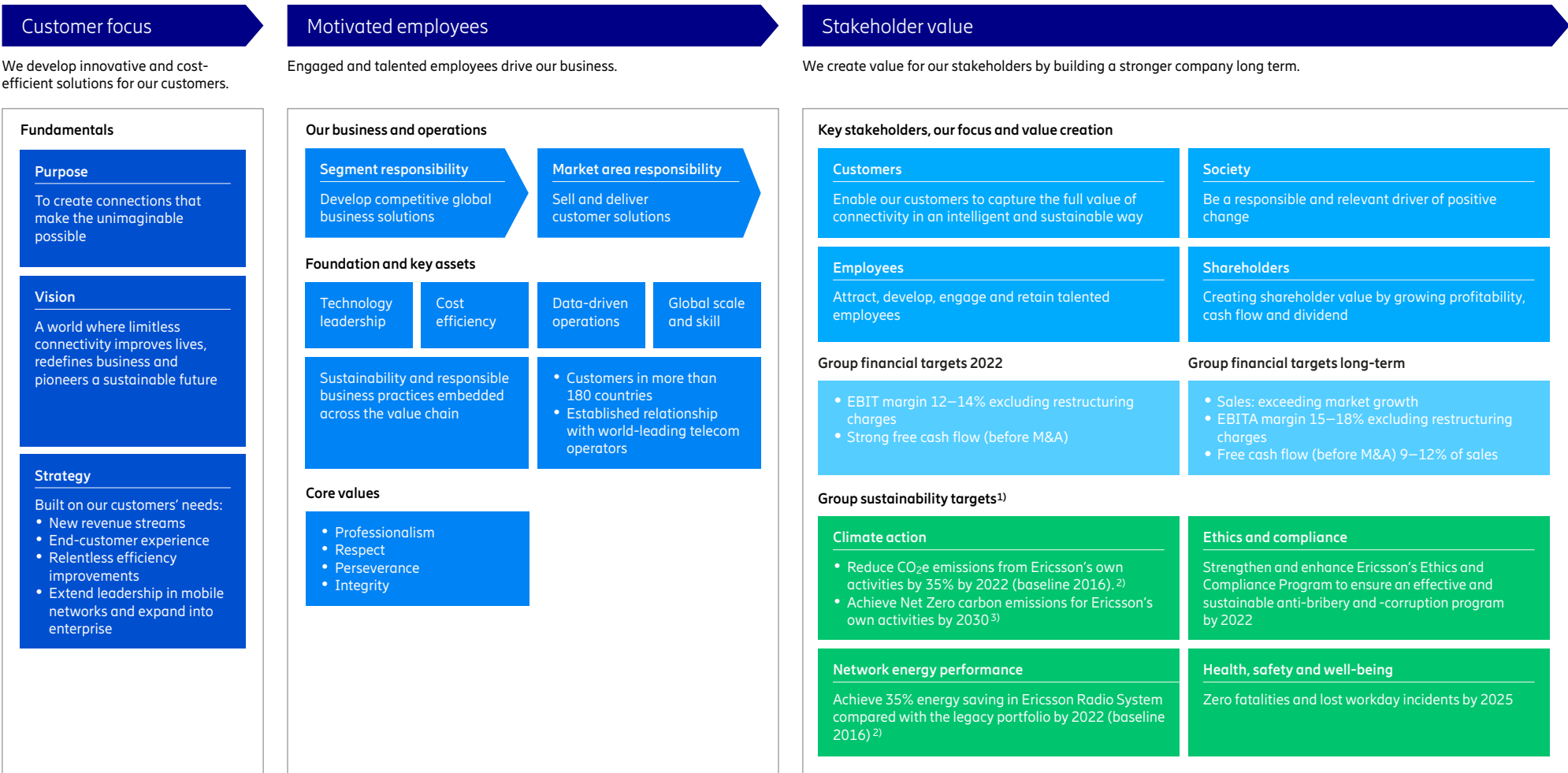
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Business model

# Customer focus and technology leadership

Our business model aims to manage changing market requirements and to capture new business opportunities. Customer focus and motivated employees are key to driving our business, creating stakeholder value and building a stronger company long term.



<sup>1)</sup> The full list of Group sustainability targets can be found on page 2–5 in the Sustainability and Corporate Responsibility report 2021.

<sup>2)</sup> A science-based target (SBT).

<sup>3)</sup> Ericsson has set an ambition to reach Net Zero carbon emissions across its value chain by 2040.





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# Targets

## Towards our financial targets

We are tracking towards our financial targets for 2022 with the aim to build a stronger Ericsson long term, beyond 2022. Our ambition is to reach the long-term EBITA<sup>1)</sup> target of 15–18% no later than in two to three years.

## Long-term targets

Ericsson's long-term financial targets cover sales growth, EBITA margin and free cash flow before Mergers & Acquisitions (M&A). The sales target is to grow faster than the market. The market is expected to grow by more than 1% per year and Ericsson aims to outgrow the market by gaining market share, growing in the enterprise segment, and achieving growth through M&A. The long-term Group target for EBITA margin<sup>1)</sup> is 15–18%. Sales growth, as well as gross margin improvements, driven by software sales and operational leverage, are the cornerstones in reaching the long-term targets. The Company will continue its focus on free cash flow (before M&A) with a long-term target of 9–12% of sales. Ericsson has set a target to achieve Net Zero carbon emissions from Ericsson's own activities by 2030<sup>2)</sup>.

## Tracking towards our financial targets for 2022

The Group profitability target for 2022 is EBIT margin<sup>1)</sup> of 12–14% excluding the Vonage-related segment. We will continue to increase investments in R&D to sustain our technology leadership, strengthen our competitive position and drive profitability. At the same time, we will continue our efforts to expand our presence in the enterprise market.

## Long-term targets

Financial and sustainability targets

### Sales

#### Outgrow the market

Baseline – >1% market growth  
Market share gain  
Enterprise – 5G and IoT  
M&A – Portfolio near

### EBITA-margin<sup>1)</sup>

15–18% of sales

### Free cash flow (before M&A)

9–12% of sales

### Sustainability target

Achieve Net Zero carbon emissions for Ericsson's own activities by 2030<sup>2)</sup>

## Free cash flow generation

Bridge from EBITA to free cash flow (illustrative)

	2020	2021	Long-term target
EBITA margin excl. restructuring charges	13%	15%	15–18%
– Financial net, tax and other	–2%	–2%	–4–5%
+ Add back depreciation	2%	2%	+2–3%
+ Add back depreciation of leased assets	1%	1%	+1%
+/- Change in operating net assets	–2%	1%	–1%
– Capex	–2%	–2%	–2%
– Leasing payments	–1%	–1%	–1%
– Restructuring <sup>3)</sup>	–1%	0%	–1%
Free cash flow (before M&A)	10%	14%	9–12%

All numbers are in relation to net sales.

<sup>1)</sup> Excluding restructuring charges.

<sup>2)</sup> In 2021, Ericsson expanded its carbon neutral target for own operations into a Net Zero carbon emissions target for own activities by 2030.

<sup>3)</sup> Restructuring charges as reported in the income statement for each year.

## Comments on free cash flow generation

- Focus on delivering high cash conversion from EBITA.
- Capex is typically about 2% of net sales.



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Targets for 2022<sup>1)</sup>

EBIT margin<sup>1)</sup>

12–14%

Free cash flow  
before M&A

Strong

<sup>1)</sup> Numbers exclude restructuring charges and exclude the Vonage related segment.

2021 Group financial performance

Sales in 2021 remained stable at SEK 232.3 billion, impacted by reduced market share in Mainland China and currency. Organic sales growth excluding the impact from market share loss in Mainland China was 8%. Gross margin excluding restructuring charges amounted to 43.5%, an increase from 40.6% in 2020 driven by operational leverage and improved competitiveness. EBIT margin excluding restructuring charges amounted to 13.9%, up from 12.5% as a result of improved gross income, primarily driven by Networks.

Strategy execution activities during 2021 included:

- We continued to increase investments in R&D for technology and cost leadership. R&D employees accounted for 27% of the workforce in 2021, compared to 26% in 2020.
- In Networks, we continued to grow our market share to reach approximately 39% excluding Mainland China, according to Dell'Oro Mobile RAN Quarterly Report February 2022.
- The Company supplied equipment to 108 live 5G networks.
- In Digital Services, we continued to capture market share within 5G Core. By the end of 2021, 48 5G standalone core (5GC) contracts have been won and 10 customers have gone live with their 5GC.

Continued focus on gross margin

Driven by operational leverage, gross margin continued to improve. Cost reductions, efficiency improvements and investments in R&D in selected areas are important to drive competitiveness and gross margin.

Strong cash flow and financial position

The strong focus on cash flow is paying off. Our ambition is to maintain a strong balance sheet and secure financial resilience, and we will continue to focus on profit and cash, with clear accountability and performance visibility. Financial discipline with strong focus on profitability and return on capital employed is key in all decisions. In 2021, the free cash flow before M&A was 14% of net sales compared to 10% in 2020.

Our strategy execution has resulted in a strong balance sheet and financial performance.

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# An enabler of sustainable development, economic growth and reduced carbon emissions

Ericsson's portfolio is built on innovation and transformation, paving the way toward a fully connected world. The Company has made substantial energy efficiency investments in R&D across all technology portfolios to offer telecom operators the most sustainable alternatives for their network transformation strategies. By modernizing networks with the latest technology and by replacing old equipment, it is possible to realize new business opportunities and, at the same time, create significant energy savings.

The ambitious global targets to reduce carbon emissions will require transformational shifts across society and will rely on technology, innovation and cross-industry collaboration. 5G, as an open innovation platform, will be critical for the digital transformation. Enhanced connectivity via 5G has the potential to transform how companies deliver products and services across a range of industries from manufacturing to healthcare to agriculture, while more efficient processes and use of energy will help drive sustainability and lower emissions.

In order to meet data traffic and energy efficiency demands, the mobile industry has taken collective action to be fully transparent about industry-wide climate emissions. This work includes a GSMA-led climate action roadmap to achieve Net Zero carbon emissions by 2050, which is in line with the Paris Agreement.

ICT and digitalization are key enablers of reductions in GHG emissions, and Ericsson is ready to support its customers in reaching their Net Zero ambition. According to Ericsson's research, ICT solutions can help enable a 15% reduction of emissions across industries by 2030, while being responsible for only 1.4% of the global carbon footprint.

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# Reducing energy consumption while increasing performance

Over the last few years, we have accomplished significant energy and performance improvements across our purpose-built Radio Access Network (RAN) hardware portfolio. Through large investments in R&D, we have been able to develop, manufacture, and deploy market leading products in our customers' networks allowing for more sustainable mobile networks. These improvements are also key to improving the business case and viability of renewable energy as the primary energy source for future RAN sites.

## Radio

We have developed a radio portfolio from classic single-band radios to multi-band, multi-sector radios. We have also added Massive MIMO (Multiple Input Multiple Output) radios to our portfolio, combining both radio and antenna array in one unit for excellent coverage and outstanding capacity for 5G.

Recent innovations have enabled more compact radios, combining lower energy consumption and increased resource efficiency, both contributing to more sustainable networks. New generations of technology specified by 3GPP enable further energy savings, specifically the transition from 4G to 5G.

The graph highlights the benefits of Massive MIMO radios with 5G for dense urban scenarios.

## RAN Compute

For RAN Compute, the brain of the network, performance has increased significantly in recent years. This has been enabled by the development of our in-house Ericsson Radio Systems (ERS) Silicon, which allows us to provide our customers with higher performance at a lower power consumption. Since 2015, we have decreased energy consumption as well as weight per capacity unit by approximately 80%.

Currently the energy efficiency of purpose built hardware outperforms general purpose hardware by a factor of three and although this gap is expected to close in the future, hardware that is purpose built will always be more efficient than general purpose hardware.

## Software

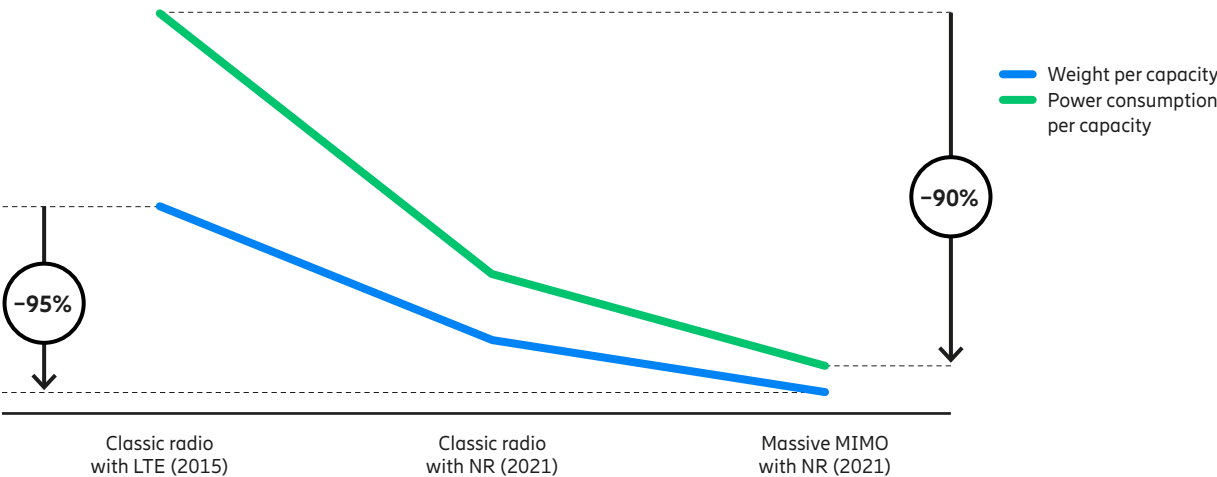
Whilst energy efficient hardware is key to building greener RAN sites, it needs to be complemented with advanced software features to maximize performance, lower power costs and increase sustainability of operations.

Close integration of our hardware and software increases efficiency and allows us to use smaller radios for the same capacity, at lower power consumption. For lower traffic loads, automated real-time decisions based on network activity enable the implementation of sleep functionality to decrease power consumption whenever possible. Sleep functionality is a feature that allows temporary shutdown of hardware. This shutdown can be momentary or last for longer periods of time depending on the current traffic load. Due to differences in the radio activity needed to maintain coverage, these savings are larger for 5G than for 4G.

## Our production

To bring about lasting environmental change globally we need to strive for sustainable operations in all businesses, including our own. In our award-winning 5G Smart Factory manufacturing complex in Texas, USA our own 5G solutions for energy efficiency operational is used. Powered entirely by renewable electricity, the smart factory is designed to utilize 24% less energy and 75% less indoor water usage than comparable buildings.

Power consumption and weight development of radio innovations since 2015



## Powering network efficiency

As part of a collaboration to improve network energy performance, Ericsson and Vodafone have completed the first deployment of a new energy-efficient 5G radio. Situated on the roof of the Speechmark, Vodafone UK's central London office, the controlled deployment of Ericsson's antenna-integrated Massive MIMO radio solution (AIR 3227) saw Vodafone's daily network energy consumption decrease by an average of 43% in direct comparison to previous generations of radio technology, and as much as 55% at off-peak times.

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# The four segments



## Networks

### Offering

Networks offers a multi-technology capable Radio Access Network (RAN) solution for all network spectrum bands, including integrated high-performing hardware and software. The offering also includes a cloud-native RAN portfolio, a transport portfolio, passive and active antenna solutions and a complete service portfolio covering network deployment and support.



## Digital Services

### Offering

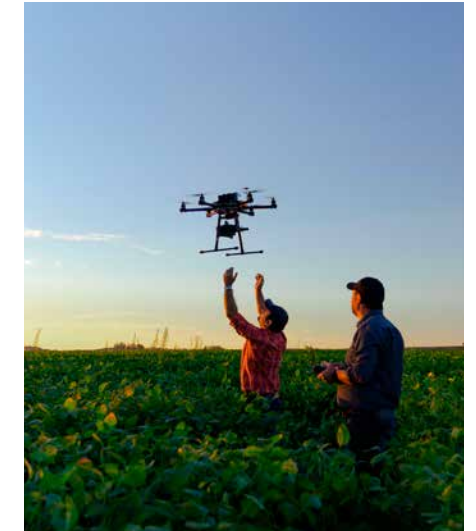
Digital Services provides software-based solutions for business support (BSS), operational support (OSS), communication services, core networks, and cloud infrastructure. The focus is on cloudnative and automation solutions supporting our customers' 4G and growing 5G consumer and enterprise business,



## Managed Services

### Offering

Managed Services provides Networks and IT Managed Services, Network Design and Optimization, and Application Development and Maintenance to telecom operators. These are delivered through the AI-driven Ericsson Operations Engine, a set of capabilities that transform operations to enhance customer experience, drive agile service creation and optimize costs in multi-vendor environments.



## Emerging Business and Other

### Offering

Emerging Business and Other supports enterprises by providing reliable and secure cellular solutions that are easy to use, adopt and scale for global and local needs.



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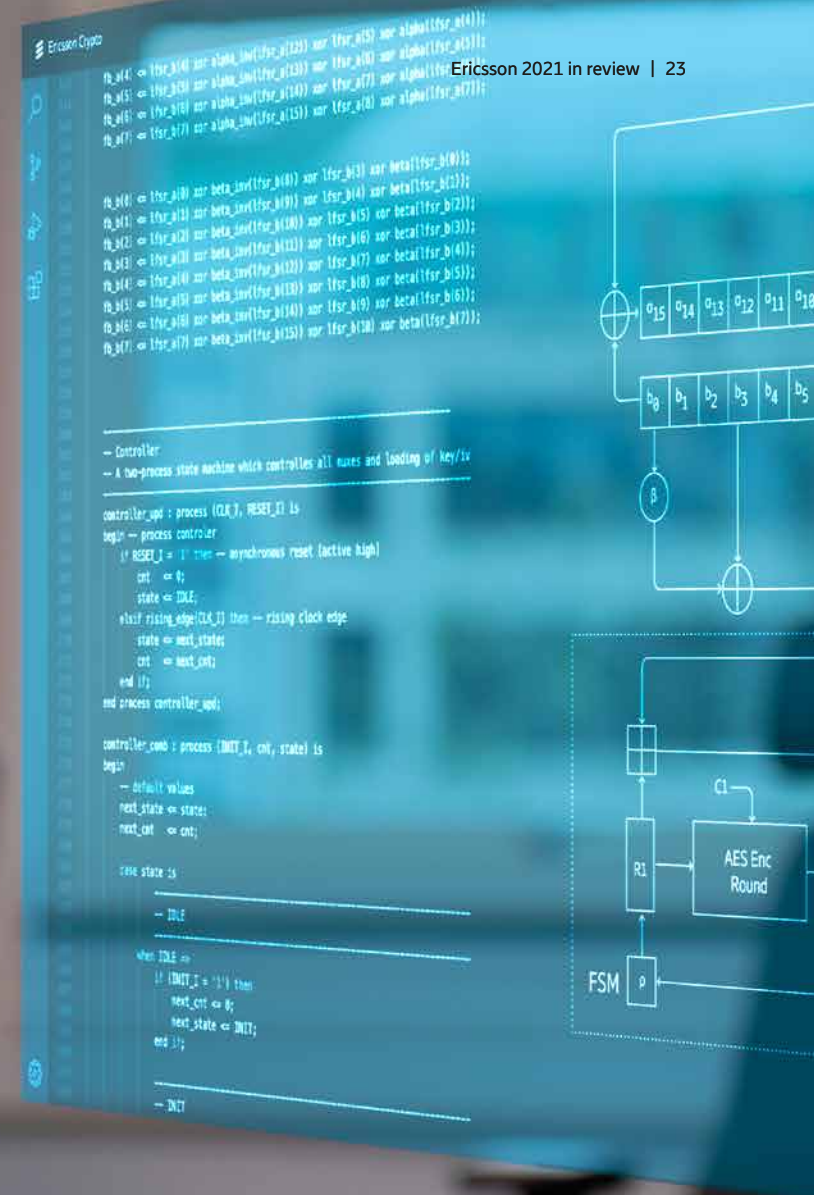
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We invest in R&D and innovation to create both technology and cost leadership. Enabled by a risk-balanced approach, resilience is fully integrated across our global supply chain.

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## Technology leadership

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# At the vanguard of innovation

Technology leadership is key to our strategy. Investments in R&D and global collaborations lay the foundation for the long-term success of our customers, the Company and its shareholders. Our strong commitment to R&D, our extensive patent portfolio, as well as external, independent validations in 2021, affirm that we are at the forefront of industry innovation.

## Committed to technology leadership

Since its foundation in 1876, Ericsson has created technology that connects people. Investments in networks gave rise to digital voice in 2G, mobile data in 3G and the app economy in 4G. Now, we have moved beyond connecting people, to connecting anything anywhere.

Emerging technologies such as edge compute, zero touch, AI and virtual and augmented reality are being researched, and 6G is already being explored. Our long-term 6G vision is centered around human and societal needs in 2030 and is pushing the boundaries of limitless and cognitive networking.

Pursuing the path of innovation and of pioneering future technologies, we make significant investments in R&D. In 2021, we invested SEK 42.1 billion in R&D, an increase from SEK 39.7 billion in 2020. Our strong commitment to R&D, reflects our strategy to invest in technology leadership for cost and performance. Using the latest technology enables us to reduce costs and energy consumption in our solutions, benefitting both us and our customers. In total, Ericsson had more than 27,000 R&D employees globally in 2021.

Our 5G technology has been subject to external, independent validation. Gartner Research & Advisory, named Ericsson a Leader

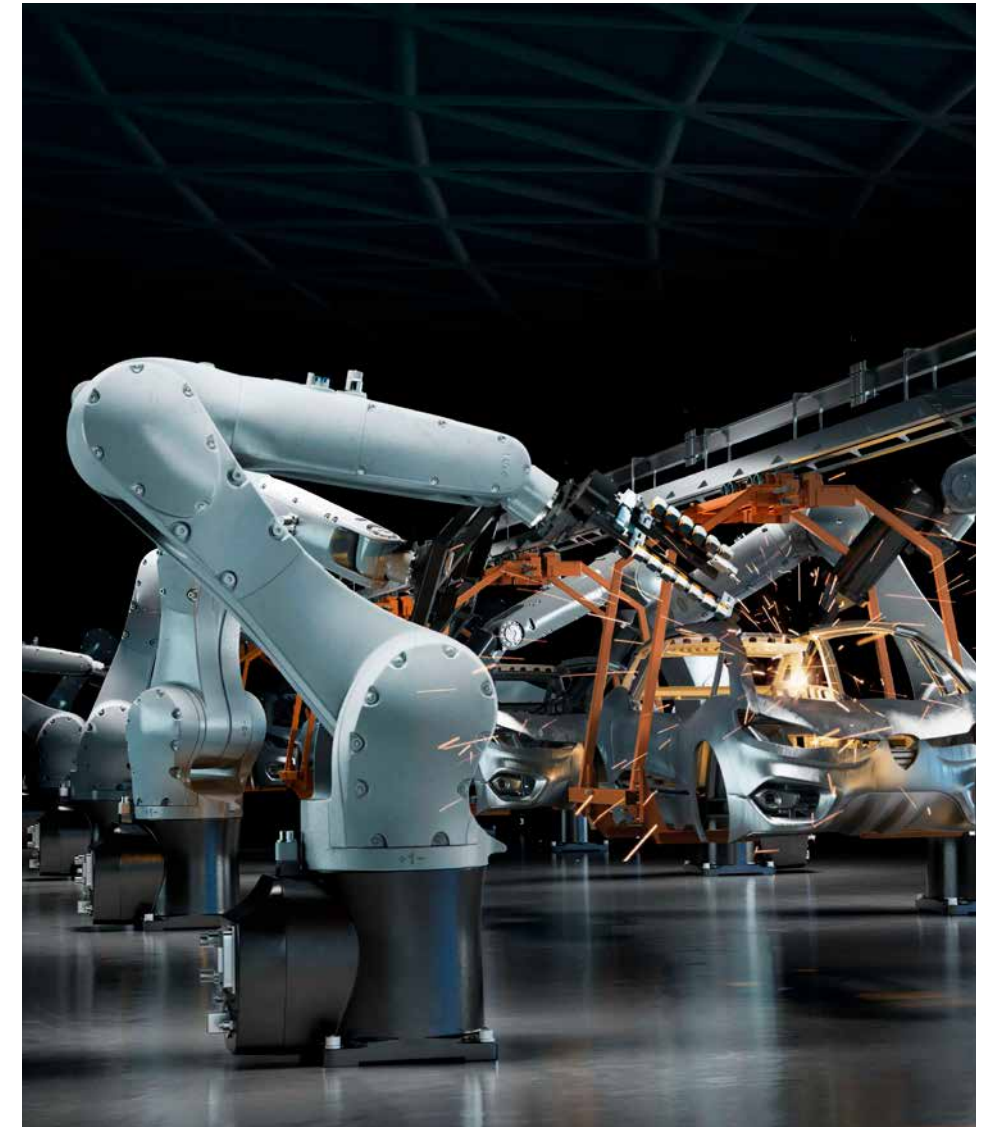
in the 2021 Gartner Magic Quadrant for 5G Network Infrastructure for Communications Service Providers. During the year, the business consulting firm Frost & Sullivan named Ericsson the market leader in global 5G network infrastructure.

## Ericsson Research

Innovation is an important element in our corporate culture and is key to our competitiveness and success. By early involvement in creating new standards and technologies we are often first to market with new innovative solutions – a distinct competitive advantage.

At the forefront of our technology leadership is Ericsson Research, conducting applied research, early standardization, and continuously feeding maturing technology innovation into product roadmaps and product development.

Ericsson Research had 750 researchers in 2021, half of them with a PhD, providing the Company with advanced system concepts, technologies and methodologies to secure long-term competitive product portfolios. Approximately 5% of the work force in Ericsson Research migrates into other parts of Ericsson every year, thereby injecting the organization with people highly skilled in the latest technology advancements.





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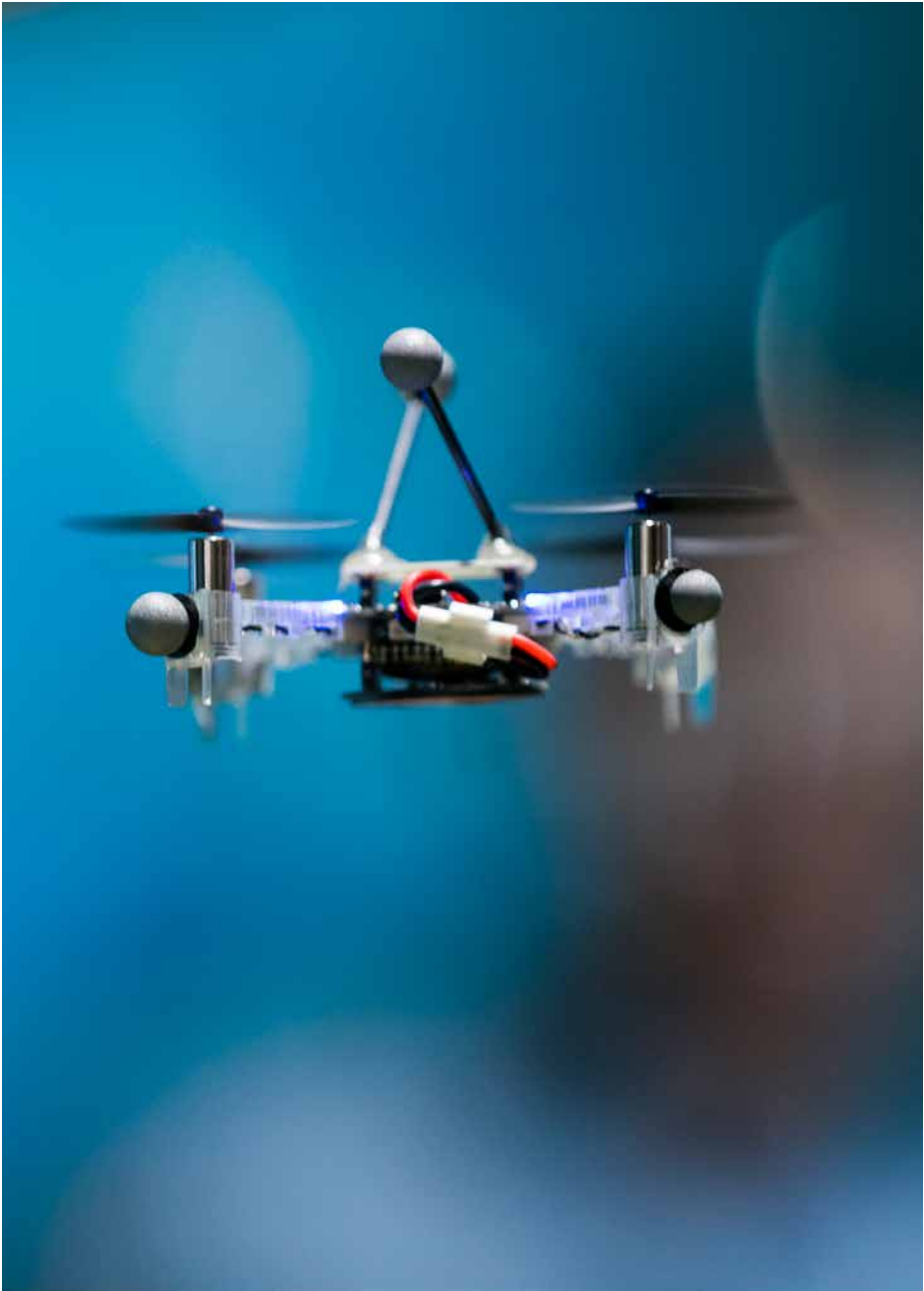
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A growing patent portfolio

We strongly contribute to the creation of open standards and have one of the industry’s most comprehensive patent portfolios containing more than 60,000 granted patents.

In telecommunications, technology leaders are in many ways defined by their leadership in standardization and Ericsson is the lead holder of 5G essential patents. Setting the standards agenda allows us to be the leader at system level, enabling both performance and cost benefits.

Ericsson supports licensing standard essential patents on Fair, Reasonable and Non-Discriminatory (FRAND) terms. Such licensing terms ensure a healthy eco system and allow for scalable manufacturing. Through FRAND licensing, Ericsson is compensated via patent royalties and are thus able to continue to reinvest in new technology for everyone’s benefit.

Collaboration

Our insight into the emerging technology trends and potential disruptors is supported by collaboration initiatives with leading industry forums and universities globally. Alongside leading customers and competitors, we are active in standardization organizations such as 3GPP, ITU, ONAP Linux Foundation and ORAN Alliance.

Our expertise, global presence and close interaction with customers across the world bring opportunities for Ericsson to grow, enabling increased market footprint and scale advantages. We work closely with our leading customers to understand their needs, align with them, and support them in defining their long-term technology strategies and roadmaps. We support our customers in identifying

new opportunities and markets. In vertical industries, we support customers through industry alliances, such as the Industrial Internet Consortium and the 5G Automotive Association, among others.

A place for customer collaboration is our innovation hub D-15 where we run the most advanced 5G testbed of its kind in Silicon Valley. Here we push the boundaries of innovation and technology together with our customers and partners. In Aachen, Germany, our Eurolab develops global solutions for communications networks in the 5G technology domain and in the application fields of Industry 4.0, transport and energy.

We work closely with academia to exchange competencies and identify emerging trends and technologies. The joint research results influence education and our world-class research and development. The collaboration between Ericsson and MIT, announced in 2021, on the design of state-of-the-art hardware that could power next generation 5G and 6G networks is one example of academic collaboration.

Ericsson ONE and Ericsson Ventures

Ericsson ONE is our internal accelerator where we develop new business ideas led by Ericsson intrapreneurs and innovators. Ericsson ONE captures ideas from across the entire global organization.

Ericsson Ventures invests in leading companies to drive innovation in new areas, accelerate our core business, and generate strong returns. We leverage our global reach and deep customer relationships for the benefit of our portfolio companies.



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# Supply

Our supply chain aims to secure high-performing, sustainable and cost-effective deliveries of hardware products, software and services to our customers. The supply chains are global with Ericsson’s production facilities and distribution centers located on several continents. This enables us to be agile, responsive and close to our customers with geographic adaptability and sustainable operations. It also ensures that we have the capacity to support the rapid build-out of 5G in all countries.

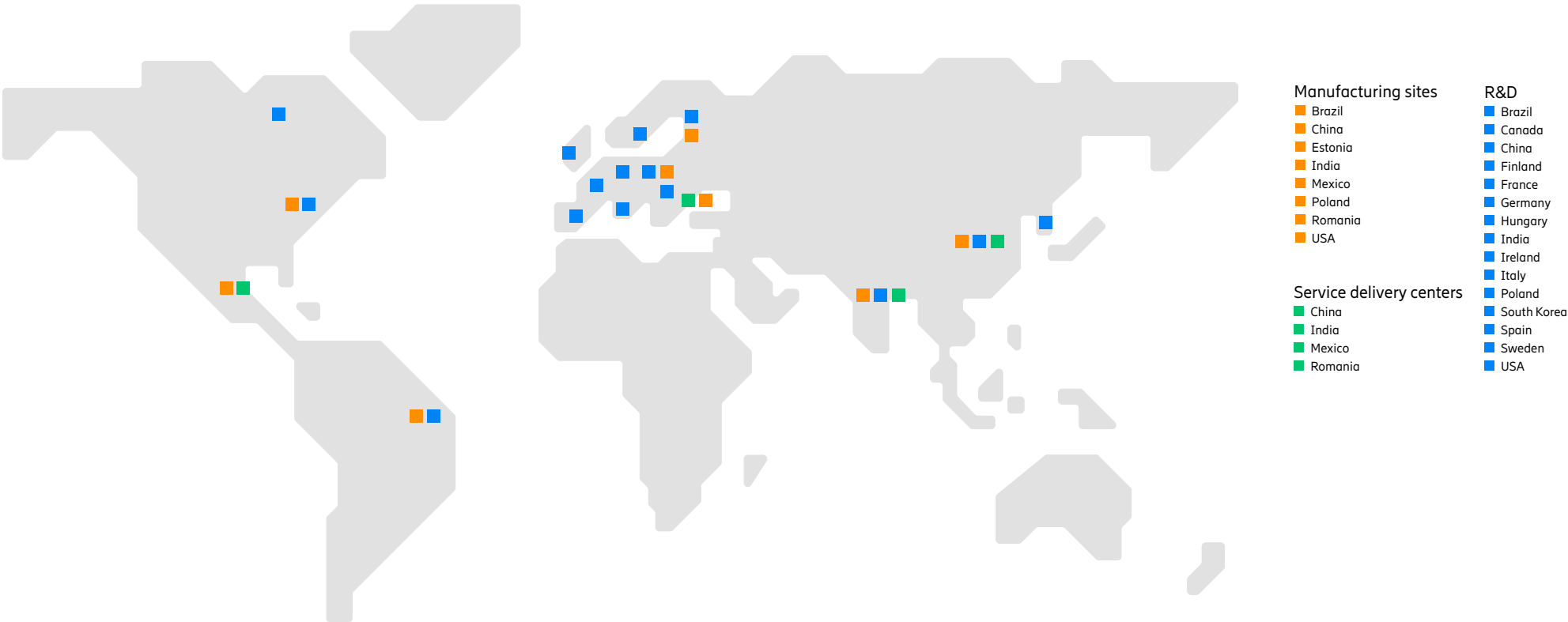
We continuously evolve our supply chain strategy realizing the full potential of

5G-enabled smart factories, to improve speed and productivity, to meet sustainability goals and to increase our capability to quickly respond to customer needs.

Global supply chain disruptions have challenged us and as we define the new normal, our ambition is to always protect our customers by strengthening and diversifying the supply chain ecosystem from component suppliers and manufacturing, to warehousing and distribution. We are building resilience by digitally connecting our manufacturing and supply systems, improving visibility and value chain

collaboration to evolve our ability to predict and mitigate disruptions.

Resilience is fully integrated across Ericsson Supply and enabled by a risk-balanced approach to Production, Supplier base, Logistics and Supply Chain design. We are investing in our global footprint of suppliers and manufacturing sites, to ensure that every product can be produced in more than one factory whenever needed, and to increase the share of dual source vendors.

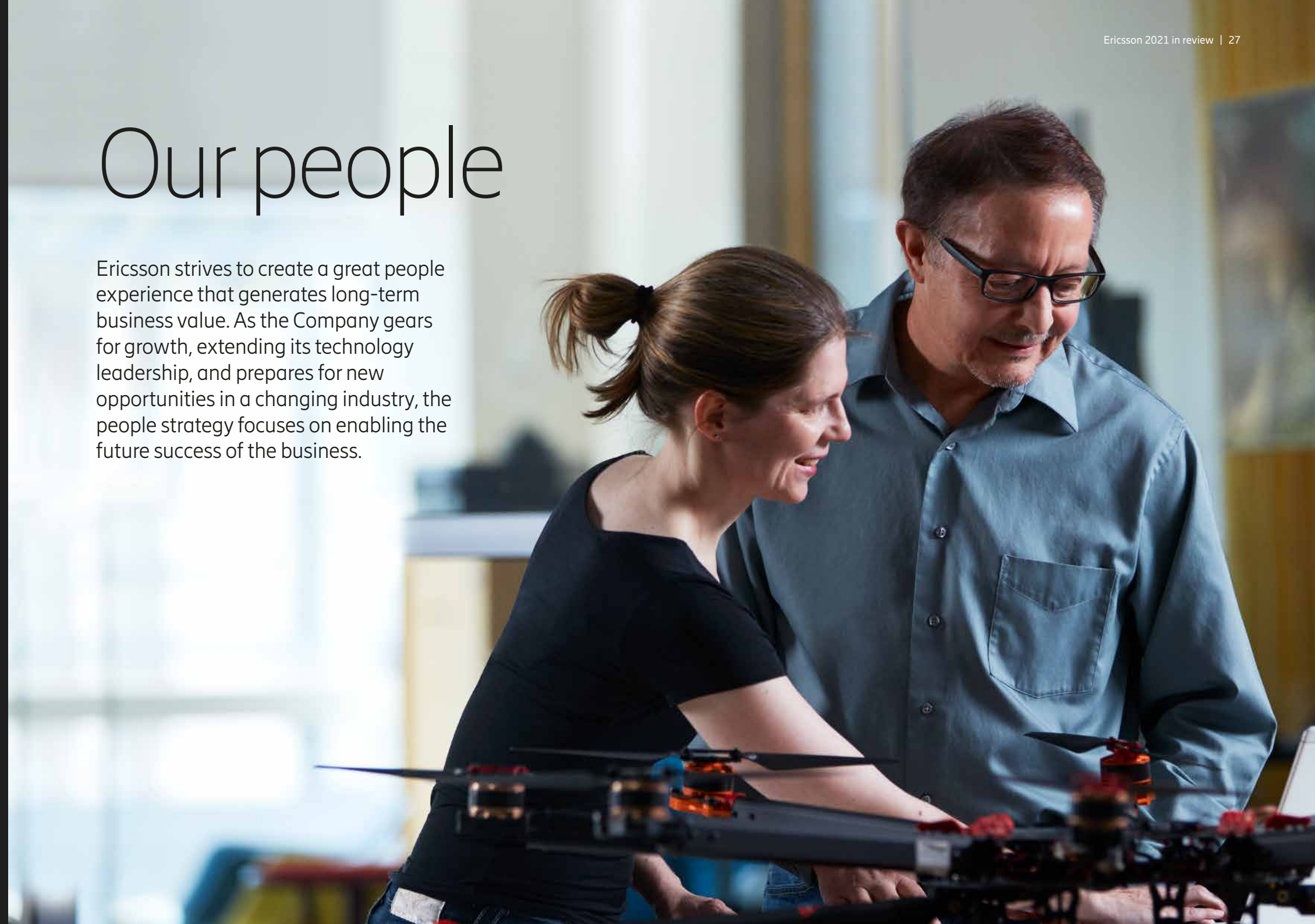




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# Our people

Ericsson strives to create a great people experience that generates long-term business value. As the Company gears for growth, extending its technology leadership, and prepares for new opportunities in a changing industry, the people strategy focuses on enabling the future success of the business.

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# The foundation of our people story

Our people are at the center of all we do at Ericsson. We strive to create a great people experience that supports and enables a positive customer experience and the creation of long-term business value.

Our people experience is shaped through our purpose, vision and values. In 2021 we added integrity to our existing three values of professionalism, respect, and perseverance. This reflects our commitment to ethical, responsible and sustainable practices and our pride in making transparent, honest and uncompromising decisions. Our values are embedded in the business through our ongoing culture transformation program, Ericsson on the Move, which is centered on our five focus areas.

## Our values

Professionalism

Respect

Perseverance

Integrity

As the Company gears for growth, extending our technology leadership in mobile communications, and prepares for new opportunities in a changing industry, our people strategy is focused on enabling the future success of our business. It is based on three strategic people areas: Talent & Skills, Culture & Leadership, and Future of Work.

## Our focus areas

Empathy and humanness

Cooperation and collaboration

Executing speedily

Fact based and courageous decisions

Speak up

## Ericsson People Strategy

### Talent & Skills

Growth requires that we have the talent, capabilities, and critical skills to drive our business strategy into the future. In 2021, we invested in initiatives to enhance the candidate hiring experience, to provide targeted up-skilling and re-skilling, and to strengthen talent retention.

To execute our long-term strategy, the 'vital few' global critical skills have been identified and our people are supported and enabled to design and build their own future by up-skilling and re-skilling in these areas. The critical skills are a mix of technology, including 5G, Internet of Things (IoT), artificial intelligence and sales and commercial acumen as well as power skills such as transformation, design thinking and communications.

For identified critical positions which deliver the highest impact to the business in the areas of technology, commercial enterprise, and customer delivery, we are proactively developing and managing our best talent and ensuring a strong talent pipeline.

In addition, we have made significant technology and operational investments in our recruitment capabilities. Leveraging the latest digital and AI technologies, we have strengthened our ability to find and hire the most critical talent needed to stay at the forefront of technology innovation.



A key driver for greater innovation and performance is our ability to reach and utilize the whole talent pool. To achieve this, we strive to become an inclusive place to work, enabled through a speak-up culture, flexible working conditions, and a growing community of Employee Resource Groups (ERG) to support underrepresented groups. We are also pursuing specific diversity goals: increasing representation of women company-wide (target 30% by 2030), and balancing nationality and age groups. While the COVID-19 pandemic has impacted diversity in the general workforce, we continue to take additional steps, such as working with more diverse candidate slates in recruitment, and partnering with different organizations.



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### Culture & Leadership

In 2021 we continued our company-wide culture transformation journey, and updated the Company Purpose, Vision and Values. Our leaders have been central in this journey to translate our values into actions and drive the adoption of our five focus areas: Empathy and humanness; Cooperation and collaboration; Executing speedily; Fact based and courageous decisions; and Speak up. We invested in executive and leadership development programs to equip our leaders for the next phase of growth and to lead in the new hybrid ways of work.

The 'Ericsson on the Move' culture program has been expanded to include all employees globally, with a focus in 2021 to embed mind-sets, behaviors, and practices in our everyday lives. We use data to make fact-based and courageous decisions, so we can execute speedily. We ensure that we work across units through cooperation and collaboration. We demonstrate empathy and humanness, caring for those around us. We invite diverse opinions and expect everyone to be part of a speak-up environment, and to act with integrity. Our culture has helped us stay a trusted partner to our customers and plays a key role in retaining and attracting talent.

### Future of Work

During 2021 we have done significant work to drive engagement, with a particular focus on preparing for the future of work. While the COVID-19 pandemic continued to create challenging situations for our employees, the measures taken to support more flexible work arrangements have been reflected in the current employee satisfaction survey score of 81% which is 8 points above the technology sector benchmark. A staged return to office has begun in countries where it is safe to do so, and our leaders have been trained in new ways of working and leading that promote



flexibility, well-being, belonging, and performance in the hybrid workplace.

The well-being of our people has been an important focus during 2021. We know that our people are more productive when they feel physically and emotionally well, financially in control and socially connected to their

communities. In 2021 we built on our systematic approach to well-being through our Ericsson Care program, providing easy to access tools and assets such as a mindfulness app and digital tools to support work-life balance. Global webinars have been run throughout the year focused on mental health,

stress management, meditation, and resilience. Through our volunteer program, all employees are offered the opportunity to volunteer in their communities or on global projects which Ericsson supports, such as the "Missing Maps" humanitarian project sponsored by the Red Cross.





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# Segments

Our segment structure is based on our customers' needs and enables us to provide products and services efficiently.

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# Networks

## Customers

Ericsson offers telecom operators a comprehensive portfolio, incrementally evolving operators' long-term opportunities in 5G and beyond, with cost-efficient communications solutions. Networks offers multi-technology capable Radio Access Network (RAN) solutions for all spectrum bands, including integrated high-performing hardware and software. Our offer also includes a cloud-native RAN portfolio, a transport portfolio, passive and active antenna solutions, and a complete service portfolio covering network deployment and support.

For proactive telecom operators mainly addressing the consumer segment, revenues from new services and bundles could see CAGR of 2.7% 2020–2030<sup>1)</sup> For the enterprise segment, 5G offers significant opportunity through new use cases. With sustainability and energy consumption in focus, the segment invests in making products and solutions more energy efficient as well as applying a circular

approach in all we do. Sustainable materials, reuse, refurbishment and recycling, support customers' Net Zero journey and decreases total cost of ownership.

## Market

Networks' largest addressable market is the RAN market, which according to Dell'Oro amounted to around USD 42 billion in 2021. Driven primarily by 5G rollout, the RAN market grew by 12% in 2021 and is expected to grow by 5% in 2022<sup>2)</sup>. Through technology leadership and leveraging the competitive 5G portfolio, Ericsson's market share increased to around 39%, excluding Mainland China, in 2021.

## Strategic priorities

The strategic priorities are to invest in technology leadership, to increase competitiveness for selective market expansion based on technology and cost leadership, and to undertake use case-driven network expansions leveraging network investments.

## Innovation

Our increased R&D investments have accelerated the portfolio development. In 2021 we launched new products and boosted Network services, enabling lower total cost of ownership (TCO), improved energy efficiency, and reduced carbon footprint. This included ultra-light Massive MIMO radios, focusing on mid-band – a key frequency band for operators' 5G buildout in the coming years. We introduced a Cloud RAN portfolio with the vision that our customers can deploy cloud-native networks, virtually everywhere, on any cloud and server platform.

<sup>1)</sup> The ConsumerLab report "Harnessing the 5G consumer potential – The consumer revenue opportunity uncovered".

<sup>2)</sup> Dell'Oro Mobile RAN Quarterly Report February 2022



"Our technology investments resulted in an industry-leading portfolio, strong margins, higher market share outside Mainland China and top performance rankings for our customers."

### Fredrik Jejdling

Executive Vice President, Segment Networks



Net sales

**SEK 167.8 billion**

Reported net sales growth YoY

**1%**

Organic net sales growth YoY

**7%**

Reported EBIT

**SEK 37.3 billion**

EBIT excl.  
restructuring charges

**SEK 37.5 billion**

EBIT margin excl.  
restructuring charges

**22.4%**

Ericsson's market position<sup>3)</sup>

**Top two in Radio  
Access Network  
equipment**

<sup>3)</sup> External reports and Ericsson estimates and analysis.



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# Digital Services

## Customers

Telecom operators want to be more business agile in both the consumer segment and in the more advanced enterprise business emerging with 5G. They want solutions that simplify and automate customer, partner and service management as business and network dependencies are increasingly complex to handle. When addressing the enterprise market, our customers require high performance and programmable networks.

Digital Services provides market-leading software solutions for business support (BSS), operational support (OSS), communication services, core networks and cloud infrastructure to address those needs. Customers chose Digital Services' solutions due to its proven maturity in cloud native technology in combination with our long experience from telecom.

## Market

The 5G network evolution has just started. Many customers, but far from all, have taken the first steps towards 5G. Few have yet transformed the core network to implement 5G

standalone core (5GC) – a technology shift needed in order to deliver what 5G promises.

Some 80% of the 20 largest telecom operators, by revenue, have chosen Ericsson for 5GC – a solid base to build on when the more than 250 remaining existing customers are to make their vendor choices. All of Digital Services' portfolio areas contribute to the 5G business and technology shift and 5GC serves as a beachhead to attach sales from other parts of the portfolio.

Globally, the core networks market is dominated by a handful of vendors. Ericsson is the second largest. Most of the markets for the other parts of the Digital Services portfolio are much more fragmented, where the market leaders are estimated to have 7–15% market share<sup>1)</sup>.

## Strategic priorities

Digital Services prioritizes R&D investments in cloud native 5G Core to maintain and grow its technology leadership to build value for the mid and long term. Focused R&D investments are also made in service orchestration and in

evolving the portfolio to enable customers to address 5G for enterprise opportunities.

The segment is transforming its operations towards increased levels of automation and industrialization, to lower the total cost of ownership (TCO) for its customers and to improve its business mix through increased software and recurring revenue.

## Innovation

Today, mobile networks are mobile broadband optimized. For enterprises to fully make use of secure, reliable, high data volume and low latency 5G services, it must be possible for the network edge to seamlessly meet the enterprise edge with control, to easily tailor the quality-of-service characteristics and to efficiently make use of the network resources through network slicing technology.

Digital Services leverages the latest software development and delivers technology to invest in and provide software solutions to telecom operators.

<sup>1)</sup> External reports and Ericsson estimates and analysis.



“Our investments in cloud native and automation technology result in customer value – proved by our 5G Core business momentum and customers commercially launching 5G standalone networks.”

Jan Karlsson

Senior Vice President, Segment Digital Services



Net sales

**SEK 36.2 billion**

Reported net sales growth YoY

**–3%**

Organic net sales growth YoY

**1%**

Reported EBIT

**SEK –3.6 billion**

EBIT excl.  
restructuring charges

**SEK –3.5 billion**

EBIT margin excl.  
restructuring charges

**–9.6%**

Ericsson's market position<sup>2)</sup>

**#1–2 in Core. #1–3 in  
Communication  
Services. Among top 3  
leaders in OSS and BSS.**

<sup>2)</sup> External reports and Ericsson estimates and analysis.





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# Managed Services

## Customers

New technologies and services, as well as higher end user demands and growing eco-systems have led to increasingly complex networks. Telecom operators therefore demand a transformation partner with global skill, expertise and scale in data-driven operations. Using the AI-driven Ericsson Operations Engine, telecom operators can proactively manage their networks improving network performance, reducing carbon footprint, enhancing end user experience whilst also securing return on investment in their networks, driving efficiency, and paving the way for innovation.

Ericsson is a leader in Managed Services, managing networks for approximately 200 customers, together serving more than one billion subscriptions. Out of these customers, 20 – representing more than 500 million subscriptions – have transformed to the Ericsson Operations Engine in 2021, from 10 in 2020, 11 of which are running live 5G networks. Our evolved portfolio includes Network Design and Optimization, Network Managed Services, Enterprise Services and Cloud and IT Services. Our services and software-based business models address the needs of both in-house and outsourcing telecom operator needs.



Ericsson Operations Engine brings together a complete set of capabilities which ensure that telecom operators can reduce their Total Cost of Ownership and achieve top-class customer experience, by increasing automation levels, enhancing network performance through early anomaly detection and auto-healing, as well as reducing customer complaints. Ericsson's data-driven energy management solutions use advanced data analytics to optimize site energy consumption and support telecom operators in their ambitions to reduce the environmental footprint of their operations.

## Market

The addressable market for Managed Services was USD 34 billion in 2021 and is expected to grow with a 3–5% CAGR between 2021–2023<sup>1)</sup>. The addressable market represents 27% of the telecom operators' total Network, IT, and NDO related operating expenditures. The balance is covered by the telecom operators' in-house activities. Demand for managed services is mainly driven by increased complexity in the customers operating environment due to the continued adoption of 5G and virtualized networks.

## Strategic priorities

The segment's wanted position is to be a leader in AI and data-driven telecom operations and optimization, delivering the best network and services experience in the most cost-effective and sustainable way. This will be achieved through increased R&D investments in AI and automation, including extending our library of AI use cases, and being a data driven organization with employee upskilling programs in new technologies.

## Innovation

We have embedded automation end-to-end in our operations and optimizations, enhanced those capabilities with AI technologies and are now investing in intent-based telecom network operations. We are embracing new AI technologies, such as machine reasoning and reinforcement learning to advance our capabilities in the areas of 5G, cloud, enterprise services and energy management. As we continue to evolve our AI software-based offerings, we are developing new business models to reach a wider customer base.

<sup>1)</sup> External reports and Ericsson estimates and analysis.

“Ericsson Operations Engine is our AI and data-driven offering for operating the more complex networks of tomorrow, combining AI-augmented expertise and data-driven, predictive operations.”

**Peter Laurin**

Senior Vice President, Segment Managed Services



Net sales

**SEK 20.4 billion**

Reported net sales growth YoY

**–10%**

Organic net sales growth YoY

**–6%**

Reported EBIT

**SEK 1.5 billion**

EBIT excl.  
restructuring charges

**SEK 1.6 billion**

EBIT margin excl.  
restructuring charges

**7.8%**

Ericsson's market position<sup>2)</sup>

**Top two in Managed  
Services Operations**

<sup>2)</sup> External reports and Ericsson estimates and analysis.



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# Emerging Business and Other

## Customers

To stay competitive, enterprises need to increase their agility, gather real-time intelligence, and advance operations to achieve higher productivity, quality and safety. We create value for our customers by delivering pre-packaged, scalable wireless solutions and applications, enabling enterprises to drive their digital transformation, operational efficiency and customer experience forward.

As the technology leader in 5G, Ericsson is ideally suited to meet enterprise business needs of secure, reliable and wireless connectivity. Ericsson's Private 5G networks, Cradlepoint Wireless WAN solutions and the IoT Accelerator platform make it possible for enterprises to use technologies like AR/VR at scale to process large sets of data, support autonomous operations in factories and at logistical sites, and use real time analytics to manage drones and other moving objects.

Our solutions help enterprises optimize their operations and increase efficiency, which is crucial in creating profitable and sustainable businesses.

## Market

Ericsson addresses enterprise segments with a growth rate of 20–30% CAGR, with an increasing need for wireless, reliable and secure connectivity and where there are opportunities for platform economics. The total addressable market in Enterprise for Ericsson is worth an estimated USD 15–25 billion by 2025 <sup>1)</sup>.

## Strategic priorities

Ericsson's strategy is to drive 5G connectivity adoption in the enterprise market together with telecom operators and other partners. The segment's priority is to create pre-packaged products that are easy to deploy, use, manage and scale, while meeting enterprise needs for global, local and edge connectivity.

Emerging Business and Other focuses on:

- Driving adoption and scale of pre-packaged solutions in the enterprise market.
- Exploring, validating and accelerating new enterprise offerings that add value to the existing portfolio.

- Creating new value streams for our customers, improving the gross margin of our business portfolio and increasing return to shareholders.

## Innovation

Ericsson delivers solutions that make it easy for enterprises to take advantage of the many benefits of cellular connectivity, ensuring a more agile, reliable and secure business.

In 2021, we launched Ericsson Private 5G, IoT Accelerator Cloud Connect and Wireless Office, executing our strategy to move into pre-packaged connectivity offerings for enterprises.

We will continue to invest in our pre-packaged portfolio as well as adjacent value-added services, and to explore new solutions in the SMB market, leveraging the built-in capability of the 5G innovation platform.

<sup>1)</sup> External reports and Ericsson estimates and analysis.



“Technologies such as 5G and IoT in combination with cloud and AI are going to be revolutionary – especially for enterprises. Our role is to drive new growth through investments in value-creating businesses targeting enterprises, such as Cradlepoint, Dedicated Networks and our IoT Accelerator platform.”

Åsa Tamsons

Senior Vice President, Segment Emerging Business and Other



Net sales

**SEK 7.9 billion**

Reported net sales growth YoY

**22%**

Organic net sales growth YoY

**11%**

Reported EBIT (loss)

**SEK –3.4 billion**

EBIT (loss) excl.  
restructuring charges

**SEK –3.3 billion**

Emerging Business and Other consists of Emerging Business, including IoT and iconectiv, and Media businesses, including Red Bee Media and a 49% ownership in MediaKind.





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# Market areas

Our global skill and presence allow us to develop close relationships with our customers across the world.





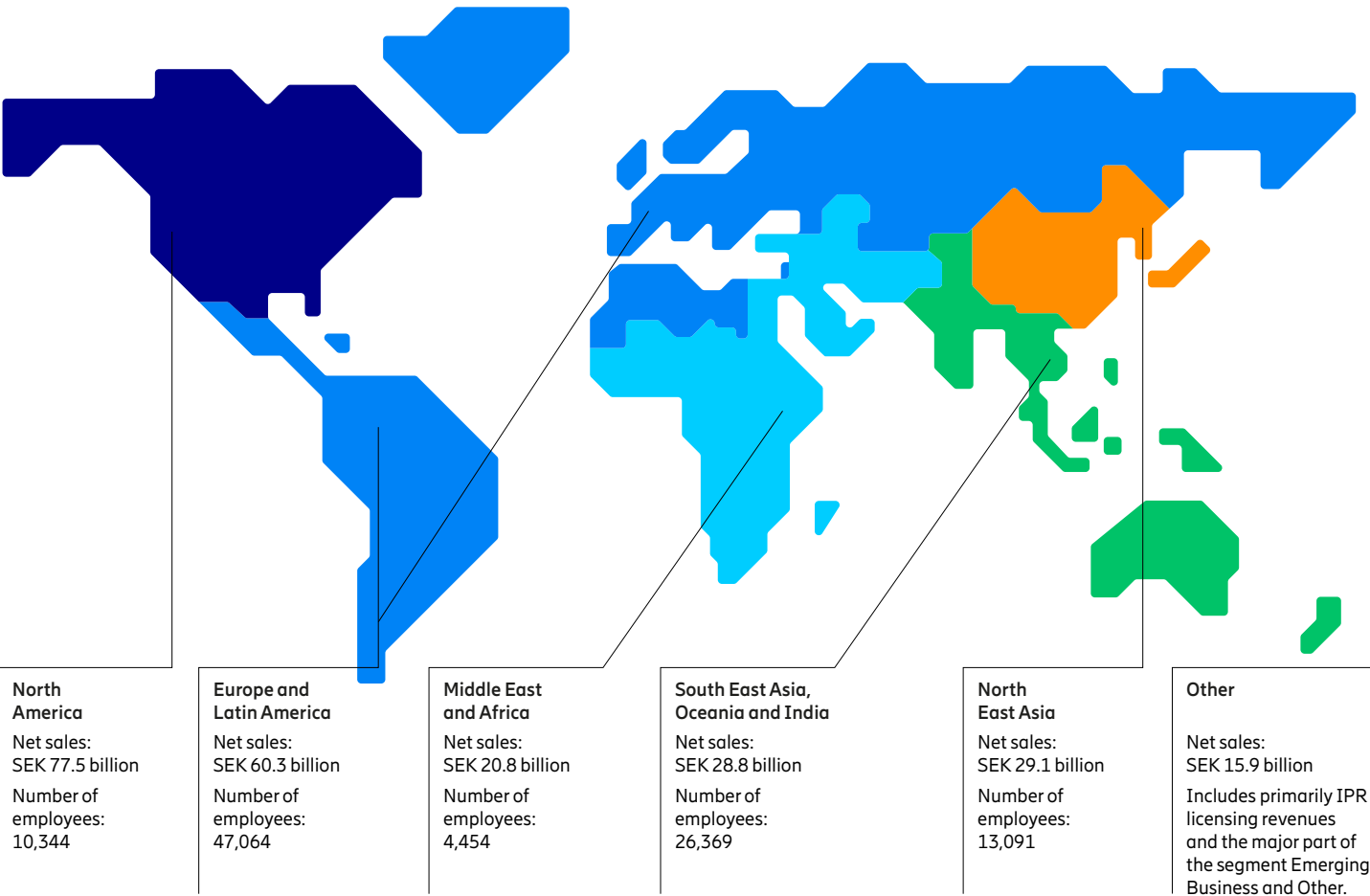


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# Our geographical structure

Our geographical structure comprises five market areas, to provide clear customer interfaces and fast time-to-market. The market areas are responsible for selling and delivering the competitive solutions that our business segments develop.





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# North America

## Customers

5G network buildouts accelerated in the U.S. and Canada in 2021, supported by Ericsson's industry-leading portfolio. The Company announced five-year 5G contracts with all three Tier 1 U.S. telecom operators, further strengthening its position in the market. These contracts are the three largest signed in Ericsson's history. Ericsson is also supporting regional customers in the U.S. and Canada through network rollouts and upgrades, including bridging the digital divide through network modernization across a large footprint covering the heart of the U.S. with Viaero Wireless and with Canada's largest rural-focused provider Xplornet Communications.

## Geographic characteristics

In 2021, there were 400 million mobile subscriptions, 74 million of which were 5G<sup>1)</sup>. That number is expected to grow to 410 million by 2027. 5G technology is expected to add USD

1.5 trillion in incremental GDP by 2030 and create 4.5 million new jobs<sup>2)</sup> across the U.S. Ericsson leads the market in RAN, with a 54%<sup>3)</sup> market share – 59% for 5G<sup>4)</sup> – and Mobile Core with a 42% share<sup>5)</sup> (on an annualized basis/for 2021).

## Market development

5G momentum continues, with the focus shifting to deploying mid-band spectrum to complement the nationwide low-band footprints. These bands will support the more demanding 5G use cases, such as gaming, sports and entertainment, as well as fixed wireless access. There is also growing momentum for private cellular networks for enterprises.

Ericsson's USA 5G Smart Factory was recognized by the World Economic Forum as a "Global Lighthouse" for its pioneering Industry 4.0 use cases and sustainability systems. The factory also achieved LEED Gold Certification.

## Strategic priorities

Ericsson is focused on supporting North American customers' aggressive 5G buildouts and maximizing their return of investment, while also identifying new business opportunities addressing the needs of telecom operators and the enterprise sector. So far, Ericsson has engaged in more than 200 5G proofs of concept with our lead customers.

<sup>1)</sup> Ericsson Mobility Visualizer, November 2021.

<sup>2)</sup> CTIA – The 5G Economy.

<sup>3)</sup> Dell'Oro Mobile RAN Q4 2021 Market Share Report.

<sup>4)</sup> Dell'Oro Mobile RAN Q4 2021 Market Share Report.

<sup>5)</sup> Dell'Oro Mobile Core Network Quarterly Report 4Q21.



"We are partnering with our customers to accelerate their 5G network deployments while doubling down on our efforts to activate the broader ecosystem of partners to intensify the services' innovation, laying the foundation for unprecedented, sustainable, and continuously high growth."

**Niklas Heuvelodop**

Executive Vice President, Market Area North America



Net sales

**SEK 77.5 billion**

Reported net sales growth YoY

**5%**

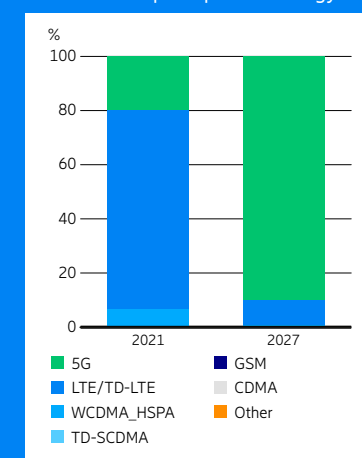
Organic net sales growth YoY

**12%**

Major customers

AT&T, Bell Canada, Rogers, TELUS, T-Mobile, UScellular and Verizon.

Mobile subscription per technology





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# Europe and Latin America

## Customers

In Europe, 2021 saw new and existing customers partner with Ericsson to accelerate their deployment of 5G networks. Notably, the Company won significant Core contracts, deepening its relationship with customers.

In Latin America, customers laid the groundwork for their first 5G deployments. Ericsson won multiple contracts for network modernization, expanding and enhancing 4G networks and helping to connect people in rural, disconnected areas.

Ericsson won several contracts in 2021 while also making significant progress in deploying private and enterprise networks across a range of industries, moving from test cases to fuller deployments.

## Geographic characteristics

The market area covers more than 100 countries and over 800 customers. In 2021 there were 1.7 billion mobile subscriptions across the market area, with 4G still dominant, making up 68% of mobile subscriptions. 4G is expected to decrease to 38% of mobile subscriptions by 2027.

However, 5G is growing. By the end of 2021, 41 million 5G subscriptions were registered and expected to grow to 970 million by 2027, which by then will account for 54% of all mobile subscriptions in the market area. In Western Europe, 5G is expected to represent 83% of mobile subscriptions by 2027, while the share in Latin America is estimated to be 43%<sup>1)</sup>.

## Market development

5G deployment and uptake has been slower in Europe than in other regions and addressing this is an increasing priority. Policymakers recognize 5G's potential role in a green economic recovery, with the technology expected to deliver around EUR 250 billion in benefits for the region by enabling cross sector digital transformation.<sup>2)</sup> The EU has encouraged the urgent release of spectrum and made some EUR 150 billion available to local Governments to aid their digital transition.

In Latin America, initial 5G spectrum auctions are just taking place. Positively, these auctions have prioritized investment over revenue maximization, with the auctions in

Brazil being particularly encouraging. Digitalization is projected to develop Latin America into a market worth more than USD 21 billion annually and 5G will be a key factor in driving that value.

## Strategic priorities

Ericsson's priority is to gain 5G market share in both Europe and Latin America. The Company will achieve this by excelling in its delivery to customers. The Company will also continue to pursue growth opportunities in the emerging enterprise 5G market, building on its early successes in key industries with major brands in manufacturing, automotive, energy and agriculture. Ericsson will continue to raise the bar on talent and digital inclusion and being the most responsible business partner for our customers.

<sup>1)</sup> Ericsson Mobility Report November 2021.

<sup>2)</sup> Analysys Mason, Qualcomm and Ericsson, 'Analysis of the costs and benefits of 5G geographical roll-out in Europe: final report'.



"We've seen good progress in Europe and Latin America, gaining 5G market share across both Core and RAN. Our team has done a superb job delivering on our strategy in a difficult year for both our customers and our people."

**Arun Bansal**

Executive Vice President, Market Area Europe and Latin America



Net sales

**SEK 60.3 billion**

Reported net sales growth YoY

**8%**

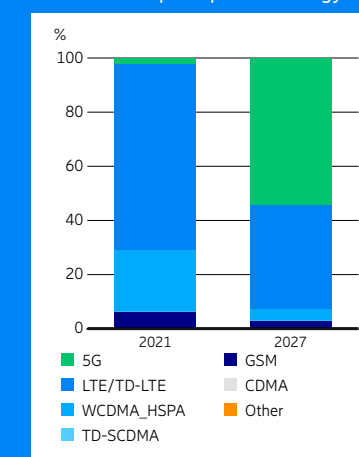
Organic net sales growth YoY

**12%**

Major customers

America Movil, Bouygues, BT and Hutch, Deutsche Telecom, Entel, MasMovil, MTS, Orange, Swisscom, Telecom Italia, Telefonica, Telia, TDC, Vodafone.

Mobile subscription per technology







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# Middle East and Africa

## Customers

Our customers are accelerating their network transformation, aiming for more coverage, capacity and speed to increase 4G adoption, while at the same time, increasing their investments in 5G, IoT and digitization. During 2021, Ericsson secured multiple customer wins, expanding existing and gaining new market position with multiple customers in RAN, Core and Mobile Financial Services.

## Geographic characteristics

The Middle East and Africa is dominated by 70 emerging economies, close to 1.6 billion mobile subscriptions and a young and growing population. In 2021, the changing macroeconomic and challenging geopolitical environment has delayed and impacted investment levels in some markets across the market area. By 2027<sup>1)</sup>, 5G is expected to represent 25% of mobile subscriptions in the Middle East and

North Africa and mobile data traffic is estimated to grow CAGR 35% 2021–2027 in Sub-Saharan Africa. In 2021, 4G accounted for 20% of mobile subscriptions in Sub-Sahara.

## Market development

The Middle East and Africa has during 2021 faced and continues to face an extraordinary demand for advanced connectivity, presenting high growth potential. In the market area, digitalization ranks highest in terms of national priorities and is seen as the means to transform economies and societies. The market area has a unique opportunity in a market that combines the need for both access to technology, with strong 5G adoption in the Middle East and some parts of Africa and promising acceleration of 4G network expansions in Africa. The telecom operators aim to realize the 5G opportunity in connecting industries and enterprises, while also focusing on reduc-

ing their operating expenses and driving investments in automation and tools. The pandemic has accelerated the use of mobile financial services and Ericsson's Mobile Financial Solutions continued to support the aim to accelerate financial inclusion.

## Strategic priorities

The market area has a strong focus on attracting and retaining the best talent while focusing on value-based offerings to sustain our technology leadership and competitive advantage. The market area has launched several initiatives to adapt to market realities, with the aim to strengthen customer relationships, secure networks business, position digital services and leverage Ericsson's strong product and services portfolio.

<sup>1)</sup> Ericsson Mobility Report November 2021.



"Despite macroeconomic challenges, we secured successful 5G deployments, gained new footprint in Africa, and accelerated digital transformation, creating value for our customers."

**Fadi Pharaon**

Senior Vice President, Market Area Middle East and Africa



Net sales

**SEK 20.8 billion**

Reported net sales growth YoY

**-11%**

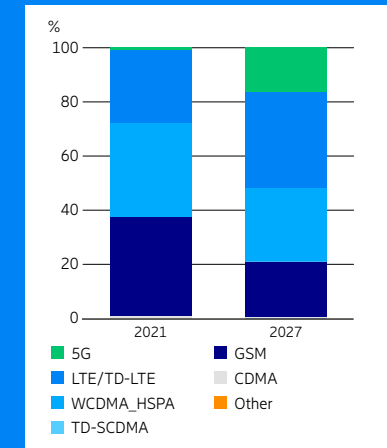
Organic net sales growth YoY

**-7%**

Major customers

Airtel, Etisalat, Jazz, Mobily, MTN, Ooredoo, Orange, etc, Turkcell, Vodafone, Zain.

Mobile subscription per technology





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# South East Asia, Oceania and India

## Customers

Telecom operators in the market area are focused on efficiency, enhancing customer experience and growing new revenues. This has created strong demand for Ericsson's leading 4G and 5G solutions to cater to increasing network traffic and to be faster to market with innovative services. In 2021, we increased our market share across several markets, including India, supported 6 customers to launch 5G, and secured key wins across the breadth of Ericsson's portfolio. Ericsson is the leading provider of Managed Services in the market area, the supplier in more than 50% of all 5G Core contracts and powers 5G networks in 7 of the 9 countries that have commercially launched 5G.

## Geographic characteristics

Market Area South East Asia, Oceania and India comprises more than 30 countries, from advanced markets, such as Australia, to developing, high-growth markets, such as India, where there is a young, growing ICT savvy population. Mobile subscriptions in South East Asia & Oceania have exceeded 1.1 billion<sup>1)</sup> and by the end of 2021 there were close to

15 million 5G subscriptions. 5G is expected to show strong growth over the next few years, reaching an estimated 560 million in 2027. In India, 4G dominates, representing 68% of mobile subscriptions in 2021. With the migration to 5G, the share will decrease. 5G is expected to represent 39% of mobile subscriptions, out of an estimated total of 1.2 million subscriptions, in 2027.

## Market development

Nine countries in the market area have now commercially launched 5G. In Australia, operators testing with millimeter-wave (mmWave) frequencies have achieved 5G broadband speeds beyond 5Gbps. In Singapore, 5G standalone (SA) has been launched, opening up possibilities for new 5G use cases. In Malaysia, 5G was launched in 2021 following the assignment of 5G spectrum to a government-owned special purpose vehicle, which enables service providers to tap into the network via wholesale agreements to offer 5G services. In India, telecom operators conducted 5G trials in 2021 including Fixed Wireless Access trials in rural areas, and 5G spectrum is expected to be auctioned by mid-2022.

During the year, COVID-19 especially impacted India and South East Asia. In some cases COVID headwinds have led to a slowdown in investments in South East Asia. However, many governments are looking to digitalization as a means of post-COVID economic recovery.

## Strategic priorities

The strategic priorities for the market area are to secure our technology leadership in 4G and 5G and accelerate digitalization and automation to enable our customers to deliver superior end-user experience and efficient, high-performing networks. We are also focused on building future ready talent, to equip ourselves with the best people, business and technical skills to secure market leadership for both Ericsson and our customers.

<sup>1)</sup> Ericsson Mobility Report November 2021.



"In 2021 we continued to gain market share and partner with our customers to deploy 5G, setting a strong foundation for the years ahead."

Nunzio Mirtillo

Senior Vice President, Market Area South East Asia, Oceania and India



Net sales

**SEK 28.8 billion**

Reported net sales growth YoY

**-4%**

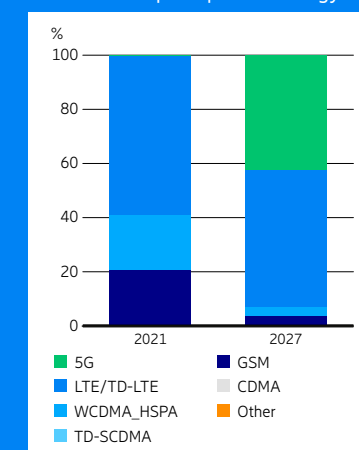
Organic net sales growth YoY

**-1%**

Major customers

Axiata Group, Bharti Airtel, Digital Nasional Berhad, Indosat Ooredoo, NBN Co, Singtel Group, Smart Communications, Telenor Group, Telstra, True, Viettel and Vodafone Idea.

Mobile subscription per technology





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## North East Asia

### Customers

North East Asia's enormous investments in 5G infrastructure, number of 5G users, and advances in cutting-edge 5G technologies reflect how the region has prioritized 5G as a pillar of economic and societal development. Dense and extensive networks have been deployed across the region and Ericsson has supplied products across all deployed frequencies. We also launched the first 5G Core network in Japan, the first 5G Multi-operator Core Network in Taiwan, and deployed a 5G Core network in Hong Kong (launching in 2022). In all of North East Asia, 5G is seen as a critical part of the fabric that will connect people, industries and enterprises in the future.

### Geographic characteristics

The governments are the major drivers of 5G development, with North East Asia having by far the largest number of installed base stations. The region also had around half a billion

5G subscriptions, with further growth predicted to reach 1.4 billion subscriptions by 2026.<sup>1)</sup> Midband spectrum has been used initially in all markets to achieve population coverage targets, with denser networks being built in major cities. Further densification of mid-band networks and the introduction of high-band spectrum in the coming years will ensure that 5G will be the predominant technology in the region.

### Market development

While North East Asia is an advanced market for 5G, network deployment and build-out is ongoing and remains a priority. More live 5G Core networks will be launched in 2022, with our customer unit Korea deploying 5G Core networks for two of the market's three operators. The evolution to stand-alone 5G (5G SA) enables the advanced features of 5G to be used in industrial applications. As a consequence, network slicing is an emerging area

with great potential and the introduction of mmWave, AI, machine learning and automation will enable our customers to capture the enterprise market with state of the art, efficient and sustainable 5G networks.

### Strategic priorities

We will remain focused on our core business of delivering leading technology for our customers, supporting their expansion into new markets and helping them monetize their networks. Modernization of Core networks, cloud-native environments, energy-efficient radio equipment, automation, machine learning and AI in network functions will help drive our customers' ambitions while reducing power consumption and costs. This will also reduce the industry's impact on the environment.

<sup>1)</sup> Ericsson Mobility Report November 2021.



"5G is seen as 'critical infrastructure' in North East Asia, dense and extensive networks are being rolled out across the region to connect consumers and industry. Ericsson's innovation and technology leadership will help customers monetize 5G."

**Chris Houghton**

Senior Vice President, Market Area North East Asia



Net sales

**SEK 29.1 billion**

Reported net sales growth YoY

**-13%**

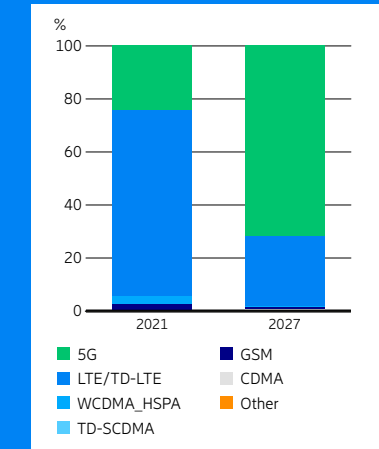
Organic net sales growth YoY

**-8%**

Major customers

Asia Pacific Telecom, China Mobile, China Telecom, China Unicom, Chunghwa Telecom, NTT Docomo, Far EasTone, KDDI, KT, LGU+, SKT, SmarTone and SoftBank.

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## 2G

Second generation mobile system (the first digital generation). Includes GSM, TDMA, PDC and cdmaOne.

## 3G

Third generation mobile system. Includes WCDMA/HSPA, CDMA2000 and TD-SCDMA.

## 4G

Fourth generation mobile system, also known as LTE.

## 5G

Fifth generation mobile system. An evolution of 4G/LTE.

## AI

Artificial Intelligence. The ability of a machine to perform tasks commonly associated with intelligent beings.

## AR

Augmented Reality. An interactive experience of a real-world environment whereby the objects that reside in the real world are augmented by computer generated information.

## BSS

Business Support Systems, the IT-systems that a telecom operator uses to run its business operations towards customers. Together with operations support systems (OSS), they are used to support various services for both business processes and the network end-to-end.

## CDMA

Code Division Multiple Access. A radio technology on which the cdmaOne (2G) and CDMA2000 (3G) mobile communication standards are both based.

## Cloud

When data and applications reside in accessible data centers.

## CO<sub>2</sub>e

The amount of a particular greenhouse gas, expressed as the amount of carbon dioxide that gives the same greenhouse effect.

## Core network

The mobile network's core part, which offers numerous services to the end users who are interconnected by the access network. Its key function is to direct voice calls and route data traffic.

## COVID-19

The disease caused by the coronavirus (SARS-CoV 2).

## COVID-19 pandemic

The global spread of the disease caused by the coronavirus (SARS-CoV 2).

## EBIT

Earnings (loss) before interest and taxes.

## EBIT margin

Earnings (loss) before interest and taxes, as a percentage of net sales.

## EBITA margin

Earnings (loss) before interest, taxes, amortization and write-downs of acquired intangible assets as a percentage of net sales.

## Free cash flow

Cash flow from operating activities less net capital expenditures, other investments and repayment of lease liabilities.

## GSM

Global System for Mobile Communications. Second generation mobile system.

## ICT

Information and Communication Technology.

## IoT

Internet of things, interconnection of computing things enabling them to send and receive data.

## IP

Internet Protocol. Defines how information travels between network elements across the internet.

## IPR

Intellectual Property Rights, or specifically patents.

## LTE

Long-Term Evolution. 4G; the evolutionary step of mobile technology beyond 3G HSPA, allowing a data rate above 100 Mbps.

## Managed services

Management of operator networks and/or hosting of their services.

## Managed services – base pack

Traditional scope offerings that cover customer core operational requirements within end-to-end network or IT operations.

## Managed services – value pack

New scope offerings that generate value to the customer, beyond our traditional scope offerings.

## Mobile broadband

Wireless high-speed internet access using the HSPA, LTE, CDMA2000EV-DO and 5G technologies.

## (Network) Orchestration

Simplifies how networking resources are managed, helping you deploy virtualized networks through self-service tools and centralized management.

## OSS

Operations Support Systems, IT-systems used by service providers to manage their networks. They support management functions such as network inventory, service provisioning, network configuration and fault management.

## RAN

Radio Access Network, consists of a large number of radio base stations that handsets and devices can connect to.

## Standard Essential Patents

Patents that are necessary to use in any device connecting to a mobile network. You cannot build a device that connects to mobile networks without using Standard Essential Patents.

## VR

Virtual reality. The use of computer modelling and simulation that enables a person to interact with an artificial three-dimensional (3-D) visual or other sensory environment.

## WCDMA

Wideband Code Division Multiple Access, third generation mobile networks.

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