Technology for Good

Impact Report

September 2019

Empowering an intelligent, sustainable and connected world

Sustainability approach
At Ericsson, sustainability and corporate responsibility are integrated into our business and our commitment to responsible environmental performance and social and economic development. Conducting business responsibly is fundamental to our company's strategy and culture, with these priorities embedded across our company. Sustainability and corporate responsibility are the cornerstones of building a company for the future which creates lasting value and which works with two main aims – to create positive impacts and reduce risks.
We continuously strive to manage our business impact on society and the environment through a holistic approach. We analyze our impact across the value chain for all identified sustainability and corporate responsibility-related issues. This report focuses on the positive impact of our sustainability initiatives on society.

For a full overview of our sustainability performance and targets across the entire value chain, please see the Ericsson Annual Report 2018 (Sustainability and Corporate Responsibility Report, pages 165–191).

Sustainability research
A pivotal aspect to our approach is basing our sustainability strategies on science. For this reason, we carry out peer-reviewed research on the sustainability effects of ICT and have been doing so for many years.

Our research team provides facts, figures and insights on ICT's environmental impact, as well as on its ability to reduce climate impact by lowering greenhouse gases in other sectors. Methodology development for measuring the impact of ICT as a sector, as well as for specific cases or at city level, has been an important task for years. Many of these methodologies have made significant contributions to international assessment standards. Furthermore, we carry out research on ICT's impact on macroeconomic aspects like Gross Domestic Product and productivity, which are published together with external universities.

About this report
This Technology for Good Impact Report focuses on the positive effects created by Ericsson and our customers and partners in society. We highlight cases where our technology and expertise are helping to solve global challenges, across broad themes of climate change and reducing inequalities.

To learn more and read the full set of cases from around the world, please visit our website.

Pioneering sustainability leadership

On the journey towards 2030, we hope and expect to see further significant progress in sustainability approaches around the world. Through our focus on combining technology and partnership, we are proud to be helping to achieve the Global Goals, which have the potential to end poverty, fight inequality and stop climate change.

								Joined Global Network Initiative (GNI)	
First environmental report published		Establishment of Ericsson Response			Co-founded Connect to Learn			Signed the "Business Ambition for 1.5°C" UN Global Compact pledge	
			Ericsson Global Product Take-Back Program launched			Formalized our commitment to UN Guiding Principles on Business and Human Rights	Climate targets approved by Science Based Target Initiative		
1993	**1997**	**2000**	**2005**	**2007**	**2010**	**2012**	**2015**	**2017**	**2018**	**2019**
		Support formation of UN Global Compact							Contributed to the Exponential Climate Action Roadmap Report
	First Group Goal to save energy at every step of our operations			First ICT for development initiative to support the Millennium Development Goals (MDGs) and the Millennium Villages Project			Adoption of the SDGs as the framework for measuring company impact on society		

Foreword

Leading positive and responsible change

We have a long history of helping to create sustainable change; for more than a century, our technologies have transformed every sector of society. We remain committed to leading this journey and are convinced that digitalization and mobile broadband networks can help tackle a range of global challenges. Building on the core belief of our founder, Lars Magnus Ericsson, of making communication available for all, we have been the driving force behind some of the most powerful and inclusive technologies known to mankind.

Our industry is one of the few that touches almost everyone, everywhere on a daily basis. According to the Ericsson Mobility Report, at the current trajectory, mobile broadband will provide network coverage to around 92 percent of the world's population by 2024. We hold more than 49,000 granted patents for inventions that have transformed lives, industries and society as a whole, and work with relevant stakeholders, such as customers, partners and governments, to ensure that the rollout of mobile broadband reaches even the most remote parts of the world.

According to the World Economic Forum, the Fourth Industrial Revolution represents a fundamental change in the way we will live, work and relate in society. It presents an opportunity to harness technologies like 5G, the Internet of Things and artificial intelligence in order to create an inclusive future. Ericsson plays a driving role in this new chapter of development.

Since the Sustainable Development Goals were conceived in 2015, we've understood the important role the private sector has to play in achieving them and have led our industry in understanding that mobile broadband is a key enabler to achieving all 17 Sustainable Development Goals. As a company, we are focused on delivering technology and cultivating ecosystems and partnerships to create positive impact in society.

Our technology is developed and deployed with the intent to create lasting positive change, whether through commercial or demonstration projects. To make it easy to adopt, use and scale these solutions, we aim to demonstrate their long-term benefits and be a trusted partner committed to building a better future for all stakeholders. While this may be a new approach for some companies, we have always believed this method is the best way to create long-term and shared value.

Our nearly 100,000 employees play a vital role in achieving our goals and contribute to our company purpose. To ensure engagement with our initiatives, we provide training to all employees to raise awareness and competence in the area of sustainability and corporate responsibility.

We know that many of the issues we deal with attract different points of view, and there is always more than one side to the story. We believe that open and transparent engagement with all our stakeholders strengthens our ideas and creates solutions that work for the majority, rather than the minority.

We hope this report provides you with an insightful overview of our progress so far, and inspires even more ideas for positive impact.

Heather Johnson
Vice President of Sustainability and Corporate Responsibility, Ericsson

> "Our purpose is to empower an intelligent, sustainable and connected world. For more than a century, we have been putting smart tools in the hands of people in every sector of our society, creating intelligent technologies that drive positive change. We remain committed to this effort, leaving no one behind."

Börje Ekholm
President and CEO, Ericsson

Addressing the Sustainable Development Goals

In 2015, the United Nations agreed the Sustainable Development Goals for a better world by 2030, to fight poverty, inequality and climate change.

It is part of Ericsson's sustainability and corporate responsibility strategy to actively contribute to the Sustainable Development Goals (SDGs), also known as the Global Goals. Our research, carried out with Columbia University, has shown that Information and Communications Technology (ICT) has the potential to positively impact all 17 goals. We place strategic importance in meeting SDG 9 (Industry, innovation and infrastructure) and SDG 17 (Partnerships for the goals) and believe that their combined power helps to generate a unique approach and greater impact.

Guided by the goals, it is now up to all of us — governments, businesses, civil society and the general public — to work together to build a better future for everyone.

Technology leadership with purpose
SDG 9, and more specifically its Target 9.1 — to develop sustainable, resilient and inclusive infrastructure — is most closely linked to our portfolio and how our innovative solutions positively impact people, industry and society. Delivering on SDG 9 is directly linked to our business strategy to provide ICT infrastructure, with an emphasis on mobile broadband as an enabler of internet access for all. We measure progress annually based on the rollout of mobile broadband networks.

Partnerships for progress
SDG 17 and its Target 17.16 — to enhance the global partnership for sustainable development — focuses on multi-stakeholder partnerships that mobilize and share knowledge, expertise, technology and resources. We are convinced that our success is dependent on the ecosystems and partnerships we join and drive. Since the beginning, we have put time and effort into collaborating with others to set the open standards that make global communications possible.

Climate action

ICT has the unique potential of enabling other industrial sectors to move towards a low-carbon economy, as well as contributing to global climate targets.

Our circular economy approach builds on over 20 years of life-cycle assessments, therefore we understand the connection between energy consumption and climate impacts. We work systematically to address the energy performance of our customers' entire network. With the capability to understand our own footprint as well as the impact throughout the value chain, we were early to join the Science Based Targets initiative, and were one of the first few companies aiming for a 1.5 degree scenario — a pledge to do our part to hold global warming below 1.5 degrees.

We are an active participant in the Exponential Climate Action Roadmap initiative, launched in 2018. The Roadmap Report's findings show the potential for all sectors of the global economy to halve greenhouse gases by 2030. We believe this is now technologically feasible and economically attractive and critically important.

According to the Exponential Climate Action Roadmap Report, there are six key sectors for reducing global emissions. Within this report we explore three of these sectors — transport, industry, and agriculture and forestry — and their game-changing potential for making progress towards reducing environmental impact.

This selection of case studies highlights some of the results thus far.

"The gap between science and understanding in society has essentially closed. Now we need to close the gap between understanding and acting. Now is not the time for incremental improvements — we need rapid scaling and exponential climate action."

Prof. Johan Rockström
Director, Potsdam Institute for Climate Impact Research (PIK), Germany

Source: https://www.weforum.org/agenda/2019/01/why-digitalization-is-the-key-to-exponential-climate-action/

Reducing transport emissions

With carbon emissions at dangerously high levels, electric and automated vehicles made possible by 5G technology provide a sustainable alternative.

According to the Exponential Climate Action Roadmap Report,[1] transport-related emissions represent 21 percent of the global total (11Gt CO_2e per year). Einride estimates the CO_2 reduction potential per pallet of freight when transitioning from diesel to electricity to be 90 percent for countries with a low-carbon electricity mix, like Sweden.[2] It will also reduce emissions of harmful nitrogen oxides and ultra-fine soot particles. Driverless commercial vehicles also lead to less downtime, increased road safety, higher reliability and better overall cost-effectiveness, as well as enabling reduced congestion.

Ericsson teamed up with Einride, Telia and DB Schenker in Sweden to co-create a safer, more sustainable transport ecosystem using 5G. A key enabler of sustainable transport, 5G provides the connectivity and reliability needed to safely introduce all-electric, autonomous trucks onto public roads.

The Ericsson Radio System and Cloud Core for 5G provide high-performance connectivity to Einride's T-pod — a driverless vehicle operating continuously at DB Schenker's logistics facilities in Jönköping, Sweden. The T-pod and autonomous transport system could potentially replace more than 60 percent of today's transport with a sustainable, affordable alternative.

Sustainable transportation
Test sites in Sweden are demonstrating how self-driving electric buses can help reduce emissions using the cloud and our Connected Vehicle solution. Automated bus routes and traffic management solutions show how electric, automated and connected solutions can transform the transport of people and goods as well as playing a vital role in climate action.

[1] See page 52 of the Exponential Climate Action Roadmap Report
[2] weforum.org/agenda/2019/01/why-digitalization-is-the-key-to-exponential-climate-action

Sustainable ports of the future

Italy's Livorno Port is leading 5G innovation
and sustainability efforts towards the SDGs.

Ports are vital gateways, linking transport corridors to support the exchange of goods in internal markets and to the rest of the world.

Ports are challenged to boost efficiency and productivity in logistics' operations so they can continue to play a critical role in regional and global transportations, while securing sustainable growth in the territory and a safer workplace, as well as minimizing environmental footprint.

Together with Telecom Italia Group (TIM) and National Inter-University Consortium for Telecommunications (CNIT), we are contributing with 5G networks and IoT to optimize logistic loading/unloading operations by minimizing downtime for traveling ships and transit time of goods. At the same time, this secures workplace safety and reduces pollution — a CO_2e saving of 8.2 percent is expected (as part of COREALIS, the pan-European Horizon 2020 "Port of the Future" project).

The UN Sustainable Development Solutions Network (SDSN) mobilizes global scientific and technological expertise to promote practical problem solving for sustainable development. Our "Logistics of the future in sustainable smart ports" case has been selected among 10 other cases as a good example of how Ericsson, together with our partners, is implementing local initiatives that are advancing the SDGs.

"5G technology and digital transformation are critical to innovate logistics' operations in the port towards sustainable growth and to contribute to the Sustainable Development Goals 2030. That's why the Authority Port of Livorno is empowered to partner for the goals with Ericsson, TIM and CNIT and to validate on field the expected benefits for people, environment and growth."

Antonella Querci
Director of Development,
European Programs and
Innovation Department of
Authority Port of Livorno

Scaling solar solutions

Diesel's detrimental environmental impact has long been understood, but now concrete action is being taken to combat this. Our solar power solution is helping to reduce the dependency on diesel.

In remote areas, the power grid remains one of the greatest challenges in maintaining coverage. Rural off-grid sites typically use a diesel generator and battery solution, leading to significant costs and CO2 emissions.

In the Central African Republic, together with telecom operator Maroc Telecom, we have rolled out a 3G modernization program using a solar hybrid solution to help reduce the carbon footprint. With 7.2 fewer hours of generator runtime per day compared to the conventional hybrid system, this equates to more than 7,000 liters of diesel saved per site, per year, and a 50 percent reduction in total yearly operating expenses.

Meanwhile, in Myanmar, our joint Pure Solar Myanmar project with communications service provider Telenor is successfully deploying the world's first 500Watt solar-powered site: a three-technology site (2G, 3G and LTE) in three bands (900, 1800 and 2100MHz). The innovations have resulted in a 75 percent reduction in total site power consumption while retaining full coverage, service quality and performance, removing the dependency on diesel energy and making solar more economical than diesel for the first time.
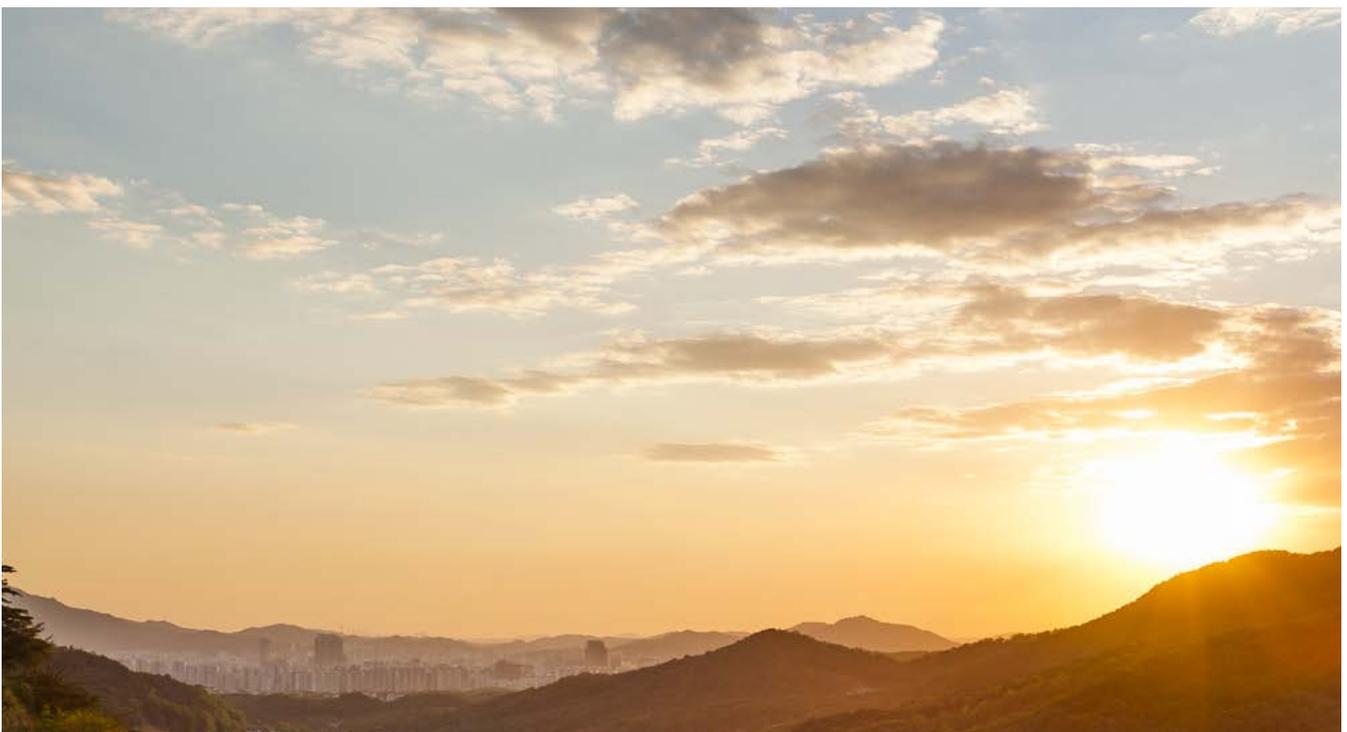
Revitalizing the mangroves

Mangroves play a vital role in conserving the marine ecosystems and ecotourism regions of South-East Asia. We are helping to preserve biodiversity of these critical habitats.

Mangrove forests are crucial to the protection of seaside communities from typhoons, flooding, erosion and other coastal hazards, and are a habitat for various aquatic life forms. However, over the last 5 decades, an estimated 50 percent of the world's mangroves have disappeared, and every year another 1 percent is lost.[3]

Together with Kampung Dato Hormat in Malaysia, our Connected Mangroves project combines cloud, machine-to-machine

and mobile broadband to help the local community better manage the growth of new mangrove saplings. Since its launch in 2017, volunteers have planted 3,400 mangrove saplings, and trees have grown more than 6 feet high, providing improved flood protection and enhancing the local community's ability to catch seafood.

The project is also helping to conserve the marine ecosystem of Bangkung Malapad in Pampanga — a critical habitat and ecotourism area in the Philippines.

Together with Smart Communications Inc., our IoT solution uses wireless connectivity to capture water levels, salinity, soil moisture and temperature data through waterproof solar-powered sensors installed onsite. The data is sent via a cloud system to a dashboard accessible to local authorities, fisherfolk and communities. The community has recorded a notable increase in biomass, and has increased its fish catch. Migratory birds not seen in the area since the early 1900s have also begun to return.

"Through this Internet of Things (IoT) solution, the community has been empowered to use data to manage their environment and take action to support the mangroves — and their community — to thrive."

Todd Ashton
Head of Ericsson Malaysia,
Sri Lanka and Bangladesh

2019

2015

[3] Based on information from the International Union for Conservation of Nature (IUCN)

Building sustainable wireless factories

To increase production efficiency and sustainability, Telia and Ericsson jointly piloted a new dedicated cellular network for IoT within the factory.

We have installed Automated Guided Vehicles, augmented reality and sensors via a dedicated cellular network at our 25,000sq m manufacturing site in Tallinn (Estonia). We carried out a sustainability impact analysis, including implementing private LTE/5G, IoT and machine learning, to highlight advanced use cases that also secure workplace safety, worker wellbeing and optimized environmental impacts.

Through capabilities such as augmented reality troubleshooting, precise indoor localization and work environment monitoring, efficiency gains have increased by up to 25 percent. The large site now supports three innovative processes to enable more efficient production.

"Mobile networks meet the requirements to support diverse smart manufacturing use cases, making it possible to securely and efficiently optimize manufacturing processes. They allow massive real-time data collection and analytics and intelligent automation on the factory floor, solving operational challenges and creating a more sustainable, efficient and safer production environment."

Lars Ottoson
Head of Supply Site Tallinn, Ericsson

Autonomous Guided Vehicle (AGV)
Transporting components is a labor-intensive, costly and repetitive task. AGVs delivering product components from the warehouse to the production lines are benefiting from the dedicated cellular network, which is saving time, reducing the risk of damaging components, cutting waste and providing a live stream of data and video, as well as using the network to open doors.

Augmented reality (AR)
AR troubleshooting provides interactive quality control and testing of electronic components. AR glasses or terminals provide the troubleshooter with an overlay featuring all the manuals, instructions and collective knowledge, allowing them to quickly identify potential problems. Field tests show a 50 percent reduction in time spent on troubleshooting circuit boards by using AR.

Environmental monitoring
Using mobile sensors, the factory can monitor the environment to measure moisture, temperature, noise, light and CO2. The goal is to provide a safe and healthy working environment while minimizing the risk of production defects. The cellular network can handle thousands of factory sensors, allowing them to be relocated as the building's layout evolves.

Increasing digital inclusion and reducing inequalities

The world has reached a 50−50 moment, where half the population is still unconnected to the internet. Mobile broadband is the most cost-effective and efficient means of delivering internet access to all.

We believe that the deployment of mobile broadband networks supports economic development, as evidenced by our research with Imperial College London. The results show that, on average, a 10 percent increase in the mobile broadband adoption ratio causes a 0.8 percent increase in Gross Domestic Product.

Our sector is so relevant to sustainable development that UN Secretary-General António Guterres convened a High-Level Panel on Digital Cooperation, which was co-chaired by Melinda Gates and Jack Ma. The panel's findings called for greater multi-stakeholder cooperation to make sure that the benefits of digital technology reach all, while addressing associated challenges.

Mobile broadband enables internet access and the delivery of digital services to meet a wide range of societal needs, including access to education and health services, financial inclusion, entrepreneurship and humanitarian response, while helping to reduce inequalities. These case studies highlight the results thus far.

"We are living at the dawn of a new digital era. Global cooperation among all parties — private sector, government, citizens, academics and civil society — is needed to use technology to achieve more prosperity, more opportunity, and more trust for people around the world. We need to focus especially on making technology inclusive so more women, young people, rural populations, small businesses and developing countries can benefit. We also need to rethink our education systems so they will prepare our young people for the future, instead of for yesterday."

Jack Ma
Co-chair, UN High-Level Panel on Digital Cooperation

Source: https://digitalcooperation.org/panel-launches-report-recommendations/
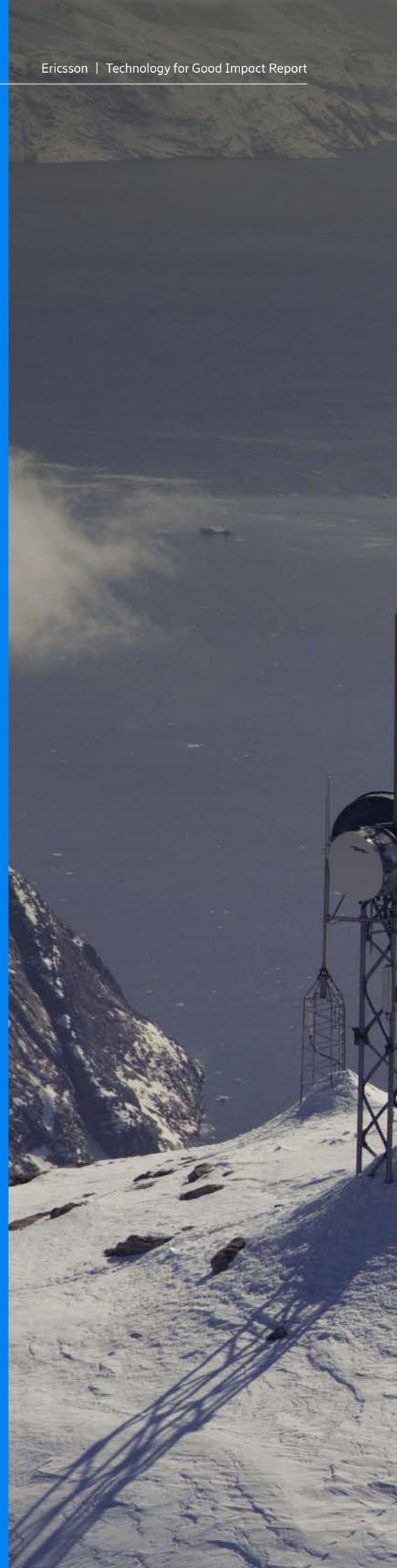
Internet for all in Greenland

Communities in Greenland are scattered across a wide geographical area around the vast island, and the main populated areas are characterized by difficult terrain and environmental conditions. Until recently, these rural areas have had poor or no internet access.

TELE-POST, the main telecommunications provider in Greenland, selected Ericsson as its strategic long-term partner to transform its network and introduce the Ericsson Radio System. We have provided a modernized Core network and cost-efficient upgrade of sites to LTE, delivering mobile broadband to a region of people formerly unconnected, as well as enhancing coverage. The Ericsson Radio System is introducing fixed wireless access in a number of settlements. The full-stack Ericsson NFVi solution will also be implemented as part of the project, enabling services such as Voice over LTE (VoLTE) and local switching.

This high-speed connectivity is optimizing operations and laying the foundation for new business.

"We are committed to providing Greenland's residents and businesses with the best possible mobile connectivity. We feel that Ericsson is the best suited partner to address the unique challenges in Greenland, while securing a successful network transformation."

Kristian Davidsen
Chief Executive Officer, TELE-POST

"This project is evidence of our global reach, technological skills and capabilities. We will improve connectivity across this massive island, home to the second largest body of ice in the world. Together with TELE-POST, we will deliver innovative mobile technology to some of the most remote residents in the world and open up a world of possibilities for local enterprises."

Per Narvinger
Head of Product Area Networks, Ericsson

Enabling financial inclusion

In Pakistan and Africa, many people are living on USD 2 or less a day, with only 15 percent of the population reported to have a bank account.

Aided by MTN in the Middle East and Africa, as well as Telenor and Etisalat in South Asia, the Ericsson Mobile Financial Services (MFS) platform was installed to provide easy-to-use, secure, next-generation mobile financial services. The flexible, reliable and efficient m-commerce solution includes Ericsson Wallet Platform, systems integration, operational support and further development opportunities.

Ericsson Wallet Platform allows users to store, transfer and withdraw money, pay merchants and utility providers as well as use financial services like savings and loans. The platform will be deployed in new markets where MTN will expand its mobile money services.

Millions of unbanked mobile users are now enjoying mobile financial services. The solution currently covers 13 African countries and several in South Asia.

"A stable, secure and reliable platform is one of the fundamentals of building successful mobile financial services. Through this partnership we look forward to working with Ericsson to further enhance our value proposition and expand our ecosystem."

Serigne Dioum
Group Head of Mobile Financial Services, MTN

Digital inclusion for refugees

As waves of Venezuelan refugees migrate to a small town in Brazil with limited connectivity, our Technology for Good @ Roraima project is providing an inclusive technology solution.

In recent years, many Venezuelans have fled their country for the Brazilian state of Roraima via the entryway city of Pacaraima, a municipality located in the north-western part of the state. A small town of approximately 12,000 people with limited connectivity, Pacaraima was not prepared to receive so many people in need of basic services and local community support.

The Technology for Good @ Roraima project was first conceived in 2017, when the Brazilian Government asked us to implement a technological solution that could enhance their response to the situation.

We partnered with Vivo (Telefónica) to deliver a very ambitious project divided into three parts:
− Bring 3G/4G connectivity to Pacaraima
− Enhance 4G coverage near the Federal University of Roraima (UFRR) building in Boa Vista
− Build a digital lab in Boa Vista to provide digital inclusion for migrants

The region's improved broadband services have impacted more than 40,000 Venezuelans in addition to the existing population of the region − in total, around 400,000 people. Better connectivity helps displaced individuals connect with their loved ones far away. Meanwhile, the digital inclusion lab has trained more than 500 Venezuelan immigrants and provides Portuguese lessons for both adults and children, which are offered in partnership with the UFRR.

"The project is an excellent opportunity. It helps foreign people to concentrate on Portuguese and technology learning and makes it easier to learn. This helped me to create sentences in Portuguese and have more fluid conversation with Brazilian people."

Maria José Cortez Lastro
Student

"A project of technology and culture with social and affective impact, which simultaneously welcomed students, teachers and managers in the mission of transforming and being transformed by education."

Professor Julia Faria Camargo
Lab Coordinator

Enabling access to education

Connect to Learn is our flagship education program.

Its purpose is to empower teachers, students and schools to deliver a quality 21st century education, as well as providing young people worldwide with digital skills. The program has four objectives:

Access to digital connectivity: Demonstrate the positive impact of accelerating broadband connectivity to schools as a key to achieving SDG 4.

Girls in STEM: Contribute to improving gender equality by empowering women and girls through ICT.

Education in humanitarian contexts: Empower children and young people through ICT-led education in crisis and conflict situations.

Digital skills: Contribute to preparing a digitally skilled workforce.

The following case studies provide some of the highlights.

"At UNESCO we think that artificial intelligence is to be put at the service of sustainable development. A whole set of new education and training programs has to emerge, to equip youth with skills required to live and work in the artificial intelligence era. Our partnership with Ericsson is critical to advance this agenda."

Borhene Chakroun
Director of Policies and Lifelong Learning Systems Division, UNESCO

Source: www.ericsson.com/en/ press-releases/2019/3/ericsson-and-unesco-launch-new-global-ai-skill-development-initiative-for-youth
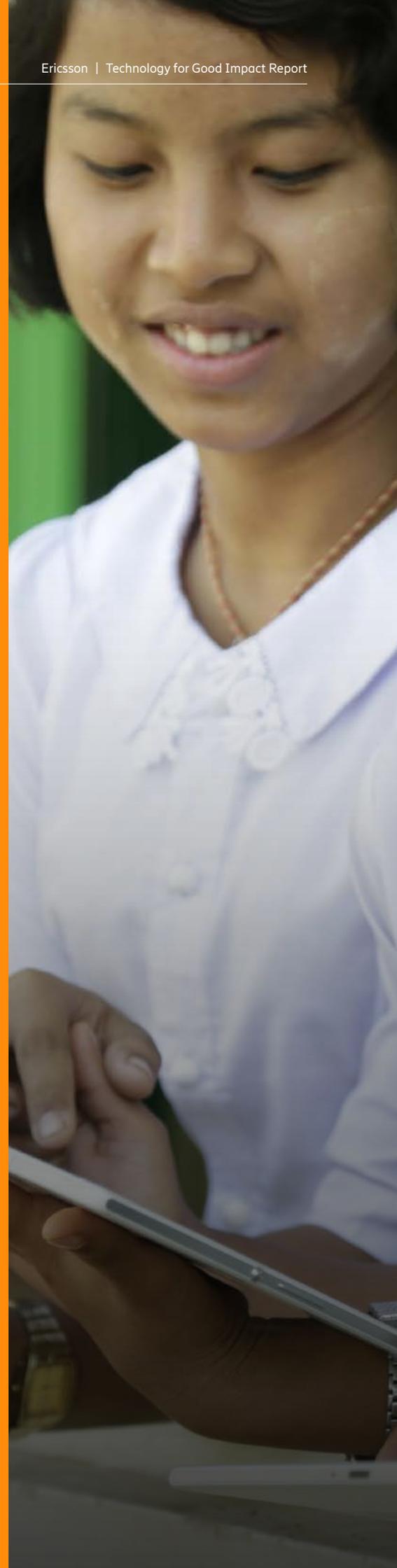
Empowering teachers and students in rural areas

In Myanmar, rural schoolchildren are receiving quality education as a result of our partnerships.

As part of the Connect to Learn project in Myanmar, to date, 31 schools are involved, equating to more than 30,000 students benefiting from the program – 310 teachers have received training and 600 girls have received scholarships.

In the latest phase of the Myanmar program, we have deployed a virtual reality (VR) training tool. The tool has four modules, downloadable from a cloud-based server, with each module designed to allow teachers to practise methods of teaching that are more student-centered.

The combination of internet connectivity, access to devices, customized content and teacher training has been proven to help facilitate access to a 21st century education. Teachers have assessed themselves as being more capable in ICT as a result of this project, while students rated themselves as "more engaged" thanks to a more student-centered style of learning used in the schools.

"Connect to Learn has demonstrated the power of mobility, broadband and cloud solutions to provide students and teachers access to customized educational content, as well as to information sources around the globe."

Daw Khin Mar Swe
Deputy Director General, Department of Basic Education, Myanmar

Empowering young women through STEM education

Our fiber network is helping to tackle the gender imbalance in the science, technology, engineering and math (STEM) industries.

Gender diversity in the workplace is a central focus for us, especially in the STEM industries, which have traditionally been male-dominated. In the US, women hold fewer than 25 percent of these jobs. We met with the Northeast Texas council in 2017 to discuss ways to improve the STEM experience at the Girl Scouts of Northeast Texas camp. The decision was that a fiber network and infrastructure would be of huge benefit.

The facility is now a dedicated STEM center: a 92-acre living laboratory providing opportunities that include robotics, coding, botany and chemistry. With the entire camp set up as a managed network, it has become possible to digitalize volunteer on-boarding and enable cloud-based processes. In addition, through the partnership, the Girl Scouts are offered job shadowing and tech camp opportunities, as well as the chance to attend the Grace Hopper Celebration, the world's largest gathering of female technologists.

Of the girls who have attended the camp, 86 percent say they are now more interested in STEM as a result. The new mission of the Girl Scouts is to put 2.5 million girls into a progressive STEM leadership pipeline by 2025. Together, Ericsson and the Girl Scouts are changing the face of STEM to meet the urgent need for female engagement and leadership in the fastest-growing sector of the US economy.

Digital skills for the future workforce

Our Digital Lab program is helping students gain
the skills needed to succeed in the future workplace.

The Fourth Industrial Revolution has arrived, and the need for new skills is emerging. Digital skills are at the center of this evolution and a prerequisite for the future employment of today's children and young people. They need not just to develop basic digital literacy skills but also to be exposed to "higher-level skills". These skills, such as computer programming and coding, have been known to support higher-order mental development, as well as encouraging under-represented groups to pursue advanced ICT education and enter the STEM field.

To meet this need, we have launched the Digital Lab program, an innovative education program targeted towards older children to support them in their first encounters with the world of programming and new technologies. The Digital Lab program started in Gothenburg, Sweden, as a collaboration with Universeum, a public science center based in Gothenburg. During 2019 the program is being expanded to include Italy, South Africa and India. The program engages not only Ericsson employees but also students from local universities who contribute to the content development and delivery of the program.

Technology transforming humanitarian response

The Ericsson Response program began in 2000, when a group of Ericsson employees realized the potential of mobile communications to assist in major disasters.

Within 72 hours, Ericsson Response volunteers can be on the ground providing connectivity to humanitarian relief workers so they can do their jobs most effectively in the aftermath of a natural disaster. Through the program, hundreds of employee volunteers have been trained and deployed all over the world, supporting over 40 humanitarian relief efforts in 30 countries.

Ericsson Response has played a leading role in the UN Emergency Telecommunications Cluster, a global network of organizations that work together to provide shared communications services in humanitarian emergencies. It's a pioneering example of public–private partnerships at their best.

"Strong partnerships lie at the heart of what we do! Beyond the technology, we need partners we can rely on. Ericsson Response and the devotion of its volunteers embody the spirit of what the private sector can bring to the humanitarian world. Together, we've built on our strengths and continue to meet some of the world's toughest challenges to help reconnect people and save lives."

Enrica Porcari
Chief Information Officer and Director Technology Division, World Food Programme and Chair of the ETC

"From natural disasters to conflicts, the complexity and frequency of emergencies have increased over the years. The need for reliable, robust and accessible technology solutions is crucial. Ericsson Response has been with us for years — training, deploying side by side with our teams and providing vital equipment to help connect humanitarians in their life-saving operations."

Gabriela Alvarado
Chief of ETC & WFP IT Emergency Coordination Branch, World Food Programme
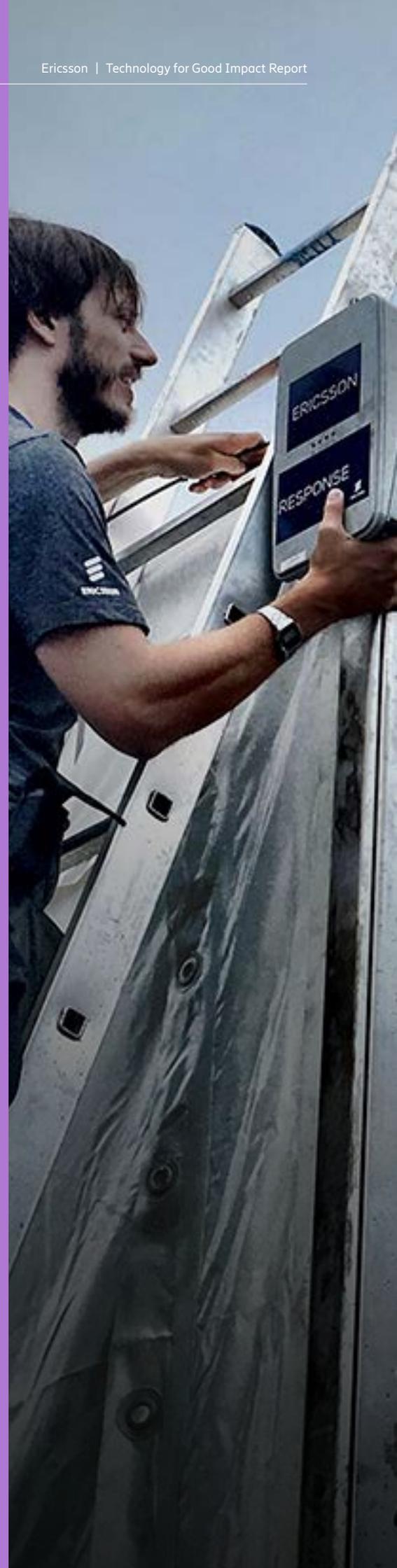
Ericsson Response deployments

When natural disaster struck the country of Mozambique, the Ericsson Response program played a key role in delivering emergency telecommunications.

On March 14, 2019, Cyclone Idai hit the Beira area of Mozambique. Ericsson Response was deployed as part of the Emergency Telecommunications Cluster (ETC).

Ericsson Response established vital voice and data services for more than 1,700 humanitarian workers in and around Beira. The first volunteers arrived within 72 hours to offer assistance, along with partners from the World Food Programme (WFP) and the Luxembourg Government.

The country was struck again on March 24 when a second cyclone devastated the region of Pemba. Ericsson Response increased capacity on the ground and responded to the latest disaster while continuing its work in Beira.

Ericsson Response's primary goal is to install and maintain temporary internet connectivity until local services have sufficiently recovered or until increased capacity is no longer needed.

Ericsson Response has been involved in the connectivity restoration effort following the devastation of Hurricane Dorian in the Bahamas.

Hurricane Dorian, a Category 5 hurricane, struck the northern Bahamas on September 1, 2019. About 90 percent of housing and infrastructure on Abaco Island was damaged or destroyed, and many homes were left without power.

The Emergency Telecom Sector (ETS)*, together with Ericsson Response and partners CISCO TacOps (Tactical Operations), NetHope, Télécoms Sans Frontières and Vodafone Foundation, are providing connectivity for humanitarian responders in five sites.

Ericsson Response enabled connectivity for humanitarian responders at the Marsh Harbour port and international airport; more than 180 users have had internet connectivity services provided by the ETS team across Abaco since the start of the response.

Critical connectivity services have been rapidly restored across Abaco and Grand Bahama, the two most affected areas. As part of the relief, partners to the National Emergency Management Agency, Ericsson Response and the WFP have begun training the Royal Bahamas Defense Force in operating connectivity equipment, to ensure humanitarians and affected populations stay connected as the response moves into the recovery phase.

* In the Bahamas, we are operating under the ETS approach.

Global awards and recognition

We're proud to be recognized for our sustainability
and corporate responsibility successes.

Joint Audit Cooperation (JAC) award
We have won the JAC award for best practice in health and safety
with Remote Site Assurance (RSA). The 2019 award focuses on
leadership, innovation and delivering excellence in worker welfare.

Vodafone health and safety awards
We have won the award of Supplier of the Year 2018/19, as well
as the health and safety award in recognition for our contribution
across Vodafone's international supply chain. In addition,
Vodafone has awarded Ericsson Germany for its significant impact
on ASP OHS processes.

TIM supplier award
We were awarded TIM best supplier in the area
"Sustainability in practice".

Telefónica supplier award
We have won the award of best supplier's proposal in the
IV Sustainable Innovation Initiative: Smart Manufacturing
and Sustainability.

Shortlist for GSMA GLOMO award
Ericsson and Vivo (Telefónica Brazil) were shortlisted for best
mobile innovation supporting emergency or humanitarian
situations for connecting Venezuelan refugees.

Rankings and ratings

We have achieved notable ranking for our various sustainability initiatives over the years.

Global 100 2019
We are ranked 21st on Global 100's list of the world's most sustainable corporations. Global 100 companies demonstrate the strong link between the delivery of superior value for society and the generation of superior financial performance.

CSR Rating
We have received a Gold rating from EcoVadis and are ranked in the top 0.12 percent of our industry, with a score of 82/100. EcoVadis is a collaborative platform that enables companies to benchmark the sustainability performance of their suppliers. This platform is used by more than 25 Ericsson customers.

FTSE4Good Index
FTSE Russell has confirmed for 2019 that we have been independently assessed according to the FTSE4Good criteria, demonstrating strong environmental, social and governance practices.

Ethibel Sustainability Index
We have been reconfirmed as a constituent of the Ethibel Sustainability Index (ESI) Excellence, both Europe and global, displaying best performance in corporate social responsibility.

Euronext Vigeo Eiris Index: Europe 120
We have been listed in the Euronext Vigeo Index: Europe 120. This list distinguishes companies that achieve the most advanced environmental, social and governance performance.

Dow Jones Sustainability Index
In 2019, Ericsson was included for the first time in the Dow Jones Sustainability Europe Index (DJSI). The DJSI family tracks the stock performance of the world's leading companies in terms of economic, environmental and social criteria.

Ericsson enables communications service providers to capture the full value of connectivity. The company's portfolio spans Networks, Digital Services, Managed Services, and Emerging Business and is designed to help our customers go digital, increase efficiency and find new revenue streams. Ericsson's investments in innovation have delivered the benefits of telephony and mobile broadband to billions of people around the world. The Ericsson stock is listed on Nasdaq Stockholm and on Nasdaq New York.

www.ericsson.com