ITU News MAGAZINE

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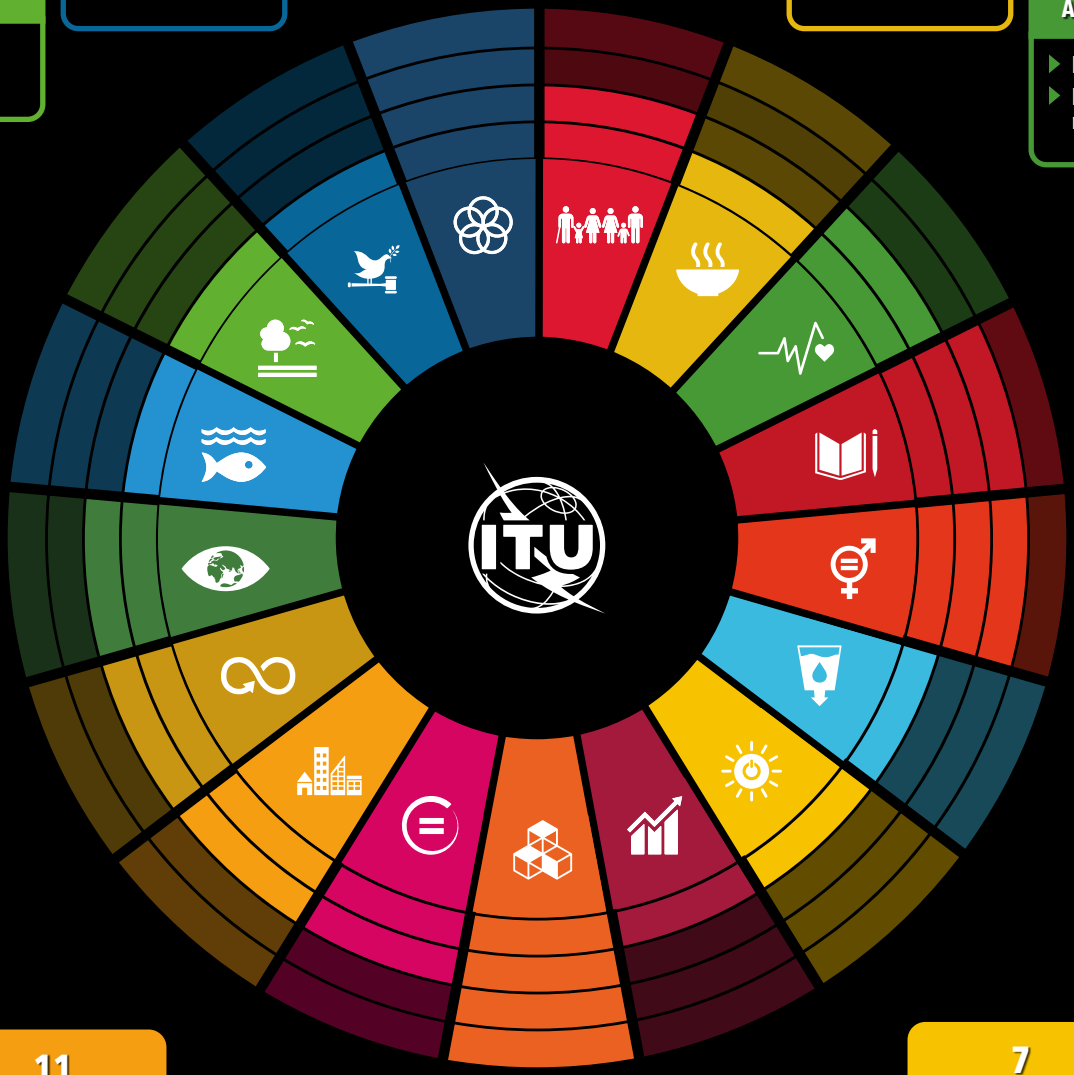
2022

Tech serving people and the planet

Sustainable Development Goals: **Digital solutions**



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Connect 2030: Accelerating progress on the UN Sustainable Development Goals

By Houlin Zhao, ITU Secretary-General

> *"The benefits of new and emerging technologies need to be distributed widely and shared fairly across the world."*
>
> Houlin Zhao

Central to the sustainable development agenda set out by the United Nations (UN) for 2030 is the promise to leave no one behind. For the International Telecommunication Union (ITU), this means leaving no one offline.

Despite a welcome surge of connectivity over the last two years, the world's enduring digital divide reflects serious and widening development gaps between and within countries. Digital exclusion mirrors poverty, illiteracy, limited electricity access, lack of digital skills, and inadequate content in local languages – with disproportionate impacts on women, persons with disabilities and marginalized communities.

The challenge before us, as the UN specialized agency for information and communication technologies (ICTs), is to ensure that connectivity reaches everyone, everywhere. The benefits of new and emerging technologies in fields ranging from 5G to artificial intelligence (AI) to the Internet of Things need to be distributed widely and shared fairly across the world.

In the face of the ongoing COVID-19 pandemic, ITU has made strides in digital education, digital health, and sector-level climate action – harnessing digital tech to serve three crucial aspects of sustainable development. Our particular focus on Goal 9 – industry, innovation, and infrastructure – allows us to leverage our core competencies in spectrum management and international standardization. In parallel, Goal 17 – partnerships – reflects the values of collaboration at the heart of ITU's work since the organization's inception over 150 years ago.

Technology can – and must – serve all 17 Sustainable Development Goals (SDGs). In a time marked by urgent and looming crises but also great opportunities, let us make 2022 the year to accelerate progress towards building a more sustainable, peaceful and connected future for all.

Tech serving people and the planet

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53 Goal 17: **Partnerships for the goals**
- Celebrating radio's trust and accessibility
- Let's build consensus on how new tech should factor into our future
- Partnering to connect the world

Current crises have driven the world further off course.

Still, these **equalizing goals** matter more than ever to ensure no one is left behind.

1 NO POVERTY

- **Digital financial inclusion:** Mobile access to financial services for the world's 1.7 billion unbanked
- **Digital services:** Facilitating information and service delivery, promoting job creation and self-employment, raising productivity and job quality, and alleviating poverty

2 ZERO HUNGER

- **Digital agriculture:** Access to market updates and weather forecasts, boosting rural business productivity
- **Precision farming:** Optimized fertilization to reduce costs and environmental impact
- **Reducing food waste:** AI and Big Data leveraged to re-allocate surplus food

3 GOOD HEALTH AND WELL-BEING

- **Digital health:** Direct patient interaction, health informatics and telemedicine
- **Evidence-based mobile services:** Mobile healthcare, AI health monitoring

4 QUALITY EDUCATION

- **Online learning:** Access to knowledge no matter where you live or how much you earn
- **Connecting schools:** Worldwide location mapping to identify and address connectivity gaps
- **Digital skills development:** Skill sets ranging from basic (like sending e-mails) and intermediate (creating electronic slides) to advanced (like computer programming), boosting connectivity and enhancing job opportunities

5 GENDER EQUALITY

- **Digital empowerment:** Expanding career opportunities for women in girls in science, technology, engineering, and mathematics (STEM)
- **Networks for women:** Cyber mentorship, women's leadership examples, and ongoing capacity building for women in policy and technology roles

6 CLEAN WATER AND SANITATION

- **Smart water management:** Aquifer monitoring via satellite, ensuring safe drinking water supply, effective sanitation, and hygiene

7 AFFORDABLE AND CLEAN ENERGY

- **Greening the grid:** Boosting energy efficiency, enabling smart grids, upholding green standards, scaling up solar and wind power

8 DECENT WORK AND ECONOMIC GROWTH

- **Building the digital economy:** Driving e-commerce, fostering small and medium-sized enterprises (SMEs), creating entrepreneurship opportunities, enhancing cyber trust

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

- **New and emerging applications:** Scalable solutions for sustainable development, providing essential infrastructure for 21st-century industry and innovation
- **Digital transformation:** Broadband, 5G systems and other digital infrastructure based on globally harmonized spectrum and standards, essential to drive equitable, inclusive socio-economic development and prosperity leaving no one behind
- **Expanding connectivity:** Widespread online access, with an estimated 4.9 billion people (63% of the global population) using the Internet by end-2021 after a COVID-19 connectivity surge – although 2.9 billion people remain offline

10 REDUCED INEQUALITIES

- **Bridging digital divides:** Enabling solutions and inclusive support for vulnerable and marginalized communities, helping persons with disabilities, older persons, and others fully engage and participate

11 SUSTAINABLE CITIES AND COMMUNITIES

- **Scaling up interconnections:** Smart cities, intelligent transport and mobility, 5G and the Internet of Things, and sustainable, dynamic urban infrastructure

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

- **Reducing e-waste:** Smart metering, cloud computing, eco-standards, and building circular economies
- **Lean manufacturing:** Industrial IoT and Industry 4.0

13 CLIMATE ACTION

- **Intelligent monitoring and mitigation:** Earth-observation satellites, weather forecasting, early warning systems, and future climate scenario models
- **Sector-wide emission reduction:** Science-based target (ITU L.1470) requiring 45% reduction in greenhouse gas emission across the information and communication technology (ICT) sector between 2020 and 2030, ensuring emission-reduction trajectories consistent with the Paris Agreement and limiting global warming to 1.5°C above pre-industrial levels

14 LIFE BELOW WATER

- **Expanding undersea knowledge:** Satellite monitoring and robot exploration

15 LIFE ON LAND

- **Safeguarding biodiversity:** Tracking wildlife populations, detecting poachers and illegal loggers

16 PEACE, JUSTICE AND STRONG INSTITUTIONS

- **Open data:** Ensuring transparency, empowering citizens, and driving economic growth

17 PARTNERSHIPS FOR THE GOALS

- **Global networks:** Tech-driven capacity building and collaboration, integrating and facilitating all aspects of sustainable development
- **Digital cooperation:** Neutral platform via International Telecommunication Union (ITU), committed to connecting the world
- **Connect 2030 Agenda:** Promoting universal connectivity and sustainable digital transformation for all

Digital sustainable development

Digital financial services: Lifting people out of poverty

More than 1.7 billion people in the world don't have bank accounts. However, access to digital financial services has been proven to help lift people out of poverty. The Financial Inclusion Global Initiative (FIGI) expanded digital financial inclusion in developing countries.

As the decade progresses, digital financial inclusion will be crucial to achieve universal financial access, eliminate poverty, reduce inequalities and ensure a sustainable global future. Learn more on this fast-growing field in recent ITU News Magazine coverage.

Learn about the ITU Digital Financial Services Security Lab.

When ICTs meet agriculture: Connected melon farmers bear fruit

Hydroponic melon farming – as practiced in Japanese cities like Machida and Fukuroi City – offers a prime example of how information and communication technologies (ICTs) can support profitable hydroponic agriculture that strengthens the urban food chain. Hydroponic farming in greenhouses, has proven a cost-effective ICT solution to increase productivity and reduce workload for farmers.

Read the full article.

By making agricultural practices more data-driven and efficient, ICT-enabled solutions can help farmers increase crop yields while reducing their use of energy. The UN Food and Agriculture Organization (FAO) is working with ITU to bolster ICT innovation in agriculture.


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3 GOOD HEALTH AND WELL-BEING

AI for health care in Brazil

For infectious disease physician Hugo Morales, new and emerging technologies like artificial intelligence (AI) offer the promise of a better medical future.

"Only through technology can we democratize quality health care and patient safety," says Morales, co-founder and chief medical officer at Laura, a Brazilian health-care tech start-up.

In 2016, Morales – an infectious disease physician – met analyst and AI systems developer, Jackson Fressatto, who six years earlier had lost a baby daughter to sepsis complications, partly because of delays in diagnosis and treatment.

After this personal tragedy, Fressatto, had put all his efforts into building a prototype solution that would help health-care professionals diagnose sepsis sooner.

The physician and the systems developer, along with another tech expert, Cristian Rocha, went on to found a company to bring Fressatto's AI health-care concept to reality. They named their start-up "Laura" as a tribute to the little girl.


UN

"Only through technology can we democratize quality health care and patient safety."

Hugo Morales
Co-founder and Chief Medical Officer, Laura

The need for a systemic solution

As Morales told participants in a recent AI for Good webinar, he and the Laura team quickly realized that sepsis was "just the tip of the iceberg" when they discovered shortcomings in overall patient care, in some cases exacerbated by rapid digitization.

"We deliver care in a chaotic and complex way, with concurrent processes," he said. "And now we are drowning in bureaucracy and big data, which makes this context very prone to error and potential patient harm."

This is especially frequent in developing countries, with inadequate written processes, insufficient numbers of health-care professionals and high staff turnover, both within and outside of hospitals.

"We were facing not just a focused problem, but a systemic problem, which required a systemic solution," he said.

Two AI options

Over the past few years, the company has promoted two technological solutions:

1. **Laura Clinical Intelligence** – A three-part solution consisting of a decision support tool, a communication hub, and protocol management for hospitalized patients. Focused on data analysis using AI, the system generates insight and acts as a digital assistant facilitating the daily lives of doctors and nurses.

2. **Laura Care** – A coordination platform designed for outpatient settings and for chronic and post-surgical monitoring, uses AI to deliver care throughout the patient's entire treatment journey.

Obstacles to recognizing clinical deterioration

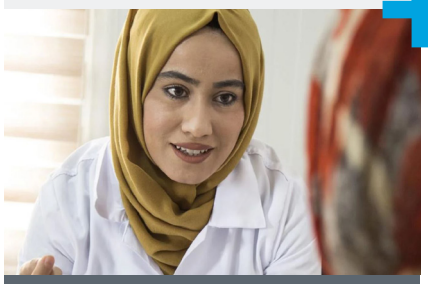
An average of 10 per cent of hospitalized patients will suffer clinical deterioration, in some cases leading to transfers to intensive care or death. Early detection and treatment are crucial to achieve good outcomes.

Still, globally, "one in four clinically deteriorating patients don't receive the right diagnosis and treatment," asserts Morales.

Algorithm of life

The story behind the creation of LAURA.

> *"We deliver care in a chaotic and complex way, with concurrent processes."*
>
> Hugo Morales



Globally, as many as 4 in 10 patients are harmed in primary and outpatient health care. Up to 80 per cent of cases are preventable. The most detrimental errors are related to diagnosis, prescription and the use of medicines.

Source: World Health Organization (Patient safety – key facts).

The failure to recognize clinical deterioration – the worsening of a patient's health while under clinical care – is multidimensional, involving three main obstacles:

1 **Disconnected data:** Even digitized data are kept in silos, not easily accessible by decision-makers. Staff may spend more time looking for data than taking care of patients.

2 **Inaccurate alerts:** National early warning scores (EWS), used since the 1990s, rely on limited numbers of variables with fixed thresholds.

3 **Communication errors:** In hospitals all over the world, the leading cause of adverse events is simple miscommunication.

Machine-learning data model

The company created a platform that connects to health records, aggregates information and uses machine learning (ML) models to predict risks such as clinical deterioration. It then communicates those issues in a smart way to the care team.

Between 2016 and 2019, the company's ML model collated data from patients at six different hospitals in Brazil – tracking over 120 000 unrepeated medical encounters (i.e., those with no repetition for the same complaint) and generating more than 7.5 million data points.

Key findings

Brazil's AI health-care experience highlights several basic challenges to address:

- To develop supervised ML algorithms, large datasets are needed with labels (e.g., indicating patient outcomes). Such information can be hard to find in developing countries.
- Each health-care unit needs its own solution, incorporating different technologies and information models based on local conditions and requirements ensuring interoperability and integration.
- Hospitals and health-care institutions may need additional layers of governance to help use data systems correctly, as well as to analyse new hospital data.

> *"One in four clinically deteriorating patients don't receive the right diagnosis and treatment."*
>
> Hugo Morales

Medical encounters in Brazilian hospitals: ML data

- Data extracted from **six hospitals**
- *Where:* Brazil (Curitiba, Port Alegre and São Paulo)
- *When:* January 2016 – October 2019
- *Input:* **121 089 unrepeated medical encounters**
- *Output:* **7 540 389 data points**

- Missing values create analytical challenges and risks of error.
- Data must be native-born (generated to address end-user needs) and shaped for rapid analytics and decision making.

To take ML models further, Morales stresses the importance of routine algorithmic auditing. "Analysing performance and biases and problems with data sets should be looked at in a timely manner throughout the medical care journey," he says.

With AI systems embedded in different technologies, interoperability can become a major issue. Morales underlines the need for standardization in the way information is digitized and classified.

All dimensions of the patient journey should be reflected, including intensive care admissions, number of hospitalizations, length of hospital stay, readmission rate, costs, and clinical outcomes, including survival versus death.

Humans – including both patients and health-care teams – need to be at the centre of the creation and deployment of any health tech solutions.

The Laura start-up now serves over 40 health-care institutions across more than 30 southern Brazilian municipalities. According to Morales, the start-up now has more than 18 million medical encounters in its database, and its AI products have managed to reduce the length of hospital stays, transfers to intensive care, and mortality rates.

AI for Good webinar talk

Listen to the full AI for Good webinar talk and Q&A with Hugo Morales on the advances and challenges of using AI-based algorithms in health care in Brazil.

More about LAURA on the company website.

This article is based on an AI for Good webinar talk and the experience and viewpoints of Hugo Morales.

> *"Analysing performance and biases and problems with data sets should be looked at in a timely manner throughout the medical care journey."*
>
> Hugo Morales

Focus Group on AI for Health

The ITU/WHO Focus Group on Artificial Intelligence for Health (FG-AI4H) works in partnership with the World Health Organization (WHO) to establish a standardized assessment framework for the evaluation of AI-based methods for health, diagnosis, triage or treatment decisions.

Participation is open to all.

Learn more.

AI for Good Discovery

3 GOOD HEALTH AND WELL-BEING

AI for Health

webinar series

Upcoming talks:

13 April 2022

Beyond bias: Algorithmic unfairness, infrastructure and genealogies of data

17:00–18:30 CET (Geneva)
23:00–00:30 CST (Beijing)
11:00–12:30 EST (New York)

Alex Hanna
Google

27 April 2022

AI in health and medicine

18:00–19:30 CET (Geneva)
12:00–13:30 EST (New York)
09:00–10:30 PT (San Francisco)

Eric Topol
Scripps Research Translational Institute

Isaac Kohane
Harvard Medical School

4 May 2022

The gift from yesterday: Medical data as a public good

17:00–18:30 CET (Geneva)
23:00–00:30 CST (Beijing)
11:00–12:30 EST (New York)

Matthew Lungren
Amazon Web Services (AWS) Worldwide Public Sector Healthcare

All year – always online

Opportunities and challenges for artificial intelligance (AI) to boost health care

Browse all topics

Register to participate

ITU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School connectivity for underserved communities

Aiming to pick up the pace on digital sustainability, the International Telecommunication Union (ITU) and the United Kingdom's Foreign, Commonwealth & Development Office (FCDO) joined forces last year to co-design a far-reaching digital inclusion project.

Together, the two institutions aim to help bridge the persistent global digital divide.

Despite efforts over the past decade to narrow the gap, an estimated 37 per cent of the world's population remains unconnected. People living in rural areas – especially in developing economies – face greater access and usage constraints than those in urban areas.

Faster advances are needed in regulation, investment, technologies, and business models – particularly to achieve universal connectivity by 2030. This equates with fulfilling the current Decade of Action set out by the United Nations to accelerate sustainable development globally.


UN

Faster advances are needed in regulation, investment, technologies, and business models.

"The UK shares ITU's ambition of closing the global digital gap," said Ambassador Simon Manley, UK Permanent Representative to the United Nations (UN) and other international organizations.

"For this reason, the FCDO Digital Access Programme [DAP] team has recently co-designed an exciting collaboration with ITU, to leverage each other's expertise and ongoing digital inclusion initiatives."

The COVID-19 pandemic has put into sharp focus the need for digital connectivity to learn, work, trade and communicate. But recent challenges have also widened the gap between people who – thanks to the Internet and digital technologies – enjoy broad access to information and opportunities, and those without.

Doreen Bogdan-Martin, Director of ITU's Telecommunication Development Bureau, said: "In a world beset by global crises, we simply cannot and will not move forward without enhanced global cooperation and a renewed emphasis on partnership."

> *"In a world beset by global crises, we simply cannot and will not move forward without enhanced global cooperation and a renewed emphasis on partnership."*
>
> Doreen Bogdan-Martin
>
> Director of ITU's Telecommunication Development Bureau

Complementary goals

With an initial duration of 12 months, the project focuses on five FCDO-designated Direct Aid Programme (DAP) countries: Brazil, Indonesia, Kenya, Nigeria and South Africa. Major gaps remain in all five countries in terms of affordability and access to connectivity.

The project initially focuses on Brazil, Indonesia, Kenya, Nigeria and South Africa.

ITU and FCDO aim to complement each other's activities, programmes and goals in relation to school and community connectivity and digital skills development.

ITU will contribute technical assistance and capacity building in four key areas:

- Regulatory analysis, framework and tool development;
- Expanding school connectivity sustainably in underserved communities;
- Promoting more conducive conditions for private and public investment in digital inclusion;
- Advancing digital skills to ensure decent jobs, especially for young people.

Aligned with UN imperatives

First announced on 25 June during the 2021 Global Symposium for Regulators (GSR), the partnership embodies digital transformation, multilateralism and international cooperation – three of ten inter-related imperatives for action recently outlined by the UN Secretary-General, António Guterres, as he began his second term.

Teaming up with ITU – the UN specialized agency dedicated to digital transformation – can heighten the impact of UK development programmes in promoting conducive regulatory frameworks and investment environments.

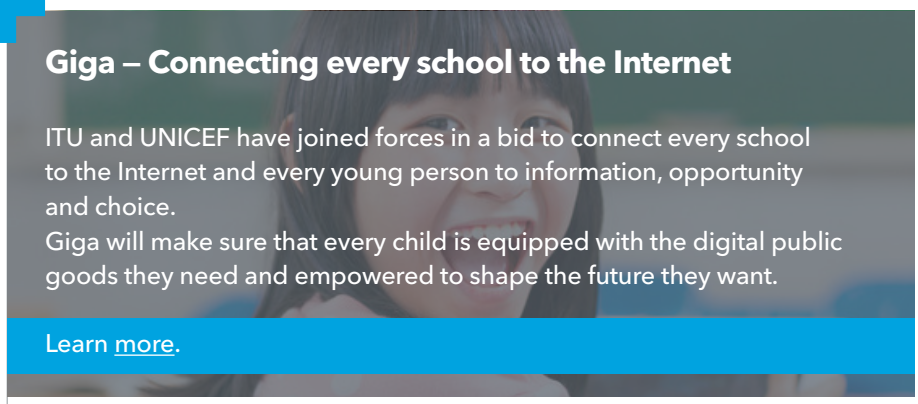
The joint project aims to leverage ITU's technical expertise and extensive stakeholder and partner network through initiatives like Giga (Connecting every school to the Internet) and Decent Jobs for Youth (Boosting decent jobs and enhancing skills for youth in Africa's digital economy).

Collaboration with the UK's FCDO is equally critical from ITU's perspective, as a means to address young people's urgent need for digital knowledge, school connectivity and digital skills training.

Digital skills for decent jobs

ITU and the International Labour Organization (ILO) aim to equip 5 million young men and women with job-ready digital skills by 2030 in support of a United Nations system-wide effort for the promotion of youth employment worldwide.

Learn more.



Giga – Connecting every school to the Internet

ITU and UNICEF have joined forces in a bid to connect every school to the Internet and every young person to information, opportunity and choice.
Giga will make sure that every child is equipped with the digital public goods they need and empowered to shape the future they want.

Learn more.

ITU statistics 2020

Digital skills

of individuals in countries where data are available

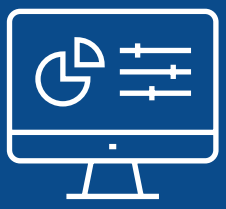
Basic skills

In 77% of countries surveyed, less than **60%** of the population have basic skills

e.g. sending an e-mail

Standard skills

In almost 70% of countries surveyed, less than **40%** have standard skills



e.g. creating an electronic slide presentation

Advanced skills

In only 15% of countries surveyed, more than **10%** can write a computer program

Skills development remains crucial to **achieve meaningful connectivity** and **enhance job opportunities**.

Note: Survey participants were asked if they had undertaken specified activities in the past three months that require different levels of skill.

Source: ITU (2021), *Measuring digital development: Facts and figures 2021*


Christina Morillo via Pexels

5 GENDER EQUALITY

Mentors and trailblazers: Paving the way for more women in cyber

Cybercriminality is on the rise worldwide. But in addition to a chronic global shortage of cybersecurity professionals to combat it, a significant gender gap persists in a field where three out of four professionals are men.

An International Telecommunication Union (ITU) webinar highlighted the scale and extent of the problem – and looked to prominent female cybersecurity experts for advice on redressing the issue.

Part of ITU's annual Global CyberDrill, which simulates information cybersecurity incidents and other types of disruptions to test an organization's capabilities to counter cyberattacks, the webinar emphasized the importance of role models and mentorship opportunities in encouraging women to make the leap into one of the digital industry's most male-dominated realms.


UN

Three out of four cybersecurity professionals are men.

Jane Frankland, cybersecurity influencer and award-wining entrepreneur, calls cyber a "particularly tough" field for women.

"You are working in a male-dominated industry and may be judged more harshly in the immense competition that is present," she says.

"We urgently need to improve diversity in the cybersecurity field, so that we benefit from women's unique insights and perspectives, and so that more women get the opportunity to take advantage of the many new and exciting opportunities this field offers," says Doreen Bogdan-Martin, Director of ITU's Telecommunication Development Bureau.

"We believe a holistic model built around role models and mentoring offers immense potential to tackle the cultural and systemic barriers that prevent the broader inclusion of women in cybersecurity. That's the motivation behind the new Women in Cyber (WiC) mentorship programme, launched last year by ITU in partnership with the Forum of Incident Response and Security Teams (FIRST) and the EQUALS Global Partnership," she says.

Inspire, train, empower

The WiC Mentorship Programme rests on three pillars: Inspire, Train, and Empower.

Inspire invites women with successful careers in cybersecurity to serve as role models, sharing their inspirational experiences through monthly keynote webinars.

Train introduces mentees to different technical fields in cybersecurity through monthly courses, while also helping them improve soft skills such as communication and leadership.

Perhaps most importantly, **Empower** is where mentees participate in guided monthly sessions with mentors, building their relationships and learning directly from senior women professionals and peers.

Together, all three pillars aim to equip participants with the tools they need to advance and succeed in one of the most rewarding and fast-growing digital markets.

> *"We believe a holistic model built around role models and mentoring offers immense potential to tackle the cultural and systemic barriers that prevent the broader inclusion of women in cybersecurity."*
>
> Doreen Bogdan-Martin
>
> Director of ITU's Telecommunication Development Bureau

EQUALS

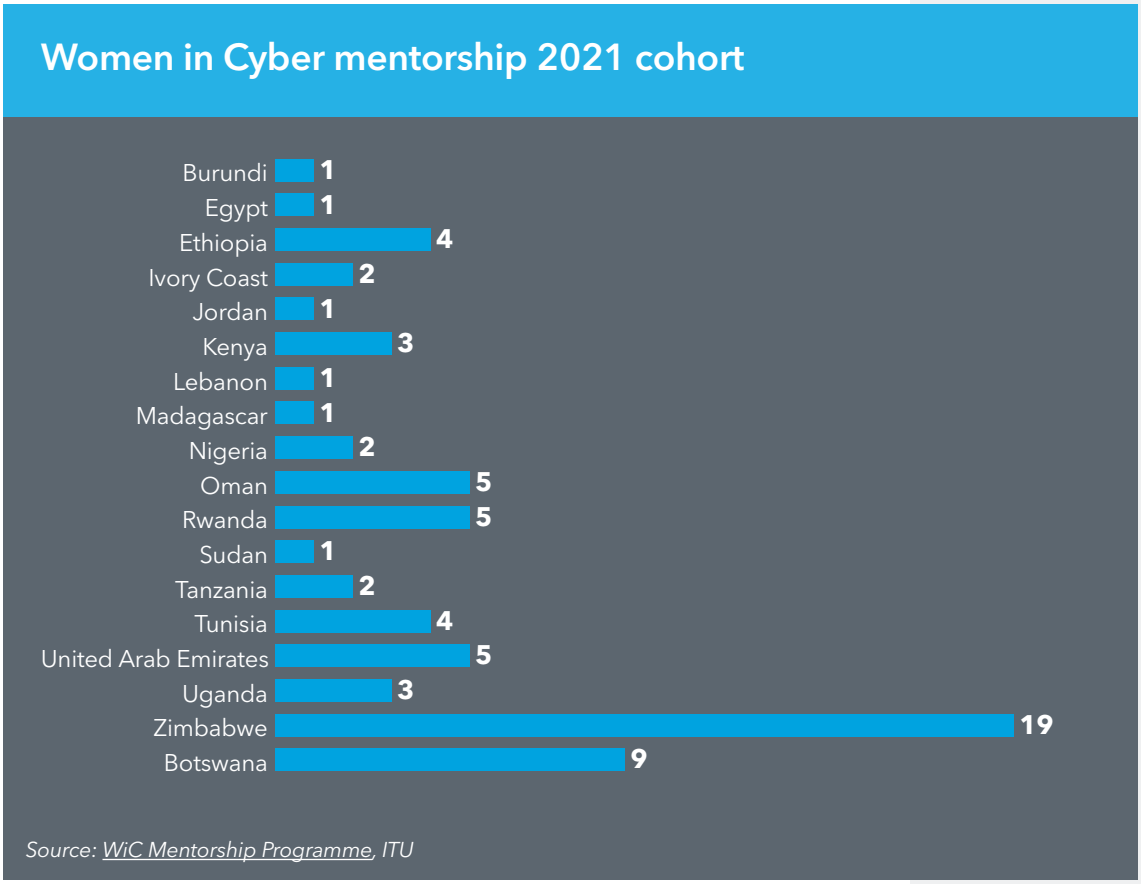
Gender equality initiatives where ITU is directly engaged include EQUALS, a ground-breaking global network to build an evidence base and improve women's access to technology, build relevant digital skills, and promote female leadership in the tech sector.

Learn more about EQUALS, and new initiative Her digital.

A successful first pilot

A six-month WiC pilot programme launched on International Women's Day 2021 saw 69 mentees from Arab and African countries matched to 20 mentors based on background, fields of expertise, and desired outcomes. Thanks to the programme's expertly targeted curriculum, participants had the opportunity to network with women in senior roles and develop the skills needed to pursue new career paths and opportunities in the rapidly evolving cybersecurity field.

At the end of the programme, 40 proud mentees graduated from the 2021 cohort.



According to a programme survey, 91 per cent of mentees agreed that WiC enabled them to have a clearer perspective in their cybersecurity career goals. 91 per cent of mentees also agreed that the programme helped them improve their overall personal development.

Maintaining momentum

To ensure the WiC programme remains sustainable and mentee-driven, special "Envoys" have been selected from the 2021 cohort to serve as both regional and international representatives. These envoys will become catalysers of the programme's growth, participating in future editions as "Junior Mentors" and sharing their experience and advice with future cohorts.

WiC programme Envoy Angela Matlapeng said she "experienced exponential growth, having gained new technical and soft skills paramount to my career in cybersecurity." She added: "I have increased my network and cross-border collaboration with other amazing women and experts in the cybersecurity workforce."

Several mentees have already found new jobs, and as the WiC programme continues to create new links around the world, future editions will expand opportunities for new participants in other regions, targeting women in the Arab States, Africa and Asia-Pacific. Applications are now open for 2022.

Learn more about the Women in Cyber Mentorship Programme.

> *"I have increased my network and cross-border collaboration with other amazing women and experts in the cybersecurity workforce."*
>
> Angela Matlapeng
>
> WiC Mentorship Programme Envoy

Listen to the latest episode of the Unconnected podcast with mentor Doreen-Bogdan Martin, Director of ITU's Telecommunication Development Bureau, and mentees in the Women in Cyber Mentorship Programme.

International Girls in ICT Day

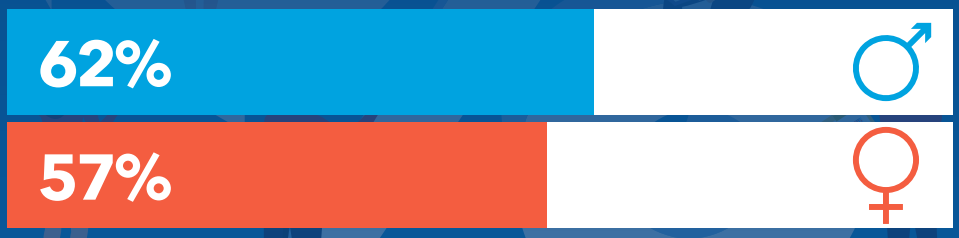
ITU and its global membership aim to close the deep-rooted digital gender gap. They organize the annual International Girls in ICT Day to encourage more women and girls to pursue science, technology, engineering, and mathematics (STEM) careers.

This year's event will be celebrated on 28 April.

Learn more about the annual event.

Internet use is moving closer to gender parity

Percentages of men and women online globally in 2020

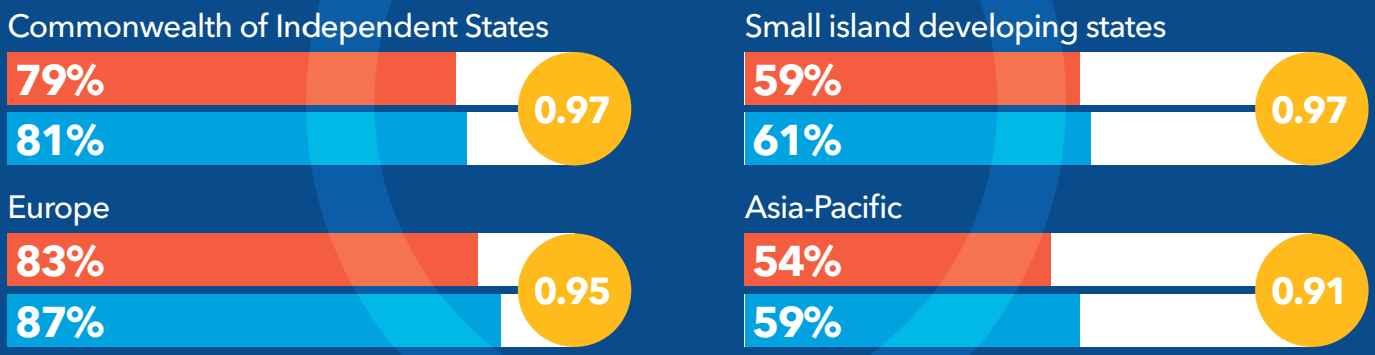


Gender balance in Internet use:

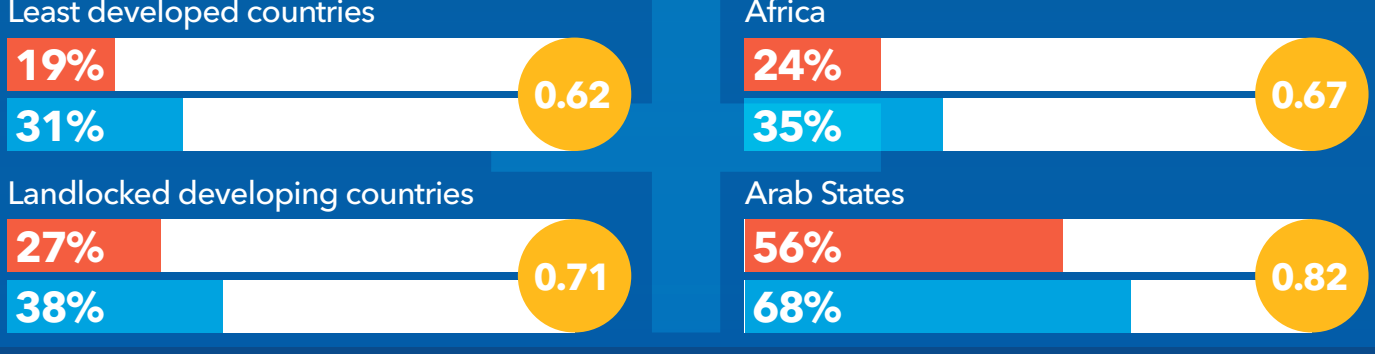
Parity score

♀ = ♂ Parity achieved

♀ ≃ ♂ Parity almost achieved



Wider gender divide: ♂ > ♀



Note: Gender parity is deemed achieved when the gender parity score, defined as the female percentage divided by the male percentage, stands between 0.98 and 1.02.

Source: ITU (2021), *Measuring digital development: Facts and figures 2021*

Smart water management

Smart water management seeks to alleviate challenges in the urban water management and water sector through the integration of information and communication technology (ICT) products, solutions and systems. Technologies continuously monitor water resources and diagnose problems while allowing to prioritize and manage maintenance issues more effectively.

Ugandan tech solution helps deliver clean water for all

The WaterKit mobile app in Uganda is designed to monitor and gather real-time data from the daily functioning, hygiene and reliability of local water resources such as pumps and boreholes.
Volunteers are trained to use the app and perform a simple water quality test and monitoring of the water points. This information is then uploaded to WaterKit's cloud-based storage platform to help governments and humanitarian organizations make policy decisions.

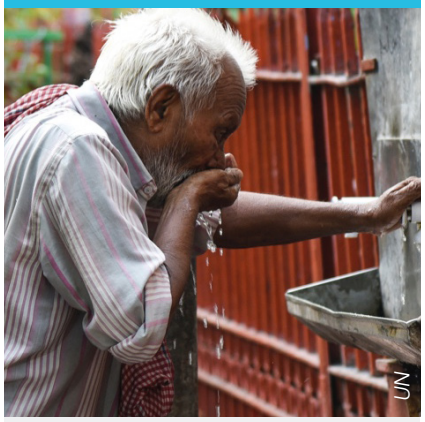
Read the full article.

Focus Group: Environmental Efficiency for Artificial Intelligence and other Emerging Technologies

This ITU Focus Group develops technical reports and technical specifications to address the environmental efficiency as well as water and energy consumption of emerging technologies. It provides guidance to stakeholders on how to operate these technologies in a more environmentally efficient manner.

Learn more and how to contribute.

6 CLEAN WATER AND SANITATION



Smart water management in cities

A technical report by the ITU Focus Group on Smart Sustainable Cities provides an overview of the key issues involved in smart water management within urban settings, including the problems and opportunities faced by cities.

Download here.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7 AFFORDABLE AND CLEAN ENERGY

Digital is the future of urban energy

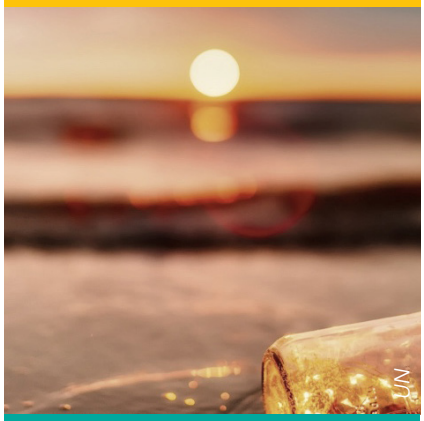
Cities already account for two-thirds of energy consumption and produce more than 70 per cent of carbon emissions globally every year.

With more than half of all people in the world living in cities, smart urban energy systems are needed to bring climate-damaging emissions down to net-zero in the next few decades.

Digital solutions can help cities reduce emissions and make the transition to clean energy systems, according to a report from the International Energy Agency (IEA).

By 2050, when almost 70 per cent of the world's population will be city dwellers, energy will be in even higher demand.

To provide it sustainably, cities will need smart grids and innovative storage that integrate renewable power generation, electrified transport, and efficient heating and cooling, along with climate-safe bioenergy and waste-to-energy solutions.



Digital solutions can help cities reduce emissions and make the transition to clean energy systems.

Bringing all these together will depend on top-to-bottom digitalization of urban energy systems and related services. The IEA report, "Empowering Cities for a Net Zero Future", based on consultations with over 125 experts, advises pioneering cities on how to ensure a sustainable energy future based on digital technologies.

By 2050, digitalization and smart controls can reduce CO_2 emissions from buildings by 350 million tonnes.

Building smart grids

Flexible energy systems enable agile responses to real-time situations, balancing demand and supply throughout the day. Smart grids with real-time monitoring and predictive analytics can offer reduced peak loads, better integrate renewables at lower costs and minimize pressure on aging grid infrastructure.

Smart grids will be crucial to address global warming by reducing carbon-dioxide (CO_2) emissions. Direct access to data, meanwhile, empowers consumers to manage their energy consumption and costs.

In the United Arab Emirates, the Dubai Electricity and Water Authority (DEWA) says it has installed a local smart grid that enables "automated decision-making and interoperability across the entire electricity and water network."

By 2050, digitalization and smart controls can reduce CO_2 emissions from buildings by 350 million tonnes, the IEA estimates.

Connected mobility

Electrification of transport and widespread EV use will help to scale up renewable energy sources through smart charging and vehicle-to-grid (V2G) systems that adapt charging rates to power availability and sometimes even return power to the grid.

People who hesitate to adopt EVs could be reassured by real-time data on costs and the availability of charging points.

Smart mobility applications can help residents pick modes of transport, including public transit and shared schemes, with more awareness about lowering emissions.

Smart mobility applications can help residents pick modes of transport, including public transit and shared schemes, with more awareness about lowering emissions.

In Lathi, Finland, a mobile app shows the different transport options available and their respective carbon emissions. Virtual credits awarded for a low footprint can then be used to purchase city services and products.

Standards for climate-safe cities

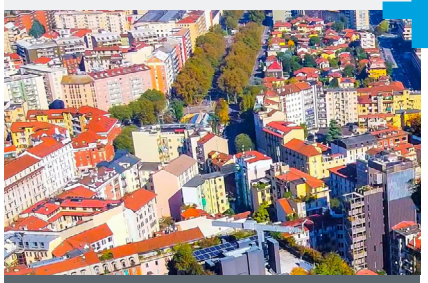
Harmonized international standards can enable the interoperability of smart energy solutions as well as ensure data privacy, grid stability and cybersecurity, the IEA report affirms.

The International Telecommunication Union (ITU), the International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC) already work together closely on standards development through their joint smart city task force.

Innovators aiming for system-level harmonization can look to smart city standards like ITU Y.4459, "Digital entity architecture framework for Internet of Things interoperability", developed by ITU-T Study Group 20 (Internet of Things and smart cities and communities).

Key Performance Indicators for Smart Sustainable Cities – prepared by the United for Smart Sustainable Cities Initiative based on an ITU standard aligned with UN Sustainable Development Goals (ITU Y.4903/L.1603) – have set a benchmark for best practices and provide a practical framework to assess each city's progress towards net-zero emissions and digital transformation.

Learn more about ITU's activities on smart sustainable cities here.



Empowering cities for a net zero future

Resilient, smart, sustainable urban energy systems

Read the International Energy Agency 2021 report to understand how cities can be key to a net-zero emissions future as digitalization opens up a range of new opportunities.

Boosting energy efficiency through smart grids

ITU has helped set energy efficiency and emission control standards for information and communication technologies (ICTs) and has outlined how smart grids can help build more efficient energy systems and reduce carbon emissions.

Read more in the report.

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8 DECENT WORK AND ECONOMIC GROWTH

Celebrating tech SME innovation

ITU Digital World 2021

UN

Technology creates new jobs, enables resilient work and commerce, and stimulates wider social and economic development. ITU's Digital Innovation Framework helps countries, cities and other communities and systems accelerate their digital transformation, stimulate ICT-centric innovative entrepreneurship, and foster vibrant small and medium enterprises (SMEs).

Read about winning solutions pitched by creative tech SMEs – small and medium-sized enterprises – at the telecom conference of the International Telecommunication Union (ITU). All successful applicants – striving for on-the-ground social impact through tech innovation – were recognized at the ITU Digital World 2021 SME Awards.

Read the full article.

Measuring digital development

Facts and figures 2021

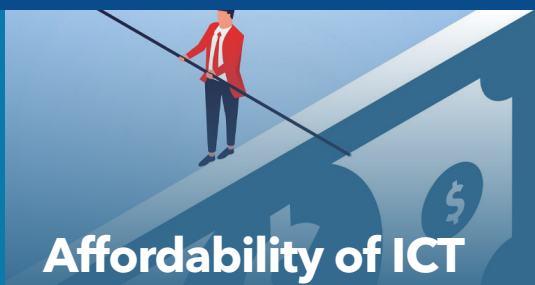
Mobile network coverage

→ **95%** of the world's population within range of a mobile broadband signal

⚠ **Blind spots** remain

International bandwidth usage

→ continues growing strongly



Affordability of ICT services

→ services became less affordable in 2021

Mobile cellular subscriptions

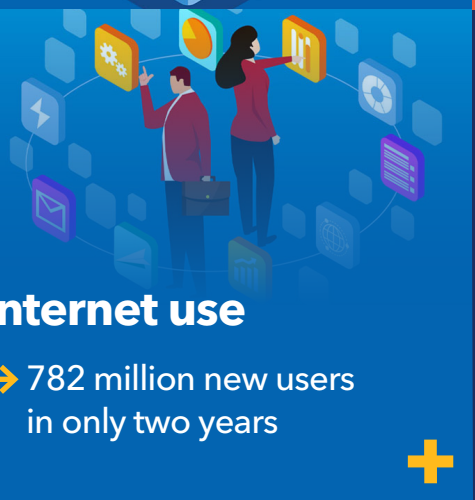
→ rising to a record 110 subscriptions per 100 inhabitants globally

4.9 billion
online

2.9 billion
offline

Fixed telephony

→ continues its steady decline, with 11 subscriptions per 100 inhabitants globally



Internet use

→ 782 million new users in only two years

Young people

→ **1.24** times more likely to be connected than the rest of the population

Urban-rural divide

→ share of Internet users in urban areas **2x** higher than in rural areas

→ Watch summary video

→ Download full report

Source: ITU (2021), *Measuring digital development: Facts and figures 2021*


Shutterstock

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

New FM frequencies to expand radio's reach in Africa

Together with international radiocommunication experts, African countries have identified new frequencies between 87.5 megahertz (MHz) and 108 MHz to expand FM (frequency modulation) radio broadcasting services across the continent.

The newly coordinated frequencies are the outcome of the two-year GE84 Plan optimization project for Africa, jointly coordinated by the International Telecommunication Union (ITU) and the African Telecommunications Union (ATU), with collaborative support from 50 African countries.


UN

Experts identify frequencies in the 87.5–108 MHz band to boost broadcasting across the continent.

"The successful completion of this project is a major milestone for radio broadcasting in Africa," said ITU Secretary-General Houlin Zhao. "Access to information through technologies such as radio broadcasting is vital to achieving the United Nations 2030 Agenda for Sustainable Development. ITU is proud of this fruitful partnership with the African Telecommunications Union which will reinforce broadcast radio's reach across Africa."

ATU Secretary General John Omo said: "We are delighted that the outcome of this project opens the possibility for new channels to help secure the long-term sustainability of radio broadcasting in Africa."

> *"Access to information through technologies such as radio broadcasting is vital to achieving the United Nations 2030 Agenda for Sustainable Development."*
>
> Houlin Zhao
> ITU Secretary-General

About the GE84 Plan optimization project

The GE84 Plan relates to the use of the band 87.5–108 MHz for FM sound broadcasting in Region 1 and part of Region 3 as established in the Regional Agreement, Geneva, 1984.

Launched in East London, South Africa, in July 2019, the GE84 Plan optimization project aimed to ensure compatibility among existing and new broadcasting frequency assignments in the 87.5–108 MHz band and facilitate the eventual introduction of digital sound broadcasting in Africa.

The project also carried out a regional FM compatibility analysis, using software tools developed by ITU's Radiocommunication Bureau as the basis for further discussions and coordination between national and regional administrations.

The project brought together national broadcasters and regulators from across Africa and neighbouring regions to focus on various aspects of spectrum coordination, including steps countries can take to avoid harmful interference as FM services expand.

Coordination meetings held virtually

In a series of three frequency planning and coordination meetings, participants focused on the process needed to make sure national frequency plans are compatible for smooth FM broadcasting in the 87.5–108 MHz band.

Participants also agreed on general criteria for assignable channels, such as acceptable levels of interfering signals, how to share information, optimal numbers of channels in any given area, polarization discrimination, and proposed timelines for frequency assignment and planning.

The final session gathered more than 200 participants from 45 African countries, as well as 11 countries bordering Africa.

"Radio broadcasting is still the most affordable, reliable and accessible way to disseminate information in Africa," said Mario Maniewicz, Director of the ITU Radiocommunication Bureau.

"Countries must now make good on their commitment to assign more frequencies for FM broadcasting. People across the continent need access to this vital communication tool," he added, inviting African governments, regulators and service providers to make the most of the newly identified channels.

"Radio still reigns as king of the African media industry," added Omo. "The result of this project will contribute to creating immense social-economic value in Africa and beyond."

Learn more, including future steps, on the GE84 Plan optimization for Africa website.

> *"Radio broadcasting is still the most affordable, reliable and accessible way to disseminate information in Africa."*
>
> Mario Maniewicz
>
> Director, ITU Radiocommunication Bureau

> *"Radio still reigns as king of the African media industry."*
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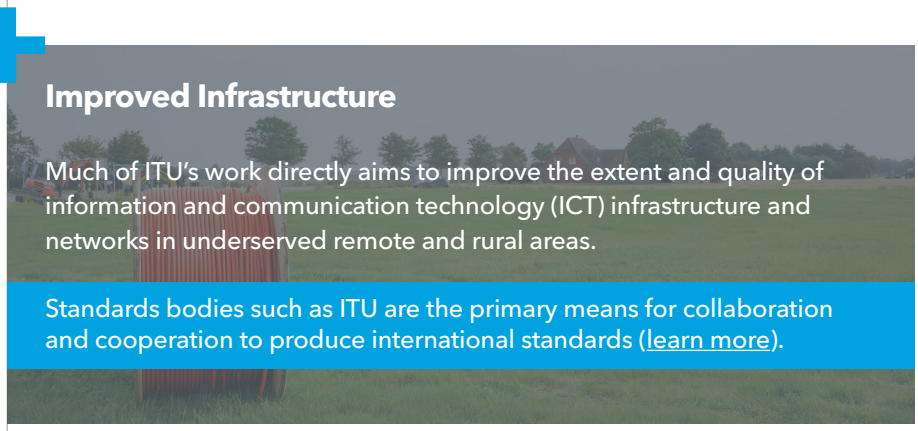
> John Omo
>
> Secretary General, ATU



Improved Infrastructure

Much of ITU's work directly aims to improve the extent and quality of information and communication technology (ICT) infrastructure and networks in underserved remote and rural areas.

Standards bodies such as ITU are the primary means for collaboration and cooperation to produce international standards (learn more).

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Preparing for the next World Radiocommunication Conference

Regulators, regional and international organizations, operators, manufacturers, and radiocommunication experts from around the world met in early December 2021 to review preparations for the next World Radiocommunication Conference (WRC-23).

In this first of three inter-regional workshops, hosted virtually by the International Telecommunication Union (ITU), participants focused on the need for new frequency allocations, associated regulatory frameworks and related implications of the world's accelerating digital transformation.

Government and industry representatives worked together closely to review key preparatory issues for the global conference, set to take place in the United Arab Emirates from 20 November to 15 December 2023.

9

ITUWRC

World Radiocommunication Conferences (WRC) are held every three to four years.

It is the job of a WRC to review, and, if necessary, revise the Radio Regulations, the international treaty governing the use of the radio-frequency spectrum and the geostationary-satellite and non-geostationary-satellite orbits.

Visit the WRC-23 website.

"WRC-23 profoundly influences future developments of new and emerging technologies, which in turn can accelerate digital transformation in line with sustainable development," said ITU Secretary-General Houlin Zhao. "The efficient sharing of radio frequency spectrum is at the heart of global efforts to ensure the benefits of digital technologies reach everyone, everywhere."

> *"WRC-23 profoundly influences future developments of new and emerging technologies, which in turn can accelerate digital transformation in line with sustainable development."*
>
> Houlin Zhao
>
> ITU Secretary-General

Building regional and global consensus

The multi-stakeholder review of WRC-23 agenda items spanned policy and technology challenges and associated regulatory questions, from international mobile telecommunication and mobile broadband to crucial frequency allocations for broadcasting, aeronautical, maritime, satellite, and science services.

In addition to exchanging views on the preparatory studies and priorities for WRC-23, participants reviewed drafts of preliminary positions from Regional Telecommunication Organizations and other concerned entities.

"Despite new restrictions brought about by the COVID-19 pandemic, ITU members continue to show their strong commitment to the WRC preparatory process by participating in our virtual meetings," said Mario Maniewicz, Director of the ITU Radiocommunication Bureau.

"The spirit of international cooperation underpins the ITU tradition of consensus building. Over the years, the multi-stakeholder preparatory process has proven a powerful and increasingly successful mechanism for reaching agreements within and between various regional groups."

> *"Over the years, the multi-stakeholder preparatory process has proven a powerful and increasingly successful mechanism for reaching agreements within and between various regional groups."*
>
> Mario Maniewicz
>
> Director, ITU Radiocommunication Bureau

More than 620 participants attended the workshop including 448 participants from 70 Member States, 126 Sector Members, and representatives from international organizations, telecommunications industry, associations and academia.

Gathering regional insights

The workshop highlighted the regional preparations for the Second Session of the Conference Preparatory Meeting (CPM23-2) and the next Radiocommunication Assembly (RA-23), as well as WRC-23.

Roundtable discussions on draft preliminary common views and positions benefitted from the participation of main regional groups, including: Asia-Pacific Telecommunity; Arab Spectrum Management Group; African Telecommunications Union; European Conference of Postal and Telecommunications Administrations; Inter-American Telecommunication Commission; and Regional Commonwealth in the Field of Communications.

Other United Nations agencies, international organizations, and industry stakeholders also engaged in collaborative discussions on the international regulatory framework for the frequency spectrum that is used by all radiocommunication services worldwide.

Update on the Network of Women for WRC-23

The Inter-Regional Workshop included the first activity session of the Network of Women for WRC-23 (NOW4WRC23), an ITU initiative to promote gender equality, equity and parity in the Radiocommunication Sector (ITU-R) and to encourage and empower more women to actively participate in the conference.

The session included a roundtable discussion with the Regional Co-Chairs of the NOW4WRC23. Discussions focused on the Network's global and regional activities, and its key priorities including increasing the number of women in leadership roles at WRC-23, calling for more NOW4WRC23 mentors, addressing the impact of COVID-19 pandemic on women's participation in the activities of the Radiocommunication Sector and ensuring their continued participation when physical meetings resume.

About the WRC preparatory process

Preparing for World Radiocommunication Conferences involves extensive studies and discussions among a variety of stakeholders, from governments, regulatory authorities, network operators and equipment suppliers to industry forums and spectrum users at national, regional and global levels.

The multi-stakeholder approach enables consensus-building, essential to ensure the WRC fosters a stable, predictable, and universally applied regulatory environment.

This in turn helps ensure current and future investments in radiocommunication services that are free of harmful interference.

Visit the inter-regional workshop website.

Frequency spectrum is used by all radiocommunication services worldwide.

The ITU Radio Regulations

The 2020 edition is free for download.

WRC-23 Booklet:
Agenda and relevant Resolutions

Access to download.

Connecting small islands

9

ITU treats small island developing states (SIDS) as a high priority, recognizing their specific challenges – from expanding access to affordable and reliable connectivity to promoting digital literacy.

ITU has provided SIDS with highly targeted assistance in areas ranging from market regulatory reforms, information and communication technology (ICT) infrastructure and spectrum management, to emergency telecommunications and disaster response, cybersecurity, and climate change adaptation and mitigation.

Many SIDS rely on satellite connections, and a small domestic market does not offer industry enough return on investment – nothing like large urban areas. Industry, therefore, needs to be incentivized and regulatory frameworks need to be harmonized.

Read the full article.

Smart Islands initiative

Smart Islands is a new initiative undertaken by ITU since the start of the global pandemic.

Learn more.

Inclusion in a digital world

Everyone should be able to take an active part in our increasingly digital world – regardless of ability, age, gender, location or any other factor.

The International Telecommunication Union (ITU), committed to connecting the world, strives to make this vision a reality.

10 REDUCED INEQUALITIES

Ageing in a digital world – from vulnerable to valuable

An ITU report raises awareness on the importance of being prepared to respond to the needs and requirements of ageing populations. It aims to help ITU members and other stakeholders understand digital opportunities and take advantage of new possibilities.

Download the report.

Standards for including persons with disabilities

An ITU resolution adopted at the 2008 World Telecommunication Standardization Assembly was to ensure that all new ITU standards would account for the needs of persons with disabilities, right from the design stage. Tech, standards and collaboration can improve inclusion for persons with disabilities.

Read the full article.

Technology Trends 2021: Assistive technology

ITU contributed to a World Intellectual Property Organization (WIPO) publication dedicated to assistive technology. Using a scale of technology readiness, it reveals which of the identified assistive products filed for patent protection are closest to commercialization.

Download the report.

Public health from a marginalized perspective

Artificial intelligence (AI) will lead to great advances in public health. However, according to a PhD student, unless we act to ensure social equity in AI systems, these benefits will not be equitably distributed across social groups.

Watch the AI for Good webinar.

Satellite imagery shows the Hunga Tonga-Hunga Ha'apai volcano on 6 January 2022, before the eruption on 14 January 2022 in Hunga Tonga-Hunga Ha'apai Islands, Tonga.

Maxar via Getty Images

11 SUSTAINABLE CITIES AND COMMUNITIES

UN

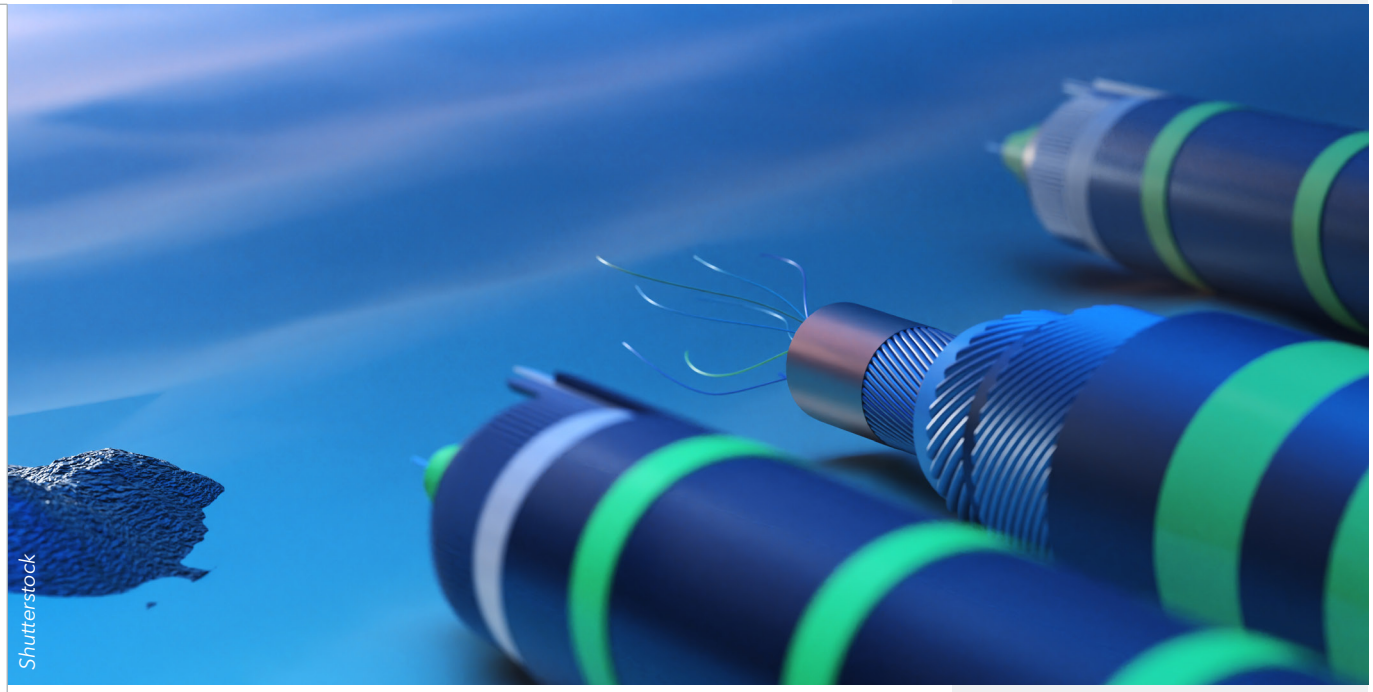
Restoring connectivity in Tonga: Collaborative disaster response

In January 2022 the world shared unprecedented satellite images and video of an underwater volcanic eruption that had happened just the day before near the island nation of Tonga.

Reported as "likely the biggest [eruption] recorded anywhere on the planet in more than 30 years", the 14 January event resulted in shockwaves recorded thousands of kilometres away, from New Zealand to Japan, and as far as Peru and the west coast of the United States.

While the satellite images circulated the next day, it took time for the world to see and understand the extent of the damage in Tonga itself. Among the eruption's devastating effects, the main undersea cable connecting the island nation to the rest of the world broke in at least two places. In Tonga's case, this has been the only cable connecting the country to the rest of the world.

As connectivity slowly returns to Tonga, the critical role of digital technologies in modern societies – and especially that of satellite communication – cannot be overstated.


Shutterstock

Mobilizing immediate response

The International Telecommunication Union (ITU) received its first request to assist the country via its regional office for Asia and the Pacific, through a satellite phone call from Tonga's Ministry of Meteorology, Energy, Information, Disaster Management, Environment, Climate Change and Communications (MEIDECC).

In cooperation with the United Nations Resident Coordinator Office and Emergency Telecommunications Cluster, ITU worked with MEIDECC to support Tonga's government with emergency communications capabilities.

"ITU, Intelsat and Spark NZ have provided temporary satellite bandwidth and equipment, allowing essential services to resume operation," said Paula Ma'u, Chief Executive at MEIDECC. "The Tonga Meteorological Service now has a consistent connection, retrieving satellite data from international counterparts that allows them to monitor the volcano as well as other meteorological activities. Our team will continue connecting terminals by hand to gain more bandwidth for government services such as the Geology Department and the National Emergency Management Office, as well as to reach the outer islands."

> *"ITU, Intelsat and Spark NZ have provided temporary satellite bandwidth and equipment, allowing essential services to resume operation."*
>
> Paula Ma'u
> Chief Executive, MEIDECC

Response measures had to consider the challenges of travel due to the COVID-19 pandemic, which had yet to reach Tonga at that point. Building on recent experience in Vanuatu, in response to Cyclone Harold in 2020, the partners devised a multi-pronged strategy:

This included:

- Repurposing existing equipment in Tonga from an earlier ITU project to enhance emergency telecommunication capacity in the Pacific.
- Coordinating with satellite operators to provide bandwidth for disaster response.
- Providing satellite phones to MEIDECC.
- Collaborating with the UN-facilitated Emergency Telecommunications Cluster to provide regular updates to the Disaster Connectivity Map, an online mapping tool that monitors and identifies connectivity gaps and outages after disasters strike.

Restoring connectivity

Reconnecting Tonga proved a formidable challenge, due to the need for a contactless disaster response approach to reduce risk of COVID-19 transmission.

But thanks to MEIDECC's collaboration with satellite operators Intelsat and Spark, and technical support from local operator Wantok, on-the-ground response teams promptly located a Ku-band (12–18 gigahertz) terminal at the weather service office at Tonga's Fua'amotu International Airport. The terminal was then realigned to connect with Intelsat's Horizon 3E satellite, which could finally beam much-needed Internet access to the ash-covered archipelago.

"Restoring communications to Tonga is vital for monitoring the volcano and critical to support humanitarian aid organizations as they provide much needed medical assistance and emergency supplies to Tongan citizens," said Intelsat CEO Stephen Spengler.

"Tonga still has challenges ahead. We will continue to work closely with ITU, MEIDECC and Spark NZ to support the community as it recovers from the aftermath of this devastation."

> *"Restoring communications to Tonga is vital for monitoring the volcano and critical to support humanitarian aid organizations."*
>
> Stephen Spengler
> CEO, Intelsat

Tonga would also receive Iridium satellite phones with free connectivity, and free SIM cards, shipped in through Brisbane with the help of Australia's Department of Foreign Affairs and Trade.

"Iridium phones and push-to-talk (PTT) handsets are trusted by first responders and emergency management personnel around the world, and in the days following the eruption, we saw a tenfold increase in devices deployed to Tonga to assist with response efforts," said Tatiana Lawrence, International and Regulatory Vice President at Iridium.

"We're proud to provide additional Iridium connectivity to help ensure response efforts stay highly coordinated and aid continues to be delivered as quickly as possible."

Takeaways from Tonga assistance

As connectivity slowly returns to Tonga, the critical role of digital technologies in modern societies – and especially that of satellite communication – cannot be overstated.

The response to start restoring Tonga's links to the outside world has involved coordination among different organizations at all levels, from national governments to local operators, international satellite operators and UN organizations.

"Only through cooperation and collaboration can we continue to work towards ensuring resilient connectivity for all," said Atsuko Okuda, ITU Regional Director for Asia and the Pacific.

> *"Only through cooperation and collaboration can we continue to work towards ensuring resilient connectivity for all."*
>
> Atsuko Okuda
>
> ITU Regional Director for Asia and the Pacific

Thanks to the support from ITU partner Iridium Communications, ITU dispatched Iridium phones to Tonga to support the work of disaster management teams and ensure communications with outer islands.

Smart sustainable cities

11

More than half of the world's people live in cities. By 2050, it will be nearly seven in ten.

A smart sustainable city is innovative. It uses technology to improve people's quality of life, make urban operations and services more efficient, and boost its competitiveness, while ensuring that it meets the economic, social, environmental and cultural needs of present and future generations.

Smart city standards

Innovators aiming for system-level harmonization can look to smart city standards like ITU Y.4459, "Digital entity architecture framework for Internet of Things interoperability", developed by ITU-T Study Group 20 (Internet of Things and smart cities and communities).

Key Performance Indicators for Smart Sustainable Cities – prepared by the United for Smart Sustainable Cities Initiative based on an ITU standard aligned with UN Sustainable Development Goals (ITU Y.4903/L.1603) – have set a benchmark for best practices and provide a practical framework to assess each city's progress towards net-zero emissions and digital transformation.

Learn more about ITU's activities on smart sustainable cities here.

Report on digital solutions for integrated city management and uses cases

Smart city platforms are becoming a new digital urban infrastructure supporting new and additional needs, while also assisting with the efforts of addressing the Sustainable Development Goal targets.

Download the report.

Smart sustainable cities

Watch the video.

Global e-Waste Monitor: A policy toolkit

The world produced approximately 53.6 million metric tons (Mt) of e-waste – or 7.3 kg per capita – in 2019, not including a rising share of solar photovoltaic (PV) panels. Global e-waste generation is expected to exceed 74 Mt in 2030. Thus, the global quantity of e-waste is increasing at an alarming rate of almost 2 Mt per year.

In response, the International Telecommunication Union (ITU) and the United Nations Institute for Training and Research (UNITAR) joined forces to form the Global E-waste Statistics Partnership, aiming to address the challenges of managing e-waste. The Statistics Partnership – building on the earlier Partnership on Measuring ICT for Development – produces comprehensive regional and *global e-Waste Monitors* to inform policymakers on key e-waste statistics. The *Monitors* are a useful resource for policymakers, providing a comprehensive update of global e-waste statistics.

The growth of global e-waste since 2014

Access the Publication.
Source: Global e-Waste Monitor (page 23)

Tackling e-waste with ITU standards

ITU is developing global strategies, standards and policies that offer guidelines for the sustainable management of e-waste.

ITU standards can help us to ensure that e-waste does not come at the cost of our health and environment. Standards are critical to the mission of minimizing e-waste globally; they help reduce development time and costs, establish common understanding on key terminologies, and lower barriers to entry for innovators and key stakeholders.

Read the full article.

E-waste policy to inspire a continent

Find out how ITU is supporting Namibia in finding policy solutions, including extended producer responsibility, to the e-waste problem.

Watch the video.

Digital solutions for a circular electronics value chain

More and more countries are recognizing stakeholder consultation and producer responsibility as key principles of e-waste policy and regulation. Connectivity, transparency and accountability must all be heightened to ensure effective, fair, and economically viable e-waste management.

Digital platforms can even accelerate moves towards circularity in the electronics value chain.

Read the full article.

Technology for Good #14: E-waste – using, repairing and recycling

Generation Connect

Global E-waste Iconathon

Young people aged 18–24 are invited to participate and design a universal icon to symbolize the **take-back and collection** of e-waste

Learn more

Partners:

step
solving the e-waste problem

weeeforum

European Space Agency via Wikimedia Commons

13 CLIMATE ACTION

Copernicus and climate policy

By Andrus Meiner, Head of Geospatial information Services, and **Chris Steenmans**, Head of Data and Information Services, European Environment Agency

The European Environment Agency (EEA) is an agency of the European Union established in 1990 and located in Copenhagen.

EEA's main task is to provide sound, independent information on the environment and act as a major information source for those involved in developing, adopting, implementing and evaluating environmental policy, and also the general public.

Supported by the European Environment Information and Observation Network (Eionet), around 350 organizations across Europe through which environmental-related data and information are collected and disseminated, the agency itself has 32 member countries.

UN

"EEA helps achieve significant and measurable improvements in Europe's environment and supports sustainable development."

Andrus Meiner, Chris Steenmans

EEA's mandate is to help the European Community and member and cooperating countries make informed decisions on improving the environment, integrating environmental considerations into economic policies and moving towards sustainability. EEA also coordinates Eionet.

State and outlook of the environment in Europe

EEA helps achieve significant and measurable improvements in Europe's environment and supports sustainable development, particularly by regularly producing the State and Outlook of Environment in Europe report.

In December 2019, the EEA presented its European Environment – State and Outlook 2020 (SOER) report, which detailed the unprecedented scale and urgency of Europe's current environmental, climate and sustainability challenges.

Europe will not achieve its 2030 goals without urgent action during the next 10 years to address the alarming rate of biodiversity loss, increasing impacts of climate change and the overconsumption of natural resources.

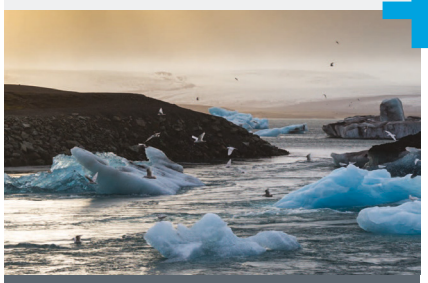
Many persistent challenges rooted in the past are coupled and amplified by emerging and systemic issues, associated with uncertainty, ambiguity, and conflicts of interest.

The European Green Deal

The European Green Deal (EGD) adopted by the European Commission in December 2019, is the European Union's response to these systemic challenges. It provides a framework for ambitious actions and measures to position Europe firmly onto a path towards sustainability, demonstrating that sustainability and prosperity can be achieved together.

The EGD acknowledges EEA's work in highlighting the extent and urgency of the challenges and sets out a roadmap of around 50 key policies and measures needed to address them.

Amongst the measures proposed, the EGD also suggested the adoption of a General Union Environment Action Programme to 2030 (8th EAP) to help ensure the implementation, enforcement and effective delivery of environmental and climate policies and legislation and also introduced a new monitoring mechanism. EEA and Eionet will play a key role in supporting these actions under the EGD and in the implementation of the 8th EAP.



European Environment – State and Outlook 2020

Read the EEA report highlighting the scale and urgency of Europe's current environmental, climate and sustainability challenges.

Read the EEA report.

"Europe will not achieve its 2030 goals without urgent action during the next 10 years to address the alarming rate of biodiversity loss."

Andrus Meiner,
Chris Steenmans

The new EEA-Eionet Strategy: 2021–2030

A new EEA-Eionet Strategy 2021–2030 has been developed, underlining the role of data and understanding data in the pivotal decade to come.

It sets out how EEA and Eionet will work together with other knowledge providers at the European level and within Eionet countries in support of Europe's environment and climate ambitions.

The European Commission's proposal for an 8th EAP presents enabling conditions to achieve the programme's priority objectives.

Among these enabling conditions is a requirement for "harnessing the potential of digital and data technologies to support environment policy while minimizing their environmental footprint".

Specifically, EEA is requested to support the Commission in improving the availability and relevance of data and knowledge, among others, by "integrating data on environmental, social and economic impacts, and exploiting fully other available data, such as those delivered by Copernicus".

The Copernicus Programme

The Copernicus Programme was established by a European Union (EU) regulation in 2014 and supports EU environment and climate policies by developing information services based on satellite and in situ data.

This includes the Copernicus Marine Environment Monitoring Service (CMEMS), the Copernicus Land Monitoring Services (CLMS), the Copernicus Climate Change Service (C3S), the Copernicus Atmosphere monitoring service (CAMS), and for specific cases, the Copernicus Emergency Management service (CEMS).

The same regulation established a formal EEA commitment, that is re-confirmed by the EU space programme and a new regulation for 2021–2027. It defines a new EEA contribution agreement with the European Commission to implement a land monitoring service and coordinate the Copernicus in situ component.

EEA also continues to build on the other above-mentioned services for developing an air quality index, indicators for monitoring terrestrial and marine ecosystems, an operating climate adapt platform and many other use cases.

The Copernicus Programme was established by a European Union regulation in 2014.

While the implementation of Copernicus services has advanced enormously, it has become increasingly urgent to support the users and uptake of Copernicus services and their data sets.

User uptake of Copernicus services by EEA and Eionet is as explicitly mentioned in the EEA-Eionet Strategy 2021–2030. The new EU space regulation also calls for a combined use of different Copernicus services which will require cooperation and coordination among EEA-Eionet actors that relate to Copernicus.

New policy initiatives set up through the EGD include new requests for land-related information in the domains of biodiversity and ecosystems, climate change mitigation and adaptation, as well as zero-pollution ambition and relevant aspects of the circular economy (e.g. a sustainably built environment).

At a global level, land degradation is a part of the Sustainable Development goals (SDGs). SDG target 15.3 on land use information underpins several other goals, such as SDG 11 on sustainable cities and communities.

The link between EGD priorities and CLMS outputs is explicitly stated in the 8th EAP. Therefore, EEA is currently setting up a policy relevant information platform that provides user-friendly and transparent access tools for retrieving data and information based on Copernicus Land Monitoring Services products.

The new EEA-Eionet Strategy 2021–2030 highlights knowledge backed by data comprised of assessments, indicators and progress to target assessments, built on the largest regular collection of data in Europe on environment and climate topics. One of the strategic objectives foresees making full use of the potential of data, technology and digitalization to embrace new technologies, big data, artificial intelligence and Earth observation (Copernicus) to support decision-making.

“It has become increasingly urgent to support the users and uptake of Copernicus services and their data sets.”

Andrus Meiner,
Chris Steenmans

“One of the strategic objectives foresees making full use of the potential of data, technology and digitalization to embrace new technologies, big data, artificial intelligence and Earth observation to support decision-making.”

Andrus Meiner,
Chris Steenmans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Reimagine, recreate, restore

By Malcolm Johnson, ITU Deputy Secretary-General

The last United Nations Climate Change Conference, COP26, underscored the need to redouble global efforts to cut emissions and accelerate sustainable development. With ecosystems threatened by day-to-day human activities, World Environment Day on 5 June called on people and institutions to "reimagine, recreate and restore".

The International Telecommunication Union (ITU) has been facilitating a sustainable digital transformation on various fronts. One of these is the development of inclusive international standards.

Standards can help countries, cities, the information and communication technology (ICT) sector and other stakeholders to reduce their environmental footprint and achieve the United Nations Sustainable Development Goals (SDGs).

13

> *"Standards can help countries, cities, the ICT sector and other stakeholders to reduce their environmental footprint and achieve the United Nations Sustainable Development Goals."*
>
> Malcolm Johnson

Towards sustainable digital transformation

Research indicates that ICT solutions can potentially reduce global greenhouse gas emissions by up to 15 per cent. These innovations present possibilities to reduce emissions across a range of smart services, from energy grids to buildings, work, travel and agriculture. For example, the ITU report *Frontier technologies to protect the environment and tackle climate change* showcases how Dubai implemented an Internet of Things (IoT)-based IPv6 network, which includes 200 000 smart meter devices and a modernized energy grid. The IoT network can monitor and detect changes in energy use, enable communication in real time between the utility and citizens, and optimize energy supply and demand. This has helped Dubai to reduce electricity and water use, make more efficient use of clean energy and encourage the use of electric vehicles.

Mitigating externalities

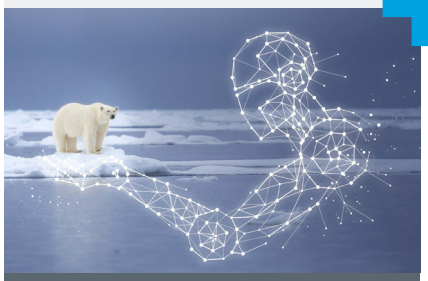
The global discourse of digital transformation often neglects the environmental cost of digital technologies, from their manufacture, use through to their end of life and disposal. According to some reports, the ICT sector currently accounts for roughly 1.4 per cent of overall global emissions and uses about 3.6 per cent of global electricity to operate. Meanwhile, digital transformation continues to advance at a blistering pace and the global pandemic has only further accelerated this process.

To fully realize the potential of digital technologies in driving global sustainability efforts such as achieving the SDGs and the Paris Agreement, we must take decisive actions.

That means not just limiting the emissions of the ICT sector, but also guiding the ICT sector to reach carbon neutrality by adopting effective environmental standards and shifting towards circular economy principles.

Standards can help

In 2020, ITU-T Study Group 5 (Environment, climate change and circular economy) delivered the standard ITU L.1470, which provides operators of mobile networks, fixed networks and datacentres with guidance to set science-based targets (SBTs), approved by the science-based target initiative (SBTi), to reduce GHG emissions at a rate that is in line with climate targets set in the 1.5°C scenario of the Paris Agreement.



Frontier technologies to protect the environment and tackle climate change

Read the ITU report.

Learn more about the work of ITU-T Study Group 5 "Environment, Climate Change and Circular Economy".

More about ITU L.1470 in the report Guidance for ICT Companies Setting Science Based Targets.

Two new standards connected to sustainable digital transformation: ITU L.1471 takes a pragmatic approach to define what "net zero" means in the ICT sector, and ITU L.1050 provides a methodology for assessing the environmental impacts of different network architectures.

ITU standards such as these provide authoritative guidance to put the ICT sector on a decarbonization pathway towards net zero emissions based on circular economy principles.

The way forward

Looking ahead, ITU will continue to support the ICT sector's circular economy transition. For example, ITU-T Study Group 5 is developing a new standard that will define the requirements of a global digital sustainable product passport for circular economy. The concept of a global digital passport has recently generated significant attention, particularly at the European level.

ITU is organizing a series of dialogues around the world to promote sustainable digital transformation, in addition to supporting key initiatives that focus on connecting digital technologies with environmental sustainability, such as the Coalition for Digital Environmental Sustainability (CODES).

ITU is a member of the UN E-waste Coalition, the Circular Electronics Partnership, the Solving the E-waste Problem (StEP) initiative, and a founding member of the Global E-waste Statistics Partnership.

Through its partnership with the Global e-Sustainability Initiative (GeSI), ITU is supporting the Digital with Purpose movement to catalyze collective action across the ICT sector to accelerate their efforts in pursuit of a more sustainable strategy to meeting the Paris Agreement and United Nation Sustainability Goals by 2030. It is also working with university students on a capstone research project on digital technology solutions for climate change action.

Find more information on ITU environment, climate change, and circular economy activities here.

How observing Earth from space protects our planet

The World Meteorological Organization (WMO) Integrated Global Observing System, encompassing both surface and space-based observations, enhances the understanding of our Earth system and facilitates the production of weather and climate services and products, providing more and better observations for gathering information that is vital for the global community.

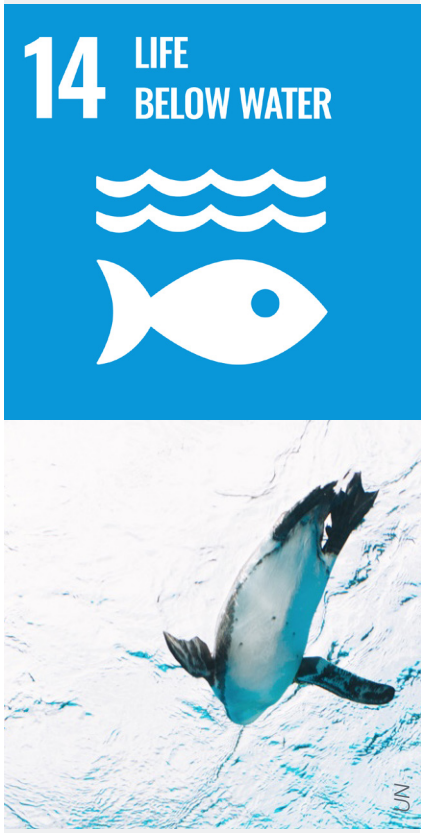
Read full article.

Tech helps protect ocean lives

Information and communication technologies (ICTs) are being extensively used to monitor the changing marine environment, such as the movement of ice flows and glaciers. Buoys can be equipped with remote monitoring to monitor changing conditions at sea, including salinity levels of water via buoys.

Sensor networks and radio-frequency identification (RFID) chips can be used to learn about the migratory patterns and needs of endangered sea animals like whales and dolphins.

Read more about how technology helps protect ocean life.



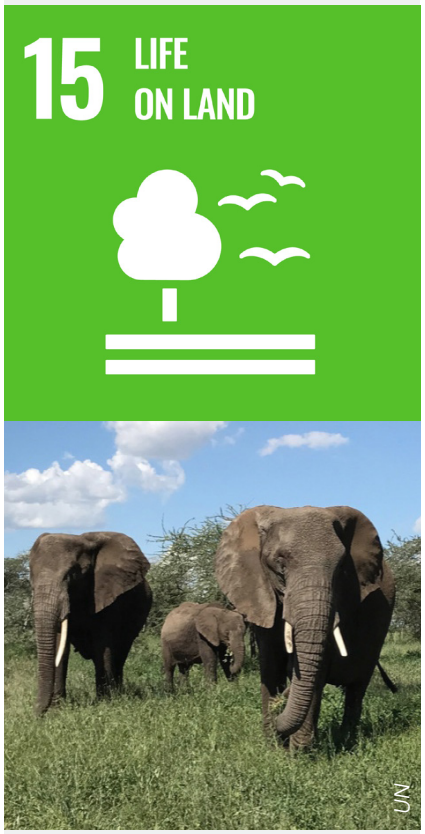
Connected conversation: Protecting natural habitats

Digital technologies can be used to identify, monitor, photograph and track wildlife populations. Sensor networks and RFID chips can be used to protect endangered animals, such as lions, elephants and tigers, to help learn more about their migratory patterns and needs for protection.

Meteorological radar networks are the main line of defense in a disaster warning strategy against loss of life and property in flash flood or severe storm events.

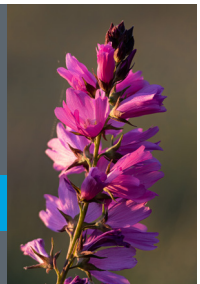
Read about how observing Earth from space can protect our planet and life on land from disaster.

Explore how technology can be used to protect natural habits.



Recovering key species for ecosystem restoration

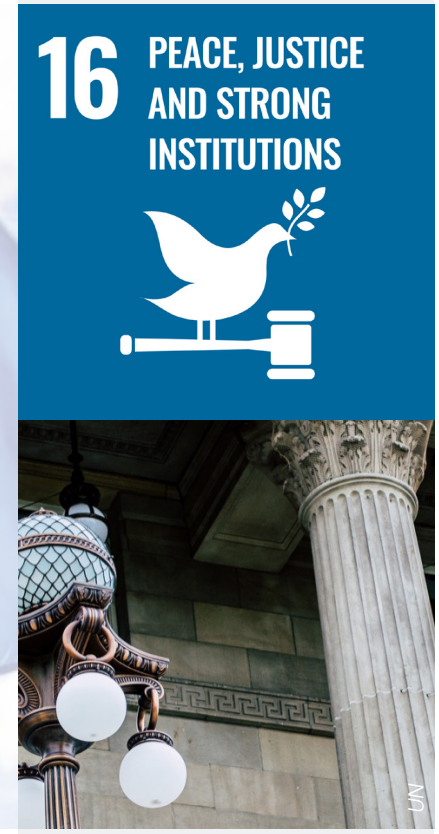
WSIS TalkX: World Wildlife Day



Digital cooperation for a fairer and more peaceful world

The potential of digital technologies to help make our world fairer and more peaceful is getting fresh attention across the United Nations (UN) as the venerated institution celebrated 75 years since the United Nations Charter came into force. A report released by UN Secretary-General Antonio Guterres proposes an agenda to act on 12 commitments in the Declaration on the commemoration of the 75th Anniversary. One of those commitments is to improve digital cooperation.

Read the full article.



Technology and peace

The use of digital technologies can provide information in advance to understand how conflicts are evolving to raise awareness and make informed decisions to respond and mitigate the conflict risks. Information and communication technologies (ICTs) also create opportunities for innovation through the use of existing and new digital solutions to promote peace.

Use of satellite imagery can map conflicts and provide timely information for decision making, however, technical and analytical capacities require digital capacity development. The digital revolution is contributing to socio-economic transformation, raising awareness and providing information and data for decision-making in conflict and post-conflict countries.

Watch the WSIS TalkX on the use of ICTs for peace co-organized by ITU and the United Nations Technology Bank for Least Developing Countries.


Ron Lach via Pexels

17 PARTNERSHIPS FOR THE GOALS

Celebrating radio's trust and accessibility

By Mario Maniewicz, Director,
ITU Radiocommunication Bureau

With more than a century of history behind it, the humble radio remains one of the most trusted and widely used media for communication around the world.

Radio continues to provide quick and affordable access to information in real time, along with professional coverage about matters of public interest, opportunities for distance learning and, of course, entertainment.

Accessible anywhere and anytime, radio reaches a broad and diverse audience. Research in both developing and developed countries points to radio as a powerful and trusted source of information.


UN

> *"Radio continues to provide quick and affordable access to information in real time."*
>
> Mario Maniewicz

The 2022 edition of World Radio Day, celebrated on 13 February, was therefore devoted to "Radio and Trust".

With the rising threat of fake news propagated over the Internet and social media platforms, people around the world are tuning back into radio more often, as a familiar, reliable news source. Besides those tangible benefits, radio helps its listeners feel less isolated and more connected to their community.

In times of emergency and disaster, radio broadcasting is one of the most powerful and effective ways of delivering early warnings and alerting the public. Timely, relevant, and practical information supports effective response measures and saves lives. For people directly affected, it comes as a vital form of humanitarian assistance.

During the COVID-19 pandemic, too, radio has kept people connected and entertained, ensured continuity in learning, helped fight misinformation, and disseminated critical health information.

Caring for the airwaves

This year marks 111 years of radio. Throughout this period, the International Telecommunication Union (ITU) has played a central role in advancing the medium worldwide, establishing and updating international regulations on the use of the radio-frequency spectrum and satellite orbits.

ITU is the custodian of the global treaty on spectrum management known as the Radio Regulations. Updated in a global conference roughly every four years, this treaty facilitates equitable access to and rational use of the radio spectrum, ensures the availability of frequencies provided for distress and safety purposes, and promotes interference-free operations of the myriad radiocommunication systems.

The Radio Regulations cover a wide range of radio services and systems, including fixed, and land, aeronautical, and maritime mobile radio services; fixed, mobile, aeronautical, and maritime satellite services; terrestrial and satellite-based radio (sound) and television broadcasting; radionavigation; meteorological monitoring; space research and Earth exploration-satellite services; as well as amateur radio services and radio astronomy. They also prescribe how radio equipment and systems must operate to ensure reliable coexistence among radio services of different administrations and to enable the most efficient utilization of today's increasingly crowded airwaves.

> *"In times of emergency and disaster, radio broadcasting is one of the most powerful and effective ways of delivering early warnings and alerting the public."*

Listen to the podcast to learn more about World Radio Day and the importance of radio.

Inclusion and access

ITU and its membership produce technical standards for radiocommunication, referred to as ITU–R Recommendations, that support and encourage the advancement of each country's radio broadcast system. Key examples range from transmission standards for FM (frequency modulation) sound broadcasting, systems for terrestrial digital sound broadcasting, and vehicular, portable, and fixed receivers, to the use of international radio for disaster relief (IRDR) frequencies for emergency broadcasts.

At ITU, we go the extra mile to provide guidance on how digital devices and technology can be made accessible to people living with disabilities. Digital societies and economies need to include everyone.

To ensure inclusion, the ITU Radiocommunication Sector conducts research and develops guidelines on accessible telecommunication and technologies, helping countries worldwide build inclusive digital societies.

> *"ITU and its membership produce technical standards for radiocommunication, referred to as ITU–R Recommendations, that support and encourage the advancement of each country's radio broadcast system."*

Trust and viability

In January, international radiocommunication experts, together with ITU, assisted African countries in identifying new frequencies between 87.5 megahertz (MHz) and 108 MHz, facilitating the expansion of FM radio broadcasting services across the continent.

The completion of the two-year GE84 Plan (read the article) optimization project for Africa, jointly coordinated by ITU and the African Telecommunications Union (ATU), comes as a major milestone for radio across the continent. The project's success helps to secure the long-term sustainability of African radio broadcasting and paves the way for the introduction of digital sound broadcasting in Africa.

> *"International radiocommunication experts, together with ITU, assisted African countries in identifying new frequencies."*

Accessible and affordable, radio can reach practically everyone, everywhere. Its loyal listeners include people in big cities, those in small towns and villages, those in rural communities and even those in the most isolated places on the planet.

Radio leaves no one behind!

> *"Accessible and affordable, radio can reach practically everyone, everywhere."*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Let's build consensus on how new tech should factor into our future

17

By Chaesub Lee, Director,
ITU Telecommunication Standardization Bureau

> *"International standards represent voluntary commitments to new ways of working together."*
>
> Chaesub Lee

International standards represent voluntary commitments to new ways of working together. Just as innovation can drive sustainable development, inclusive standardization processes can help to share the benefits of tech worldwide.

Each year on 14 October, organizations in the field around the globe mark World Standards Day, paying tribute to the many thousands of experts who work together year-round to develop international standards.

Last year marked the beginning of a multi-year awareness campaign focusing on how standardization can help to realize our "shared vision for a better world" embodied by the United Nations Sustainable Development Goals (SDGs).

On this occasion, the world's three leading standards bodies – the International Electrotechnical Commission (IEC), the International Organization for Standardization (ISO), and the International Telecommunication Union (ITU) – welcome you to join us in ensuring that standards contribute to a better life for all.

The three organizations also form a key partnership as the World Standards Cooperation.

Driving digital transformation together

Standards have always been vital to information and communication technologies (ICTs) – providing the technical foundations for connectivity and enabling global interoperability.

Over 95 per cent of international data traffic runs over fibre-optic networks built to ITU standards. Video now accounts for over 80 per cent of Internet traffic, enabled by Primetime Emmy-winning video-compression algorithms standardized jointly by IEC, ISO and ITU.

In the wider global ICT ecosystem, collaboration among competitors on standards development creates efficiencies enjoyed by all market players. The resulting economies of scale ultimately reduce production costs and, in turn, final prices for consumers.

As industries keep speeding up, ITU standardization work now addresses health care, financial services, transportation, energy, agriculture, and smart cities, as well as helping all those sectors and the ICT sector to capitalize on advances in artificial intelligence (AI).

New partnerships for a new era

Standardization processes must remain inclusive – with all voices being heard and every step forward determined by consensus – to give innovators worldwide the confidence to continue investing in our digital future. Building trust through standardization has been a key value proposition since ITU's establishment in 1865.

But new times call for new approaches in the global standardization community. New technologies have given rise to unprecedented capabilities to innovate.

World Standards Cooperation

Three organizations preserve their common interests in strengthening and advancing the voluntary consensus-based international standards system.

Learn more.

> *"In the wider global ICT ecosystem, collaboration among competitors on standards development creates efficiencies enjoyed by all market players."*

Today, ITU strives to ensure that everyone has a voice in deciding how these new capabilities should factor into our future. And with ICTs forming a nexus among a growing range of businesses, the responsibilities of regulatory authorities also inevitably converge.

Inclusive dialogue helps new partners understand their roles. It helps to clarify the contributions expected of all stakeholders, including ITU itself. Open platforms, such as ITU Focus Groups, help determine the way forward, while membership-driven ITU Study Groups develop the international standards that give everyone opportunity to move forward together. Collaborative frameworks like AI for Good, United for Smart Sustainable Cities, the Financial Inclusion Global Initiative, the Digital Currency Global Initiative, and the new AI for Road Safety initiative bring multiple perspectives to timely global industry and policy challenges.

Expanding inclusivity

Our world is highly diverse – whether in terms of cultures, languages, or levels of economic development. We convene at ITU in the spirit of collaboration and mutual respect. We learn from one another to advance together.

This is exactly the spirit needed to ensure a sustainable future. The COVID-19 pandemic has brought digital connectivity to the fore – along with the need for trusted systems and networks. ICTs now form part of any discussion about our global future. ITU's neutral platform can help to unify such discussions.

We also keep working to bridge the standardization gap – and ensure that all countries share in the benefits of interoperable technology solutions. We continue bringing decision-makers together from ICT and other sectors. And we continue to grow in inclusivity.

In 2020, ITU introduced reduced membership fees for start-ups and small and medium-sized enterprises (SMEs). Companies of all sizes in developing countries, as well as academia in all countries, also benefit from reduced fees.

Building back stronger from the pandemic, we will ensure that the ITU platform continues to grow in value to a growing number of stakeholders. ITU will continue setting the standard for international cooperation – at a time when this cooperation is more important than ever.

We welcome you to join us.

> *"Inclusive dialogue helps new partners understand their roles."*

> *"We convene at ITU in the spirit of collaboration and mutual respect."*

Global Standards Symposium

Executive heads of standards bodies joined for a panel discussion (session 1) on the theme of standards for the Sustainable Development Goals at the Global Standards Symposium (GSS) on 28 February 2022.

About GSS and the full programme.


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Partnering to connect the world

By Doreen Bogdan-Martin, Director,
ITU Telecommunication Development Bureau

17

On the eve of Part 1 of the 5th United Nations Conference on the Least Developed Countries (UN LDC5), I took enormous pleasure in joining public and private partners for the launch of the next key building blocks in our ground-breaking Partner2Connect Digital Coalition.

Partner2Connect is a global, leadership-level multi-stakeholder effort, constructed in close cooperation with the Office of the Secretary-General's Envoy on Technology, and in line with the UN Secretary General's Roadmap for Digital Cooperation.

Why do we need this new initiative? We need it because recent history has shown us just how catastrophic it is to be unconnected, or digitally excluded.

Right now, almost 3 billion people around the world are still without any kind of connection, and many, many more struggle with connectivity so rudimentary or costly that it adds very little value to their day-to-day lives.

"I took enormous pleasure in joining public and private partners for the launch of the next key building blocks in our ground-breaking Partner2Connect Digital Coalition."

Doreen Bogdan-Martin

New strategies needed

With the UN Sustainable Development Goals for 2030 and associated targets fast approaching, it's clear that business-as-usual strategies to connect the world will not cut it. We need to be bold, creative, and to put in place new kinds of hybrid partnerships between traditional and new players, so that everyone, everywhere, can enjoy equitable, affordable access to life-changing digital platforms and services.

Partner2Connect – or P2C – has four main Focus Areas:

- **Access:** Connecting people everywhere;
- **Adoption:** Empowering communities;
- **Value creation:** Building digital ecosystems; and
- **Accelerate:** Incentivizing investments.

These address the core elements vital to nurturing thriving digital markets. They will frame all our P2C actions.

P2C Action Framework and Pledging Platform

On 16 March, during a web dialogue on P2C Focus Area 2, "Adoption: Empowering Communities", we launched two critical new elements of the Partner2Connect vision.

The first is the **P2C Focus Areas Action Framework**, which will serve as the guiding document for the P2C Coalition. This new framework – developed by our dedicated P2C Working Groups and Focus Area Leaders, with the expert support of P2C's Knowledge Partner, the Boston Consulting Group – highlights the key elements that need to be addressed to achieve universal, meaningful connectivity and digital transformation for all.

The second key element is our all-important **P2C Pledging Platform**. Through this new online platform, we will leverage the power of partnership to dramatically accelerate efforts to extend meaningful connectivity and digital inclusion globally, including in the hardest-to-connect communities in the world's least developed countries (LDCs), landlocked developing countries (LLDCs) and small island developing states (SIDS).

Together, the action framework and pledging platform directly respond to the call for accelerated action around digital development in the UN Secretary-General's *Roadmap for Digital Cooperation*. It also reflects, in a very timely manner, the many "calls to action" around digital issues that we see in the *Doha Programme of Action for the LDCs* newly adopted by the LDC5 conference on 17 March.

> *"We need to be bold, creative, and to put in place new kinds of hybrid partnerships between traditional and new players."*

Connectivity in the Least Developed Countries: Status report 2021

This report examines the root causes of the digital divide.

Watch the video presentation.
Access the report.

After this first part of LDC5 at UN Headquarters in New York, the second part next March in Doha will gather world leaders together with civil society, the private sector, young people and more. There, we will build new plans and partnerships for the delivery of the *Doha Programme of Action* over the following decade.

Beyond fund raising

P2C is much more than a fund-raising drive. Organizations and entities can make single pledges, multiple pledges, or joint pledges under four category types: financial, policy, advocacy, and programmatic.

Financial commitments and pledges to help push vital infrastructure into out-of-reach communities will certainly be most welcome. But pledges focused on **policy** can be equally powerful, stimulating organic, sustainable growth in markets through investment-friendly regulatory frameworks.

Advocacy pledges that raise awareness of the many benefits of being connected can drive demand for online services, which translates into further investment. And **programmatic** pledges in areas like digital skills can translate into digitally empowered populations with the know-how to build compelling new services that address the needs of local communities.

Some of our Coalition Leaders have announced early pledges. I thank these partners in both the public and private sectors – including the Government of Ghana and German development agency GIZ, as well as leading global firms Microsoft and Vodafone – for stepping forward to make these powerful commitments towards achieving universal meaningful connectivity.

Poised for action at WTDC

Time is of the essence. We call on all players across the information and communication technology (ICT) ecosystem and beyond to step up and work with us to connect the 2.9 billion people who are still unconnected, as well as to bring meaningful, life-changing connectivity to the hundreds of millions more who need better access to transform their lives.

Standing alongside all our partners, I look forward to proudly showcase the first fruits of our new P2C Pledging Platform to the whole world at the World Telecommunication Development Conference (WTDC) in June. By joining hands and working together, we can really pull out all the stops and: "Partner to Connect the World".

Pledge to Partner2Connect

Register your pledge to help us bridge the digital divide and achieve universal, meaningful connectivity.

More here.

> *"We call on all players across the ICT ecosystem and beyond to step up and work with us to connect the 2.9 billion people who are still unconnected."*

This article is based on Doreen Bogdan-Martin's remarks at the launch of the P2C Pledging Platform and Focus Areas Action Framework, as part of the P2C Web Dialogue on Focus Area 2, Adoption: Empowering communities, on 16 March 2022.

17 PARTNERSHIPS FOR THE GOALS

Partner2connect

web dialogues and events

Upcoming web dialogues:

20 April 2022

VALUE CREATION:
Building digital ecosystems

15:00–16:00 CET

11 May 2022

ACCELERATE:
Incentivizing investments

15:00–16:00 CET

Upcoming event:

7–9 June 2022

Digital Development Roundtable

Kigali, Rwanda

Read more

Throughout the year, the **P2C Digital Coalition** *hosts a range of events to engage all stakeholders working to achieve universal meaningful connectivity.*

Learn more

Connecting the unconnected to achieve sustainable development

A unique opportunity to develop innovative approaches and new models of collaboration for connectivity and digital solutions in this final **Decade of Action** to achieve the **UN Sustainable Development Goals**.

Register now

YOUTH SUMMIT

PARTNER2CONNECT

NETWORK OF WOMEN

ITUWTDC
KIGALI2022
6-16 June 2022
Kigali, Rwanda

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