Regulating for connectivity
Stay current // Stay informed

Discover ITU News
– your gateway to relevant ITU content based on your interests.
Keep informed with the latest news and insights.

To receive the weekly ITU Newsletter, subscribe today

Join ITU’s online communities on your favourite channel
Laying the foundations for global digital transformation

By Houlin Zhao, ITU Secretary-General

Early last year, the United Nations (UN) Secretary-General called for everyone around the world to have safe and affordable access to the Internet by the end of the decade. With this crucial access goal in mind, I have urged regulators and policymakers everywhere to work with investors – including telecommunication network operators – to create the conditions for a better investment environment.

In the wake of the COVID-19 pandemic, global recovery efforts need to be built on new regulatory and policy frameworks that embrace collaborative participation, with a new whole-of-government investment strategy at their centre. At the same time, we need a new mindset, one that attracts investors to unserved and underserved areas and encourages everyone to make the best use of limited resources.

This year’s Global Symposium for Regulators, GSR-21, put at the forefront exactly the kind of collaborative approaches for telecommunications and digital regulation that could ensure affordable connectivity worldwide by 2030 and help countries achieve all UN Sustainable Development Goals.

The next World Telecommunication Development Conference (WTDC-22) – coming amid a swathe of innovative and game-changing technologies and services – offers an opportunity to transform the global digital agenda without leaving anyone behind.

I thank the regulatory community and industry stakeholders for their response to the ongoing crisis, as shown by the best practices and lessons shared on ITU’s REG4COVID platform, and I encourage our members to continue sharing their experiences.

This latest ITU News Magazine highlights some of GSR-21’s key discussions and outcomes.
Regulating for connectivity

Editorial

3 Laying the foundations for global digital transformation
   By Houlin Zhao, ITU Secretary-General

Message from the Director and GSR-21 Chair

6 Digital regulators must collaborate to build forward better
   By Doreen Bogdan-Martin, Director, Telecommunication
   Development Bureau, ITU, and Mercy Wanjau,
   Communications Authority of Kenya, and GSR-21 Chair

Moving the regulatory cursor

10 G5 regulation: The digital transformation fast lane

14 How can regulators promote innovation?

17 How to build partnerships for digital transformation

Financing affordable access

21 Finding ways to fund connectivity

25 Bridging the digital divide with innovative finance and
   business models

28 Regulating for resilience: ICT markets and economies post-
   COVID-19
   By Raúl Katz, Director, Business Strategy Research, Columbia Institute
   for Tele-Information (CITI) and President, Telecom Advisory Services
Connectivity for all

32  Spectrum, investment and balance: 3 key enablers for connectivity

36  Leading to achieve universal connectivity

40  Broadband mapping: Key to universal connectivity

Accelerating inclusion

45  Connect2Include: Making digital accessibility a reality for all

49  What happens when youth and regulators collaborate on ICT policy?

53  Co-designing solutions to keep children safe online

57  Wanted: More women leaders in tech

62  Road to Addis: Empowered youth for inclusive digital futures
Digital regulators must collaborate to build forward better

By Doreen Bogdan-Martin, Director, Telecommunication Development Bureau, ITU, and Mercy Wanjau, Communications Authority of Kenya, and GSR-21 Chair

Today’s digital economies are reaching across borders, far and wide. Digital regulation is pivotal to facilitate the flow of investment and services between industries and countries and to the build out of high capacity, resilient, open infrastructure for all.

To leverage synergies and pool funds, regulators are expected to engage in whole-of-government approaches, which must include collaboration and coordination at the national and local levels.

Collaboration is needed to address social and economic priorities, firstly between ministries for information and communication technology (ICT), economy/finance, and planning, but also with those for education, health, agriculture, transport, gender, security and energy.

Stronger international and regional cooperation, meanwhile, could help to address thorny issues related to digital trade, taxation, data protection, and cybersecurity. Open markets underpinned by collaborative regulation can foster unprecedented opportunities for people of all backgrounds in health, education, finance, commerce, energy, ICTs and other fields.

The Global Symposium for Regulators (GSR) – held annually since 2000 – provides a unique, neutral discussion platform for regulators and policymakers to share their experiences and best practices.

“
To leverage synergies and pool funds, regulators are expected to engage in whole-of-government approaches, which must include collaboration and coordination at the national and local levels.”

Doreen Bogdan-Martin
ITU

Mercy Wanjau
Communications Authority of Kenya, and GSR-21 Chair
Best regulatory practices for digital transformation

This year’s GSR Best Practice Guidelines, adopted during the Heads of Regulators meeting on 21 June, will help countries optimize their regulatory strategies to drive faster and more inclusive connectivity. As in previous years, the Guidelines will facilitate high-value debate on the future of markets and regulation.

Published annually since 2003, they build on wisdom from the global community of regulators, helping to guide users through the uncharted territory of digital transformation. The 2021 edition addresses the unprecedented disruptions caused by COVID-19.

The Guidelines lay out the key features needed in regulatory regimes to keep digital markets: “switched on”, accelerate market uptake, and deliver easy access to more people, faster.

Such best practices, if widely adopted, could help developing economies leapfrog ahead, with governments, businesses, and citizens reaping the full benefit of digital technologies.

“Such best practices, if widely adopted, could help developing economies leapfrog ahead, with governments, businesses, and citizens reaping the full benefit of digital technologies.”

Doreen Bogdan-Martin and Mercy Wanjau
New mechanisms needed

The 2021 Guidelines highlight the imperative to introduce agile financing mechanisms for digital infrastructure, access and use. What’s more, policy and regulatory tools are already at hand to bridge the financing gap in digital markets. Appropriate finance can turbo-charge regulatory progress, foster collaborative digital regulation — otherwise known as 5th generation regulation (G5) — and unlock digitally transformed, inclusive economies.

This year’s edition is more than ever community-owned, by the regulatory community and for the regulatory community, across regions and globally. Regulators everywhere need to adopt and implement a globally agreeable approach in a manner relevant to their particular national circumstances.

A sizeable toolbox is available for regulators to leverage evolving market dynamics, adapt in the aftermath of COVID-19, and seize new digital opportunities.

For example:

- Innovative financial instruments and targeted incentives can be tailored for traditional and new players in infrastructure deployment, especially in underserved areas.

- Dedicated national funding instruments, such as infrastructure and innovation funds, alongside universal service funds, could drive infrastructure development across economic sectors.

- Strategic tax policy, including tax incentives or tax deductibility for new investments and the removal of sector-specific taxes on digital services, devices, and equipment, can go a long way in fostering digital economies.

- Safe spaces for regulatory experimentation allow innovators to fine-tune new business models and build resilience of new digital services, thus giving people and businesses new channels for economic and social activity.

- Regulatory sandboxes reflect the complexity of new digital technologies and services, reducing time-to-market and helping secure funding for broad rollout to new consumer groups and the previously unconnected.
Practical application

The GSR-21 Best Practice Guidelines call for a sharp focus on policy implementation to ensure wide, sustainable impact. Policy and regulatory measures must be designed and applied to make digital devices available and affordable. This includes connecting schools, local government offices and health centres, creating e-government applications, and promoting local digital content.

Building on best practices and acquired learnings over the past two decades, ITU metrics help regulators and policymakers navigate complex digital markets and technological transformation:

- The **ICT Regulatory Tracker** helps monitor progress and identify gaps in regulatory frameworks.
- The **G5 Benchmark** sets the gold standard for fast-track, collaborative, cross-sectoral regulation.

Based on these benchmarks, regulators and policymakers can find granular, focused analysis at their fingertips, turning high-level policy guidance into practical, actionable advice to measure progress, pinpoint gaps, and hone future regulation.

Bookmark all **GSR Best Practice Guidelines** since 2003.
G5 regulation: The digital transformation fast lane

This year has seen the global regulatory community embrace the so-called "gold standard" for digital regulation.

Fifth-generation collaborative regulation, or G5 for short, is part of an International Telecommunication Union (ITU) concept of continual technological development, with successive "generations" evolving from command-and-control public monopolies to collaborative regulation across institutions and stakeholders as part of a digital economy.

The concept reflects 20 years of global engagement on policy and regulatory best practices, combined with ongoing research, analysis and prototyping. Reaching G5 represents a key step to unlock a far-reaching global digital transformation.
To capture progress on the creation of an enabling policy environment in each country’s digital market, the ITU has launched a new framework, the G5 Benchmark. It allows regulators, policymakers and other users to map out key policies and track implementation, as well as establish a common language and facilitate country-level modelling.

### 2021 G5 Benchmark: Bigger and better

The 2021 edition introduces a new framework to assess country-level preparedness for fully digital social and economic transformation.

Spanning 193 countries, the G5 Benchmark tracks data across 70 indicators, organized around four main pillars:

- **National collaborative governance**: This covers collaboration among institutions, industry stakeholders, and cross-sector regulators and assesses regulatory coherence and impact at the domestic, regional, and international levels, particularly where information and communication technologies (ICTs) cross over with health, finance, education, transport and energy.

- **Policy design principles**: This indicates the extent to which policy design and regulatory compliance are guided by evidence, transparency and accountability, and ethics.

- **Digital development toolbox**: This encompasses key legal and policy instruments, including those for cybersecurity, data protection, emergency telecommunications, and infrastructure sharing, as well as mid- to long-term socio-economic goals, such as youth employment and sustainable consumption and production, where digital technologies play a role.

- **Digital economy policy agenda**: This indicates how far governments have updated their policy portfolios for the digital economy, from innovation and investment incentives to taxation, emerging technologies, and industry codes of conduct.

The G5 Benchmark offers regulators and policymakers a straightforward snapshot of where each country stands in respect to digital transformation. Based on these indicators, countries fall into four stages of digital-transformation readiness: Limited, Transitioning, Advanced or Leading.
How the G5 Benchmark adds value

- **Regulation is changing as digital markets mature.** Development trajectories are shifting, with digital transformation following varied pathways in different economies. The G5 Benchmark serves to guide national decision-makers through uncertain times – beyond country rankings and score calculations.

- **Existing metrics do not tell the whole story.** Building on global perspectives across economic sectors, the G5 Benchmark lays out clear regulatory tracks to ensure that digital markets can thrive while achieving national and regional development goals.

- **Policy design, input from national stakeholders and implementation can all work together to fast-track digital development.** Agile, resilient, future-proof regulation requires a laser focus on policy implementation. The G5 Benchmark combines broad principles with specific instruments and implementation mechanisms, recognizing that fifth-generation regulation is contextual, modular and multi-dimensional.

- **Regulators are increasingly collaborating across sectors.** Collaboration among institutions is an essential ingredient for regulatory relevance, coherence and impact. The latest G5 Benchmark reflects greater breadth and depth of collaboration between ICT regulators and sector-specific or multi-sector regulators.

- **A benchmark is worth a thousand words.** Based directly on relevant indicators, policymakers can evaluate existing regulatory tools and systems – comparing apples with apples – and make updates based on wide-ranging evidence.
Leveraging country-specific experiences

Regulators in different countries are increasingly documenting their experiences in moving through successive generations of regulation. Details of hard-won gains are captured in several country reviews, which can provide valuable pointers to other countries eyeing a similar path.

Every country’s assessment is unique. As well as analysing varied policy and regulatory patterns, each review sets out national regulatory successes to date and the key challenges still ahead.

G5 Accelerator: Collaborative insights and tools

The new G5 Accelerator platform hosts an extensive collection of articles on collaborative governance, new patterns in digital regulation, and tried-and-tested policy and regulatory best practices for the telecom sector and digital markets. The G5 Accelerator offers data-driven tools, such as the ICT Policy Impact Lab, the ICT Regulatory Tracker, and the G5 Benchmark.

Visit the reading room, explore unique datasets and country profiles, and contact ITU’s G5 Benchmark team if you need support with the tools.

Stay current // Stay informed
Sign up to:

ITU News
Regular articles
//
Regular blogs
//

ITU News
Magazine
//
Six editions per year
//
How can regulators promote innovation?

COVID-19 has marked a point of no return for regulators keen to make digital transformation a reality and fix the gaping digital divide exposed by the pandemic. Accomplishing this comes with both challenges and opportunities.

Regulators need to keep up with fast-changing technologies while maintaining a careful balance between enforcing rules, fostering innovation, protecting consumers and ensuring fairness in the market.

“The environment in which the regulator operates is different from the one for which existing policies were designed,” says Flavien Bachabi, Chairman of the Board of Benin’s Regulatory Authority for Electronic Communications and Post (ARCEP), during a session at the Global Symposium for Regulators 2021 (GSR-21).
As the West African country strives to create a digital ecosystem, the authority has sought to “make regulation fair and non-discriminatory; make resources and frequencies available to all operators; lower barriers to entry for new operators where possible; and protect consumers.” Creating a fair market is crucial, adds Bachabi. “If there is no competition, there cannot be innovation.”

Driving innovation

Regulators must transform themselves so they can bring innovations that protect users and guarantee high-quality services, says Carlos Lugo, Commissioner at Colombia’s Communications Regulation Commission (CRC). “We have therefore proposed regulatory sandboxes.”

About regulatory sandboxes

The regulatory sandbox is a mechanism that grants regulatory exemptions and incentives to companies so that new products, services or business models can be tested under the supervision of a regulator. Sandboxes seek to drive innovation in communications networks and services, thus prioritizing the access and use of ICTs, especially in areas with low connectivity. They encourage competition and generate timely responses to changes in the industry. They can also facilitate cross-sector collaboration.

”

We have proposed regulatory sandboxes.

Carlos Lugo
Commissioner,
CRC, Colombia
The Colombian regulator’s initiative to test innovations has received positive feedback so far, he adds.

Regulation can be digitalized with easily available data to facilitate innovative decision-making. “Through modernizing processes and user data protection policies, operators can self-regulate and manage transactions and interactions between operators and users,” adds Lugo.

**The importance of ‘technology neutrality’**

To encourage innovation, regulators and regulations must maintain “technology neutrality” in planning and support for innovation. “It doesn’t mean that you treat all technologies equally,” notes Jennifer Manner, Senior Vice President of Regulatory Affairs at EchoStar Corporation. “It means that you include all technologies. All of them have to be part of any funding scheme.”

Rather than dictate choices of technology, regulators should aim to “provide a framework of the requirements and have the operator meet that,” Manner says.

An accessible, affordable, and inclusive Internet, for instance, cannot exist without an enabling regulatory and policymaking environment.

Broadband strategies are needed locally, nationally and regionally, with each strategy reflecting the resources and policies at the corresponding level.

**Competitive markets and new business models**

Monica Desai, Global Head of Connectivity and Access Policy at Facebook, underlines the value of “policies that lower data costs for consumers, by promoting choice through competition and by encouraging new business models.” At the same time, she warns against “burdensome and unnecessary regulation of Internet content, services and applications.”

Desai urges national authorities to ensure regulatory certainty, as well as to adopt policies that reduce right-of-way access costs for infrastructure. Transparent and accountable policymaking processes are central to building public trust, she adds. “This includes timely, accessible and actionable information, and being accountable for actions and decisions.”
How to build partnerships for digital transformation

Countries around the world are at different stages when it comes to information and communication technology (ICT) access and infrastructure. However, collaboration helps countries build inclusive connectivity, improving the prospects of the widest possible range of individuals and businesses in the digital era.

The COVID-19 pandemic has brought different players together in new ways, with users demanding greater connectivity to work, learn, socialize and make use of online public services. But even as governments and companies deliver the necessary infrastructure, some segments of society – even in highly developed economies – are at risk of being left behind.

“It would be a shame, especially for disadvantaged and isolated communities, if in the excitement of getting back to normal and reviving world economies, policymakers did not seize the opportunity to reset to a more balanced approach and prioritize transformative and meaningful connectivity for all,” said Aarti Holla-Maini, Secretary-General of the EMEA Satellite Operators Association (ESOA), at the virtual Global Symposium for Regulators (GSR-21).
COVID expedites cooperation

Each country needs collaborative solutions that reflect its specific opportunities, objectives, challenges and limitations.

"Regulation must not be designed with a one-size-fits-all approach, but must consider the full value of the chain," said Emilia Nghikembua, CEO of the Communications Regulatory Authority of Namibia (CRAN).

With partnerships already in place between CRAN and the national competition and banking authorities, Namibia has set its sights on building a collaborative, cross-sectoral regulatory framework.

“We are strengthening our collaboration with authorities in the financial and energy sectors and working towards the establishment of a data protection authority,” Nghikembua explains. “We are also finalizing our frameworks on cybersecurity, data protection and e-commerce.”

COVID-19 has heightened the need for collaboration in the education and health sectors. However, national ICT policies must reflect each country’s dominant on-the-ground realities.
“For many African countries, the true state of our ICT ecosystems means that we must focus on access and affordability,” says Nghikembua.

In practice, she adds, this necessitates a “hybrid” policy model, focused on enabling investment, innovation, competition, content delivery and consumer protection along with attaining wider economic and policy goals.

Human-centric connectivity

For Holla-Maini, the pandemic has highlighted several key lessons. “Meaningful connectivity is independent of speed and latency targets because it depends on the context and the location of users,” she says. “What is transformational for one community might not be for another.”

Children without access to online classes have incurred a loss of learning in the past two years. Decision-makers must prepare to avoid letting this happen again, Holla adds, noting the value of international cooperation on digital access strategies at the European or other regional levels.

“Regional approaches foster the sharing of best practices, whether in terms of how network technologies are being used or in terms of regulating operators and their services.”

Work to address the digital divide is also underway on the corporate side. Microsoft, for example, is preparing a framework for human-centric connectivity.

“There’s a broader set of issues when it comes to getting people connected, including affordable broadband connectivity and devices,” notes John Frank, the company’s Vice President of United Nations (UN) Affairs, adding: “Human rights need to be infused throughout the process.”

Decisions on digital transformation must be backed by evidence, he adds. “If we don’t measure the problem correctly, we are not going to be able to solve it.”

Millions of Americans remain without broadband access. In partnership with the US government, Microsoft is producing maps that reveal coverage gaps.
A new ITU partnership

The UK's Foreign, Commonwealth & Development Office (FCDO) recently began a joint project with the International Telecommunication Union (ITU) to expand digital access in Brazil, Indonesia, Kenya, Nigeria and South Africa.

The year-long partnership aims to help telecom regulators in five countries enhance their regulatory frameworks to strengthen digital inclusion. In parallel, it will promote conducive public and private investment conditions, develop sustainable and inclusive technology and business models to expand school connectivity in underserved communities, and advance digital skills to help young people get decent jobs, says Simon Manley, the UK's Permanent Representative to the World Trade Organization and United Nations agencies in Geneva, Switzerland.

This is part of ITU's quest to promote affordable, accessible, meaningful and inclusive connectivity. “In a world beset by global crises,” says Doreen Bogdan-Martin, Director of ITU's Telecommunication Development Bureau, “we simply cannot and will not move forward without enhanced global cooperation and renewed emphasis on partnership.”
Finding ways to fund connectivity

What will it cost to connect the world and bridge the current digital divide? How and where can we find the money to fund the global digital transformation?

Financing connectivity is recognized as a key priority in the United Nations Secretary-General’s Roadmap for Digital Cooperation.

During a recent high-level debate on digital cooperation and connectivity, the President of the 75th Session of the United Nations General Assembly urged the global community to work creatively with public and private stakeholders to forge a new paradigm to drive digital development.

Creative collaboration will be the key focus of the next World Telecommunication Development Conference (WTDC), a major International Telecommunication Union (ITU) forum set to bring together 193 governments with private sector investors, national, regional and international development finance institutions, academia, and civil society.
A wake-up call

During the virtual session Finance2Connect, Doreen Bogdan-Martin, Director of the ITU Telecommunication Development Bureau, said prioritizing connectivity was vital to protect nations from future crises, because it “confers resilience, protects economic performance, preserves social cohesion, and drives growth.”

Fallout from COVID-19 has exacerbated long-standing development challenges.

“For too many, the absence of digital access has intensified the socio-economic impact of the pandemic,” noted Volkan Bozkir, President of the 75th Session of the United Nations General Assembly. “We must see this as a wake-up call and make every effort to close the digital gap now. With literally trillions of dollars pouring into global recovery efforts, we have the resources to expand digital access worldwide quickly and dramatically.”

Bozkir called for broad collaboration with ITU to come up with creative proposals, incentivize investment in connectivity, and to ensure funding is allocated to much-needed infrastructure.
Digital applications, if properly financed, can leapfrog other, more physical, infrastructure development, such as road construction, said Preeti Sinha, Executive Secretary of the UN Capital Development Fund. “Blended finance, along with market development, is the key,” she said.

However, digital infrastructure will always remain interlinked with the global Sustainable Development Goals (SDGs) – especially as it relates to financial inequality. Failure to address current inequalities and create a global movement around the SDGs will “have a detrimental effect on all investment funds,” warned Hiro Mizuno, UN Special Envoy on Innovative Finance and Sustainable Investments.

**Tapping existing resources**

Connecting the remaining 3 billion people aged above 10 to the Internet by 2030 requires investments of USD 428 billion, notes the ITU Connecting Humanity study. Subsequent ITU findings suggest that a 10 per cent increase in broadband boosts per capita GDP by 2 per cent or better.

The question is how to direct existing financial resources, as well as dividends from cryptocurrencies and other new investment types, to where they are needed most.

This is a tall order given gaping economic disparities worldwide. According to Organization for Economic Cooperation and Development (OECD) research, out of USD 379 trillion in global financial assets, 81 per cent are in high-income countries; 19 per cent in middle-income countries, and less than 1 per cent in low-income countries.

**Universal ownership**

To encourage higher investments in connectivity projects, Mizuno argues for a universal ownership approach, providing aggregated investment opportunities together with development banks and UN entities.

Expanding the stakeholder base should also involve youth, suggested Mmabatho Motsamai from ITU’s Generation Connect Visionaries Board.

Although young people are often viewed as consumers, many in the Global South work in informal economies that remain untapped by financial institutions.
Crowdfunding connectivity

Andile Ngcaba, Founding Partner and Chairman, Convergence Partners, suggests open sourcing network infrastructure could cut total global connectivity costs by 25 per cent. Digital bonds and tokenized infrastructure could support inclusive financing mechanisms for local communities, while licence fees could be waived for the newly connected.

"In my village, in my township, I can have a piece of ownership,” Ngcaba explained.

"We can almost crowdsource that USD 428 billion.”

Blockchain technology can “provide a trust network between investors, public agencies, and individuals,” added Aya Miyaguchi, Executive Director of the Ethereum Foundation.

A mindset shift

Beyond profitability, investing in connectivity brings social benefits. But project partners need to know the social outcomes of their infrastructure investments, said Charlotte Petri Gornitzka, Assistant Secretary-General and Deputy Executive Director for Partnerships at the United Nations Children’s Fund (UNICEF).

Next stop on the Road to Addis

Preparations are underway for WTDC-22, planned to be hosted in Addis Ababa, Ethiopia, giving attention to partnerships, inclusion, leadership, innovation, and youth – along with financing – as enablers of connectivity for sustainable development.

The “Road to Addis” series, with a focus on leadership, culminated in September with outcomes presented at the United Nations General Assembly.

To engage with ITU and contribute to the impact of the next WTDC, contact the WTDC-22 team here.
Bridging the digital divide with innovative finance and business models

As the world becomes increasingly digitalized, the economic cost of digital exclusion is higher than the cost of closing the infrastructure, affordability, gender, and other gaps that persist.

With 60 per cent of global GDP expected to rely on digital communication technologies by 2022, vulnerable populations in both developing and developed countries who are unable to connect to or use digital technologies risk being left behind in the post-pandemic recovery, leading to potentially heavier knock-on effects.
The cost of exclusion

Bridging the digital divide calls for enormous, rapid investments at all levels. According to the ITU Connecting Humanity study, nearly USD 428 billion is required to connect the remaining three billion people aged ten years and above to broadband Internet by 2030.

Hannia Vega, Commissioner at Costa Rica’s Superintendency of Telecommunications (SUTEL), sees a need for three key factors to close connectivity gaps: first, establishing a clear roadmap for what must be done; second, identifying the key players involved; and third, establishing a funding mechanism.

A recent Global Symposium for Regulators (GSR-21) session focused on financing universal access.

Fostering meaningful access

Universal access depends on more than extending networks; it requires fostering active adoption and use of digital technologies. To have a meaningful experience online, users need basic digital skills and must be able to afford Internet access.

“Connectivity is all about enhancing a number of aspects that are developmental, that require contributions in a multi-sectoral environment,” observes Andile Ngcaba, Founding Partner and Chairman of Convergence Partners, an impact investment management firm focused on the telecommunications, media and technology sector in Africa.

Broadband: A key enabler

As digital activity permeates our everyday lives, approaches to funding in the sector are changing. For instance, infrastructure development initiatives are broadening to include funds for public broadband.

Amid rapidly shifting market dynamics, broadband must be embraced as a “general-purpose technology” for continued economic and digital development amid shifting market dynamics, says Bocar Ba, CEO of the SAMENA Telecommunications Council, which spans over 25 countries across South Asia, the Middle East and North Africa.

With broadband seen as a key enabler, digitalization policies increasingly call for pooling financial resources, sharing open-access infrastructure, and leveraging public money to raise private funds.
The key challenge is to make rural, low-income areas and marginalized populations worth the risk for investors.

**De-risking universal connectivity**

Governments can mitigate investment risks, thereby reducing costs. One way – noted in ITU’s new *Financing Universal Access to Digital Technologies and Services* report – is to set financial priorities in policies, strategies and recovery or stimulus plans.

Government-backed financing tools can also help to mobilize private investment, with support and guidance on risk mitigation mechanisms and case studies and analysis on effective financial solutions. One funding toolkit focuses on US structural funds, including Universal Access and Service Funds (USAFs).

While 100 USAFs are operational, not all are achieving their goals. With expansion from basic telecom infrastructure to all-out digital transformation, the whole concept of the funds requires some rethinking.

Charting a path towards a more collaborative USAF 2.0 means considering the country’s whole digital policy, economic strategy and legal framework.

Collaboration in support of such impact investment or financing instruments may include non-monetary or in-kind contributions.
As the COVID-19 pandemic continues its relentless spread, governments, regulators, academics, and the global information and communication technology (ICT) community keep rethinking policy and regulatory frameworks to mitigate the effects of the crisis and chart a way out of it.

The 7th Economic Experts Roundtable convened by ITU provided a platform to generate ideas and solutions to render ICT markets an even more important contributor to social and economic resilience in the face of COVID-19.
The current crisis has brought new challenges to the ICT sector. Regulatory frameworks need to be adjusted to stimulate investment while maintaining a moderate level of competition. Markets and consumer benefits are now examined by decision-makers through the lens of financial adversity and uncertain outlooks.

Amid disruption, policymakers and regulators need evidence-based guidance that provides a solid ground for their reforms.

A new study released at the Roundtable provides fresh insights backed by authoritative data on the evolution of ICT regulation since 2007, the ICT Regulatory Tracker and a global dataset on ICT market economics.

The study shows that ICT regulation has had a measurable impact on the growth of global ICT markets over the past decade.

The analysis uses econometric modelling to pinpoint the impact of the regulatory and institutional frameworks on the performance of the ICT sector and its contribution to national economies.

It provides policymakers and regulators with evidence to advance regulatory reform and address the challenges and gaps in current regulatory frameworks for digital services and applications.

**Upgrading regulatory frameworks: What matters?**

The new analysis points to regulatory features that can have a multiplier effect on ICT markets and consumer benefits.

- ICT regulation is positively linked with increases in telecommunication investment. An improvement of 10 per cent in the majority of national ICT regulatory frameworks is associated with an increase of fixed and mobile investment of over 7 per cent. For this to happen, a country needs a separate, autonomous ICT regulator with a broad mandate, promoting competition and adopting best regulatory practices in ICT licensing, service quality monitoring and spectrum sharing.

- Tax cuts are associated with a significant boost in capital investment, as they increase available financial resources for network deployment. Reducing profit tax by half leads to an increase of fixed and mobile investment of nearly 14 per cent.
Streamlining government administrative processes is linked to a significant increase in capital investment, highlighting the importance of minimizing time to obtain network deployment permits, handling municipal network construction requirements, and reducing red tape costs. Slashing administrative processing times by half is linked to an increase in fixed and mobile investment of 17 per cent.

A regulatory power boost for mobile

For the mobile sector, open and collaborative regulatory policies appear to have a strong positive impact on investment. In turn, more investment triggers coverage gains and lower consumer prices, boosts ICT adoption and generates growth in national economies around two years after policy adoption.

A digital agenda is crucial to accelerating innovation and boosting investment. The introduction of a national broadband plan with a strong implementation framework and leadership increases mobile investment and network coverage by some 15 per cent.

Converged licensing frameworks maximize the financial returns of investments as they provide a flexible policy approach adapted to technological advances. Such frameworks are associated with a 10 per cent increase in mobile investment and network coverage.

Allowing voluntary spectrum sharing agreements, thereby helping operators to maximize the opportunities to make investments profitable, creates strong incentives for network deployment. Such collaborative regulatory regimes see an 18 per cent increase in mobile investment and network coverage, and price reduction by close to 10 per cent compared to countries where this is not allowed.

Openness to foreign operators increases access to capital for network development and modernization and enables technology and know-how transfer. An open mobile market can stimulate capital investment with increases of 14 per cent along with network coverage.

Policymakers are encouraged to use the report as an evidence base underpinned by a deeper understanding of the linkages between regulatory and institutional contexts and ICT market outcomes, of which policies can lead markets, consumers and economies out of the current crisis.
Are you ready for your digital transformation journey?

The G5 Accelerator brings together high-value tools and resources for practical, step-by-step regulatory support:

- Well signposted access to high-value content
- User-driven navigation and engagement
- Highly accessible content

The online platform offers key guidance for countries already embarked – or those planning to embark – on their digital transformation journey.

G1 to G5
Five generations of regulation
// in a single platform //

Explore

G5 Accelerator
The collaborative decision-making powerhouse.

ICT Policy Impact Lab
The impact of policies and regulations on ICT investment.

Metrics

ICT Regulatory Tracker
Evidence-based tool for decision-makers and regulators in the journey from G1 to G4.

G5 Benchmark
Sets new goals for regulatory excellence in the digital transformation.

Join ITU's online communities on your favourite channel

[Social media icons]
Spectrum, investment and balance:
Three key enablers for connectivity

Connecting Humanity, a study by the International Telecommunication Union (ITU), indicates the need for investments worth an estimated USD 428 billion worldwide to ensure that people all over the world enjoy unhindered digital access.

Universal access depends on connecting the remaining three billion people aged ten and older – still nearly half of the world’s population – to broadband Internet by 2030. Reaching this milestone will hinge on regional and national regulatory frameworks – the rules needed to ensure investments happen smoothly.

As countries pursue broadband Internet rollout and use, specific policy choices and other regulatory factors can help drive investment in information and communication technologies (ICTs) and encourage innovation within the sector. Beyond the broad commitment to connectivity, such details amount to “regulatory enablers” for digital transformation.
Sharing spectrum

To benefit end users, ICT policies need to promote competition among service providers and collaboration among regulators.

Radiocommunication experts see the sharing of radio-frequency spectrum – a naturally limited resource – as a key regulatory enabler.

Every time you turn on your TV, access the Internet or find a location with your smartphone, you are using a frequency allocated to your service provider. The global management of radio-frequency spectrum is one of the vital services coordinated by ITU, the United Nations specialized agency for ICTs.

With the rapid expansion of wireless services over the last few decades, the companies and institutions relying on radio waves to provide services or carry out essential functions find themselves constantly competing for radio-frequency spectrum. New applications, steady user growth and exploding traffic – especially in the face of COVID-19 – all intensify the demand for scarce spectrum.
“ITU develops international regulations that enable the expansion of services and applications while protecting incumbent services,” explained Mario Maniewicz, Director of ITU’s Radiocommunication Bureau, during a panel at the 2021 Global Symposium for Regulators. For instance, ongoing deliberations on using parts of the 6 gigahertz (GHz) radio-frequency band for mobile services should bear in mind that the band is also extensively used for fixed-satellite services.

National regulators, Maniewicz pointed out, can analyse spectrum sharing from varied perspectives to implement licensing schemes that increase spectrum efficiency. Spectrum can be shared among different services, different operators of the same service or among devices from the same service.

“Technical feasibility can never be overlooked”, Maniewicz added. “Ongoing studies by the ITU Radiocommunication Sector (ITU–R) consider sharing and compatibility options to ensure new radio communication services can function without interfering with existing ones.”

Increasingly, radio spectrum may be wanted for other applications. This makes spectrum harmonization another key factor that can influence the scale and reach of connectivity solutions.

“Harmonization is important to make sure there’s sufficient scale,” said Jayne Stancavage, Global Executive Director of Digital Infrastructure Policy at Intel. “Sufficient scale enables [companies] to provide devices at a lower cost, which gets passed on to the consumers.”

Co-deploying infrastructure

Network sharing options can help to promote investments in connectivity.

“Operators must be able to use their own infrastructure, as this is the best way to promote and preserve competition in the long run,” said Michel Van Bellinghen, Council Chairman at the Belgian Institute for Postal Services and Telecommunications (BIPT) and 2021 Chair of the Body of European Regulators for Electronic Communications (BEREC).

Sharing mobile infrastructure can encourage the rollout of 5G networks, Van Bellinghen added. “As long as sufficient infrastructure-based competition is maintained, sharing allows cost savings and makes more extensive coverage viable.”

While ICTs require heavy investment, competition helps to improve efficiency and broaden overall participation and representation.
“We need small and medium operators to have enough tools and give them enablers to bring innovative products to end users,” said Ekaterine Imedadze, Commissioner of the Georgian National Communications Commission.

With licence distribution underway for 5G, Imedadze noted progress in incentivizing sharing of spectrum and infrastructure and providing operators with best practices on co-investing in 5G networks.

A balancing act

As regulations for infrastructure sharing come into force, regulators will normally aim to maximize efficiency, reduce market entry barriers and stimulate competition. But at the same time, they must take care not to jeopardize existing – or discourage future – investments.

“Finding the middle ground requires balance,” Maniewicz emphasized.

Pro-investment regulation means seeking equilibrium, so that operators compete with their investments while sharing key network resources, said Serge Abiteboul, a Board member at France’s Regulatory Authority for Electronic Communications and Post (ARCEP).

Data-driven regulation can empower users, drive the market in the right direction and help reach neglected areas or communities, Abiteboul added.

Alongside government-led investments, impartial regulatory legislation can assist to guide decision-making by private operators.

Operators due for licence renewal, for example, can be asked to commit voluntarily to new network developments in lieu of paying licence fees. Such incentives, explained Abiteboul, can promptly establish connectivity in areas identified by local authorities.

Spectrum sharing, network-sharing opportunities and finding the right balance between competing interests – new versus incumbent investors, or investor/operator versus customer/citizen – all serve as key enablers to boost connectivity.
Leading to achieve universal connectivity

Born into poverty in Senegal in the 1970s, Mariéme Jamme had the odds stacked against her. Marginalized and neglected, she lacked education and was trafficked as a young girl, she said.

Yet she did not allow difficult circumstances to stop her from finding purpose in life, eventually becoming a leader and role model for women in the world of information and communication technologies (ICTs).

Jamme found safety and made a new life for herself in the UK, where in just two years she learned seven coding languages at a local library in Surrey.

Transforming her newfound passion into activism, she now drives digital transformation for marginalized women and girls across the globe.

Her organization, iamtheCODE, aims to train one million women and girls as coders by 2030.

“I wanted to make sure that as I grew up as a woman, as I got my influence and my seat in this world, that we create and change systems.”

Mariéme Jamme
Founder, iamtheCODE

iamtheCODE aims to train one million women and girls as coders by 2030.

More here.
“I didn’t have big degrees and education,” she says. “But the one thing I did have was impatience for change. I wanted to make sure that as I grew up as a woman, as I got my influence and my seat in this world, that we create and change systems.”

**Impatient for change**

Jamme describes iamtheCODE as the first African-led global initiative of its kind. Her quest aligns with the global mission of the International Telecommunication Union (ITU) to connect the estimated 3.7 billion people who still lack access to digital services that could improve their lives.

At an ITU Road to Addis event on Leadership on 22 June, Jamme, a Generation Connect Visionaries Board member, said the world’s digital transformation was taking too long. “We must not wait anymore for people to beg for connectivity,” she stressed.

“Connecting the unconnected and enabling equitable digital transformation, above all, require leadership,” observed Doreen Bogdan-Martin, Director of the ITU Telecommunication Development Bureau.

“Leaders have often had a defining quality in common: the ability to identify a problem and mobilize communities to work with them in creating solutions,” she said. “We now look to leaders from all walks of life to provide...
the vision and the guidance that will mobilize global will, as well as direct actions towards achieving meaningful universal connectivity.”

**Channelling youth activism**

Lack of connectivity affects mostly young people in developing countries. Almost 60 per cent of Africa’s population is under 25, remarked Francis Xavier Inyangat, a Generation Connect youth envoy from Uganda. He called on his peers to look optimistically at the many opportunities offered by the ICT sector, including satellites, which he said could allow everyone high-speed data access, creating true Internet equality.

Another Generation Connect member, Sofia Valle from Brazil, pointed out how technology can expand participation and give voice to marginalized groups. “But to overcome the gender, digital or any other divide, we as young people need to mobilize and engage in politics.”

Youth can shape the future world by using the knowledge available thanks to technology, said Rula Ghani, First Lady of Afghanistan.

Sharing insights from her country’s recent history, she said that acquiring digital skills could help to rebuild communities, reconnect people, and allow them to find their place in society and reap the benefits of digital development.

Stephen Spengler, Chief Executive Officer of Intelsat and Chairman of ESOA – the EMEA (Europe, Middle East and Africa) Satellite Operator’s Association – noted the importance of outlining an inspiring vision, purpose and mission for young leaders and young employees today.

**Cause and effect**

Reflecting on successful types of leadership, Badri Younes, Deputy Associate Administrator for Space Communications and Navigation at the US National Aeronautics and Space Administration (NASA), said leaders need to inspire teams to explore the boundaries of their imagination. “In order to inspire others, leaders must be able to communicate a great vision,” he noted. “The knowledge and capabilities of the many will very often outweigh the knowledge and capability of the one.”
Achieving global broadband connectivity will require a focus on inclusion, innovation and responsibility, particularly to design and accelerate products that are socially and environmentally responsible, added Yolanda Cuba, MTN Group Vice President for Southern and East African Markets.

For Ursula Owusu-Ekuful, Minister of Communications and Digitalisation Ghana, “Leadership is cause, and everything else is effect.”

Without the right kind of leadership, involving all stakeholders in the decision-making process, not much gets done, she said. She cited an ongoing project to train more than 14,000 Ghanaians in digital skills as an example of a successful and inclusive leadership approach.

R.S. Sharma, Chairman of Telecom Regulatory Authority of India, said leaders need the courage to follow their own compass. “In technology, you should find your own path and not take the path travelled by others.”

**Next stop on the Road to Addis**

ITU’s Road to Addis discussion series aimed to build awareness, engage key stakeholders and communities, and provide an inclusive platform to discuss some of the key themes that will be addressed at the next World Telecommunication Development Conference (WTDC). It focused on six enablers of connectivity for sustainable development: partnerships, inclusion, financing, leadership, innovation, and youth.

The event focused on innovation took place on 21 July, 2021.
Broadband mapping: Key to universal connectivity

The swift adoption of digital tools during the COVID-19 pandemic has shown the power of information and communication technologies (ICTs) to improve daily lives – and how the inadequacy or outright lack of digital infrastructure can deprive entire communities of essential services.

Broadband mapping – whereby regulators assess service availability and quality locally, nationally, and regionally – is essential for informed decision-making. It is also a prerequisite for investment in sustainable, inclusive broadband infrastructure that leaves no one behind, agreed members of the Regional Regulatory Associations’ Meeting during the latest Global Symposium for Regulators, GSR-21.

The COVID-19 pandemic has made mapping exercises more important than ever before to identify gaps and boost digital access among vulnerable user groups and communities.
“Regulators need a good understanding of broadband mapping to offset negative impacts of COVID,” says Bridget Linzie, Executive Secretary of the Communications Regulators’ Association of Southern Africa (CRASA) and the meeting’s 2021 Chair.

Vladimir Daigele, a network development expert at the International Telecommunication Union (ITU), describes mapping as “important to understand the reality in a place, as it allows different stakeholders to come together and plan optimal network technologies and financing solutions.”

The discussions among regional regulators at GSR-21 centred around ways to promote broadband mapping tools, particularly to foster investment and competition aimed at achieving inclusive and sustainable connectivity. Regional associations can serve as a driving force, disseminating information, tools and guidelines among their members.

**Supporting universal access**

ITU’s Interactive Transmission Maps – tracking backbone connectivity over 20 million kilometres of global terrestrial networks involving nearly 550 operators – can help to shape infrastructure strategies to connect underserved or disconnected communities.

ITU is also updating the **ICT Infrastructure Business Planning Toolkit** to include 5G networks. The toolkit aims to support regulators and operators in designing optimal broadband network deployment in rural and isolated areas using these maps.

Ensuring universal access, even in a specific sub-sector like education, hinges on mapping the actual demand on the ground for connectivity. The Giga project, led jointly by ITU and UNICEF (the United Nations Children’s Fund), aiming to connect every school to the Internet, relies on geospatial infrastructure data available on the ITU maps.

In South Africa, mapping is underway to help achieve universal broadband access by 2025.

“Regulators have developed guidelines to analyse broadband gaps in areas with connectivity, as well as gaps in broadband demand, radio-frequency spectrum availability and investment in broadband infrastructure,” says Linzie.

In Central Africa, regulators hope mapping will serve to create a practical region-wide index of ICT infrastructure, either in place or planned.
“Thematic maps, with detailed information on active and passive ICT infrastructure in each country, will hopefully avoid overlapping construction and deployment,” says Bernice Edande Otye, Permanent Secretary of the Central African Assembly of Telecommunications Regulators (ARTAC).

**Empowering regulators**

The COVID-19 pandemic has underlined the crucial role of network security and resilience as part of sustainable development.

“An efficiently developed broadband mapping tool is useful not only to address connectivity gaps but also to address network incidents and monitor resilience,” says Nataliia Lado from the Eastern Partnership Electronic Communications Regulators Network (EaPeReg), representing Armenia, Azerbaijan, Belarus, Georgia, Moldova and Ukraine.

But providing broadband connectivity at reasonable costs calls for a major upfront investment.

“This will have to be done through collaboration between regulators and operators,” says Mohamed Chemani, Secretary-General of the Arab Regulators Network (AREGNET). “Legislation has to be adopted to encourage investors to work for digital inclusivity.”

Regulators, he added, need the right tools to collect relevant data, boost competition among market players and attract new investments.

**Fostering a harmonized approach**

Collaborative broadband mapping requires a common, harmonized approach. Guidelines from the Body of European Regulators for Electronic Communications (BEREC), for example, seek to ensure consistent mapping among national regulatory associations.

“The core guideline harmonizes our definitions, suggests which indicators to provide, and advises on which operators should provide the knowledge that we need to make these maps,” explains Annemarie Sipkes, Director of the Telecommunications, Transport and Postal Services Department at the Netherlands Authority for Consumers and Markets (ACM), and elected as BEREC Chair for 2022.

Another guideline covers ways to verify information. “It’s not just about the availability of networks,” Sipkes says. “The quality of service is also important. Otherwise, how do we [regulators] verify what the operators are telling us is happening?”

— Annemarie Sipkes

Director, ACM, the Netherlands
Regional associations can be key drivers for harmonization, according to Daigele.

Information on national mapping systems helps to increase awareness even between regulators and governments at the national level, as well as feeding into regional harmonization initiatives and revealing cross-border collaboration opportunities.

ITU can support regulatory associations in this regard, adds Daigele. “It’s about sharing information and having a forum where we can sit together and discuss how to harmonize methodologies used in different regions.”

Other barriers

Beyond infrastructure, less tangible barriers, such as affordability or lack of digital skills can also stop people from using the Internet.

Countries in Latin America and the Caribbean, for example, grapple not just with redundant regulatory frameworks and a lack of long-term spectrum management, but also with a major gap in ICT skills, says Oscar León, Executive Secretary of the Inter-American Telecommunication Commission (CITEL).

After several years of acceleration, the roll-out of mobile-broadband networks slowed down in 2020, according to the latest ITU data. About 85 per cent of the global population is now thought to receive 4G network coverage — double the level in 2015.

Regulatory associations say mapping tools, along with other ITU platforms and data such as the ITU Regional Regulatory Associations Portal, will help to improve infrastructure deployment and sharing, reduce costs and ultimately ensure affordable access for consumers worldwide.

Regulatory associations can reach out to ITU for support with exchanges of best practices, defining common aims and terminology and harmonizing data collection and mapping methodologies.

Regional and interregional cooperation is essential, GSR-21 participants noted.
GSR-21 Best Practice Guidelines

Regulatory uplift for financing digital infrastructure, access and use

Inducing new, effective and agile financing mechanisms to digital infrastructure, access and use

Prototyping regulatory patterns for the post-COVID digital world

Transformational leadership to unleash the power of emerging technologies and business models

"I am confident that this year’s GSR Best Practice Guidelines will help countries optimize their regulatory strategies to drive faster and more inclusive connectivity."

Doreen Bogdan-Martin
Director, Telecommunication Development Bureau (BDT), International Telecommunication Union (ITU)

"I call upon regulators everywhere to leverage the Guidelines in adopting and implementing globally agreeable approaches, that are relevant to their national circumstances and leverage collaboration across the board."

Mercy Wanjau
Communications Authority of Kenya, and GSR-21 Chair

Join ITU’s online communities on your favourite channel
Connect2Include: Making digital accessibility a reality for all

Despite having no limbs, Joanne O’Riordan can type 42 words per minute. But while attending elementary school in rural Ireland, the 24-year-old sports journalist used to struggle to complete her homework.

It was not for lack of arms and legs, she said, but rather because of her limited access to broadband Internet.

“As we move into the future, broadband is going to be as vital to social and economic advancement as motorways, dams or electricity were in the 20th Century,” O’Riordan said during an ITU Road to Addis Connect2Include discussion.
The online session formed part of the Road to Addis series of events leading up to the next World Telecommunication Development Conference (WTDC), which will take place from 6 to 15 June 2022 and hosted by the Government of Ethiopia.

The discussion addressed the challenges still faced by specific groups of people – women and girls, youth and the elderly, persons with disabilities, children, indigenous people, and those living in remote areas – as obstacles to achieving true and meaningful connectivity for everyone.

O’Riordan, who was born limbless due to Total Amelia syndrome, eventually learned to type and to code since there was no software that could accommodate her disability. At Connect2Include, she shared how digital technologies have been instrumental in the pursuit of her life’s mission: advocating for equitable access to employment, education and health care.

“We need to make sure that national planning and public and private sector investments are involved – and that investment is done correctly, that there are no unfair disparities, and that there is a human interaction with users.”

**People-centred technology**

Half of the world’s population remains unconnected and is left out from the benefits provided by information and communication technologies (ICTs). That includes approximately 2 billion women, and 2.2 billion young people under the age of 25 without fixed broadband Internet access at home.

“In our post-COVID-19 world, digital exclusion increasingly means economic, social and educational exclusion; an exclusion from a whole raft of new opportunities that those of us already connected take for granted,” said Doreen Bogdan-Martin, Director of the ITU Telecommunication Development Bureau. “Digital exclusion impacts certain demographics more than others, such as women and girls, the elderly, persons with disabilities, children, indigenous groups and people living in remote areas.”

The President of Ethiopia, Sahle-Work Zehle, said technologies need to accommodate people rather than the other way around. “Digital inclusion has two basic underlying concepts: access to affordable and high-quality technology, and digital literacy and competency that is needed to utilize technology efficiently,” she explained.

“Ensuring that no one is left behind means ensuring that technology is people-centred.”
Lissette Gonzalez of Telecomunicaciones Indigenas Comunitarias A.C. in Mexico suggested thinking of technology as a human right that can enable us to make decisions. “We must own and adjust technology to the realities of our context and territories, improving the quality of our lives,” Gonzalez said. “If we think of technology as part of our natural environment, we will build it with a more human focus.”

More than a privilege

Claudia Gordon, Director of Government and Compliance at T-Mobile Accessibility and a lawyer by profession, also had trouble finding affordable digital tools and services tailored to meet her specific needs.

As a deaf person, she only got her first television captioning box when she turned 18. Captioned television had been unavailable in Jamaica where she grew up.

More than 1 billion people in the world are living with some form of disability, with consequent challenges for digital engagement.

“Access to ICTs is more than just a privilege. It should be considered a right, especially for those with disabilities,” Gordon said. “ICTs empower us and give us a sense of independence. Without access to ICTs, I wouldn’t have been able to become an attorney. So many people around the world in the same position really need ICTs for those critical skills.”

She expresses pride in her company taking accessibility seriously and innovating where needed. Tailored digital solutions include captioned telephones for people with hearing loss, or Internet protocol and video relay services for deaf-blind persons.

“We need to consider ICTs broadly and think of all types of disabilities,” she added. “And we need to innovate not for, but with, persons with disabilities, because they know what solutions work for them.”

Judith M. Williams
Head of People Sustainability, Senior Vice President, Chief Diversity and Inclusion Officer, SAP

We are only able to improve people’s lives if we have a diverse and inclusive workforce where we empower people to run at their best.”
Diversity as a driver of talent

According to Judith M. Williams, Head of People Sustainability, Senior Vice President, and Chief Diversity and Inclusion Officer at SAP, diversity drives innovation.

“We are only able to improve people’s lives if we have a diverse and inclusive workforce where we empower people to run at their best,” she says.

A company roadmap keeps every product accessible to those with disabilities.

For example, an Autism at Work programme adapts hiring and onboarding processes to meet the needs of autistic employees, enabling the recruitment of talent that might have been overlooked.

Next stop on the Road to Addis

The Road to Addis series aims to build awareness, engage key stakeholders and communities, and provides an inclusive platform to discuss some of the key themes that will be addressed at the next WTDC. It focuses on six enablers of connectivity for sustainable development: partnerships, inclusion, financing, leadership, innovation and youth.

The Road to Addis event culminated in September, with outcomes presented at the United Nations General Assembly.

To engage with ITU and contribute to the impact of WTDC-22, contact the WTDC-22 team here.
What happens when youth and regulators collaborate on ICT policy?

According to the United Nations’ World Youth Report, for every 20 people in the world today, at least three are between 15 and 24 years old.

They are part of the first generation to come of age surrounded by smartphones and social media platforms.

When it comes to information and communication technology (ICT) policy, young people’s unique perspectives – their experiences, challenges and aspirations in the digital era – make them valuable collaborators for the regulatory community.
Empowering voices

*Generation Connect*, an initiative engaging youth groups representing regions around the world, aims to put unique youth perspectives in the spotlight in the work of the International Telecommunication Union (ITU).

The experience has been “eye-opening and a step forward in the right direction,” according to Daniel Kalemi, a software engineer and member of the Generation Connect Europe Youth Group.

During a virtual session at the ITU Global Symposium for Regulators 2021 (GSR-21), telecom regulators from around the world learned about young people’s specific needs and concerns.

Kalemi and his colleagues, in turn, learned about key regulatory processes, helping young people understand some of the industry’s most pressing challenges.

The online interactions required by COVID-19 may have served to accelerate the world’s digital transformation. Yet many of the world’s youth continue to grapple with a persistent digital divide.
According to ITU statistics, while nearly everyone aged 15–24 now uses the Internet in developed countries, the usage rate in this key age group falls to just 38 per cent in the world’s 46 least-developed countries.

Girls and women face additional barriers to digital access. Initiatives to drive digital transformation, therefore, must empower diverse voices, not just pay lip service to building a digitally inclusive future.

“Working with ITU means I get to share my experiences and represent the young women and girls in my community,” explained Valeria Waswa of the Generation Connect Africa Youth Group. “I can ensure that their challenges are factored into policies.”

Waswa’s law background helps inform ICT policies that serve youth interests. She called for greater attention to mentorship, citing young people’s “need to be trained by people who are ahead of us so that we can be more impactful in lending our voice to shape these policies.”

**Championing innovation**

Young people tend to use digital platforms the most, yet their participation in the regulation process is still weak, said Helena Fernandez, Director of Finance and Administration at the Communications Regulatory Authority of Mozambique.

With current generations facing challenges around income, digital literacy and access to connectivity, Fernandez called for regulations that champion innovation. “We need to regulate for the future,” she says, urging investments in digital literacy and affordable mobile data plans.

In Mozambique, regulators have helped establish “digital parks” providing wider Internet access and collaborated with telecom operators on projects where students can contribute to telecommunication solutions.

Fernandez praised forums such as ITU Digital World, whose small and medium-sized enterprise (SME) programme engages young innovators and entrepreneurs.
Forward-thinking policies

Regulations will need to be cross-sectoral to meet complex future business and socio-economic needs.

Telecom and ICT regulators, therefore, must actively consult with regulators and stakeholders from other sectors, said Ihita Gangavarapu, Electronics and Communications Engineer and member of the Generation Connect Visionaries Board.

“The speed of global ICT advancements and the diversity of use cases across multiple sectors like health and transportation,” she noted, “mean future regulations will have even more cross-sectoral implications.”

Gangavarapu outlined three key areas to address in future regulation: the global digital divide; security and privacy with emerging technologies (including the Internet of Things and solutions based on artificial intelligence (AI)); and identification and authentication in ICT services for financial inclusion.

Industry players, too, can provide key insights into how young people use technology. This can help regulators understand fast-evolving trends, said Belinda Exelby, Head of International Relations at GSMA, representing mobile network operators worldwide, and steering committee chair of EQUALS, a global partnership for gender equality in the digital age.

"Innovation almost always precedes regulation, and rightly so,” noted Exelby. “The most important duty of regulators is to ensure a framework that encourages investment and innovation, often by the young. That brings new products and services to the market, which helps to improve people’s lives."
Co-designing solutions to keep children safe online

For users of all ages, technology has become a lifeline for learning, playing, socializing and obtaining services – at least for people with devices and Internet access.

But while children have spent more hours online lately, so have predatory adults.

Given the restrictions imposed by the COVID-19 pandemic, simply limiting kids’ screen time is no longer enough to keep them safe.

For regulators around the world, this makes policies to ensure online safety more urgent than ever.

“A lot of the rules were thrown out of the window due to COVID-19 because technology became the learning platform,” said Mercy Wanjau of the Communications Authority of Kenya and Chair of this year’s Global Symposium of Regulators, where she led a recent discussion on child online safety. “But the issue of child online protection has remained and will stay into the future.”
Evidence confirms the need to act without delay.

“Law enforcement and national helplines indicate a significant increase in reports of online abuse and violence,” noted Cornelius Williams, Associate Director and Global Chief of Child Protection at UNICEF (the United Nations Children’s Fund). “In building back better from COVID-19, a strong regulatory framework is important to provide every child with the opportunity to benefit from engaging with a digital environment while keeping them safe from harm.”

The four R’s

Governments, policymakers, regulators and private tech companies are all considering ways to keep children safe online – from restricting children’s gaming to a few hours a week to scanning cloud-connected devices for child sexual abuse material.

For one student taking part at this year’s Global Symposium for Regulators (GSR-21), online protection should safeguard children from harm without keeping them from exploring opportunities in digital spaces. “That’s why regulators are so important,” she told regulators at the meeting. “The most important thing we can do is to promote online citizenship to improve each other’s experiences.”
A citizen-focused safety approach is needed to help those at risk of harm, said Rebecca Razavi, Chief Operating Officer and General Manager of Australia’s e-Safety Commissioner.

The world’s first dedicated online safety regulator, the Commissioner holds civil powers to act against cyberbullying and compel takedowns of illegal or harmful content, including child sexual abuse material and other non-consensual sharing of intimate images.

“We talk about the four Rs of the digital age: respect, resilience, responsibility and reasoning,” Razavi said.

With some children gaining Internet access before they turn three years of age, conversations about online safety must begin early. The focus can shift to critical reasoning skills as a child grows older and faces increasing pressures and dangers in the online world.

**Child-led solutions**

Regulating for safety doesn’t mean online spaces can’t be fun.

TikTok, for example, is thinking hard about how to design for children, noted Alexandra Evans, the social media company’s Head of Child Safety Public Policy for Europe. “We work with child development experts to build safety and age-appropriate design into our platform.”

Co-creating with young people is crucial for effective audience engagement and protection, she added.

In TikTok’s case, this means creating “child-led, not adult-assumed,” digital solutions.

“We as adults do not have a digital childhood or a digital adolescence to fall back on when making decisions for young people,” Evans remarked. “They know their own needs and their experiences better than anybody else.”
While tech companies should not forget the fun element of online experiences, keeping a child safe “takes a village,” said Almudena Lara, Senior Manager for Child Safety at Google. Still, “it is the role of parents, community, schools, educators, regulators and of course, the technology sector.”

While regulations can effectively block children’s access to certain services, children will try to bypass those restrictions. Consequently, Lara pointed out how “the tech sector needs to put effort into designing products that are safe, but also products where children actually want to spend time.”

Collective responsibility

Young people concur on the need for their input on products and services for the digital generation.

Another student at GSR-21 said: “When it comes to developing and implementing policy, it’s time that the industry, government regulators, law enforcement agencies, academics, and the wider society in general all take responsibility to ensure that everyone has a seat at this table, especially young people, making sure that decisions are made for with and by students.”

At the same time, any business that could affect child rights online needs a clear regulatory framework with mechanisms in place to monitor and address violations.

“Respecting child rights is not optional,” stated UNICEF’s Williams. “This calls for intergovernmental collaboration, given the transnational nature of the digital landscape.”

“Respecting child rights is not optional and calls for intergovernmental collaboration, given the transnational nature of the digital landscape.”

Cornelius Williams
Associate Director and Global Chief of Child Protection, UNICEF

“The tech sector needs to put effort into designing products that are safe, but also products where children actually want to spend time.”

Almudena Lara
Child Safety Senior Manager, Google
Wanted: More women leaders in tech

The information and communication technology (ICT) sector needs more women in leadership roles to craft inclusive policies and regulations, said panellists during a fireside chat organized by the Network of Women for the World Telecommunication Development Conference – NoW4WTDC – at the Global Symposium for Regulators 2021 (GSR-21).

But to draw and retain women as leaders, a supportive environment is key.

“Creating gender balance and increasing diversity in digital developments is not optional,” affirmed Doreen Bogdan-Martin, Director, Telecommunication Development Bureau at the International Telecommunication Union (ITU). “Inclusivity in all its aspects is a precursor to getting meaningful connectivity out to all.”

Women remain heavily underrepresented in technology jobs today, and if nothing is done about it, could remain so in the science, technology, engineering and mathematics (STEM) positions of the future.
“Women also need to shape the future when it comes to technology,” said Sabine Holl, IBM’s Vice-President for Technical Sales and Chief Technology Officer for the Middle East and Africa. “We are half of the world’s population, yet few of us shape how the technology we use daily will look next.”

The rapid evolution of the tech sector has kept Aileen Chia engrossed for decades. Chia holds the posts of Assistant CEO (Connectivity and Competition), Director-General (Telecoms and Post) at Singapore’s Infocomm Media Development Authority (IMDA).

“I found it hugely gratifying in my regulatory role to witness well-designed policies and frameworks bringing so much benefit to people and our business,” she said.

Supportive network

Amy Alvarez, AT&T’s Assistant Vice President of International External and Regulatory Affairs, advises aspiring women of the future:

“Look for somebody who inspires you, build your network, find a mentor, and believe in yourself.”

“We need to focus on bringing women into technical roles,” says Alvarez.
“Time is needed to encourage them, retain them, grow their career and make it clear that the support is there, even if you have a family on the way or you need to take care of your friends.”

Switched-on leadership

Targeted programmes can help to make sure women flourish in technical roles. Along with allowing for parental leave, for instance, companies may also need to plan for re-entry opportunities to senior positions.

“To empower women to go on this path, you also need to have the buy-in of the overall leadership team, with measurable goals,” added Holl.

To make the most of women’s talent, organizations must be flexible and empathetic to the needs of all employees, she emphasized.

NOW4WTDC is a platform for collaboration and exchange of information to increase the number of women participating in meetings of ITU’s Telecommunication Development Sector (ITU-D) and to encourage more women to take up leadership roles in the preparatory processes for the next World Telecommunication Development Conference, WTDC-22.

A call for mentors and mentees is now open. More here.
Building the digital world. Together.

From September to December 2021.
Online and open to all.

At ITU Digital World 2021, we believe in the power of technology to improve lives everywhere. We offer a platform for international and inter-sectoral collaboration to drive meaningful, inclusive and sustainable connectivity. We bring together the right stakeholders from government and industry, emerging and developing markets to share knowledge and innovations, explore the key trends in technology, strategy and policy, network, exhibit — and maximize the potential of the digital age for everyone, everywhere.

Be a part of it. Visit digitalworld@itu.int to find out more.