



Tech v COVID-19: Managing the crisis



Tech's response to COVID-19

Houlin Zhao

ITU Secretary-General

■ The unprecedented COVID-19 crisis has demonstrated the vital role of digital technologies.

Now more than ever, ITU is committed to leveraging its diverse membership to make humanity safer, stronger and more connected.

The resilience of networks and people since the onset of this pandemic has indeed been extraordinary. The world has seen the accelerated digitalization of many businesses and services, including teleworking and video conferencing systems in and out of the workplace, access to health care, education and essential goods and services.

In this edition of the ITU News Magazine you will learn about ITU and the information and technology (ICT) sector's response to COVID-19, and the importance of global connectivity and bridging the digital divide.

You will find a range of useful expert insights on how ICTs are being leveraged in the response to the pandemic, and how ITU and its partners will play a crucial part in building back better.

To learn about the full scope of ITU's work in response to the current global crisis, I encourage you to take a look at ITU's COVID-19 dedicated [webpage](#). It is updated regularly with highlights of all ITU's initiatives, events, products and partnerships related to the pandemic, and the technology response to effectively address COVID-19. ■



“
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Houlin Zhao

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ITU Secretary-General

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Editor-in-Chief: Matthew Clark
Art Editor: Christine Vanoli
Editorial Assistant: Angela Smith
Editorial Coordinator & Copywriter: Nicole Harper

Editorial office:
Tel.: +41 22 730 5723/5683
E-mail: itunews@itu.int

Mailing address:
International Telecommunication Union
Place des Nations
CH-1211 Geneva 20 (Switzerland)

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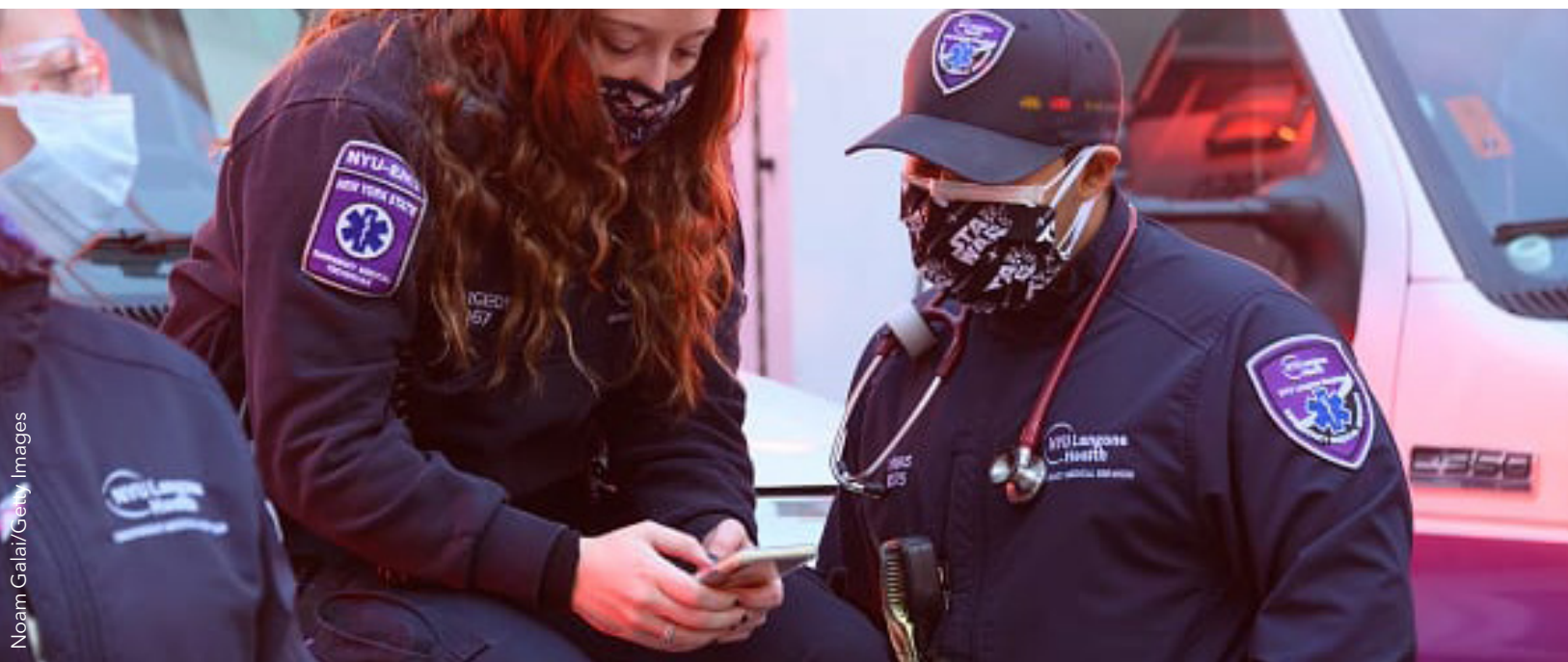
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Noam Galai/Getty Images

Sharing best practices on digital cooperation during COVID-19 – and beyond

By ITU News

■ COVID-19 has presented a stress test for governments worldwide, with the Internet playing a crucial role in keeping critical infrastructure and resources connected and available.

For instance, reliable, high-speed Internet is key to ensuring that hospitals and medical institutions have access to global information networks and resources necessary to fight the virus. Broadband connectivity is also now absolutely

crucial for educational institutions and businesses to continue to provide essential services.

The unprecedented global health emergency is taxing networks and platforms to the limit, with some operators and platforms reporting demand spikes as high as 800 per cent.

“The traffic jams have moved from the streets to online, as we’ve seen increased traffic, online and data usage,”

“

The traffic jams have moved from the streets to online, as we’ve seen increased traffic, online and data usage.

”

H.E Ursula Owusu-Ekuful
Minister of Communications,
Ghana

said H.E Ursula Owusu-Ekuful, Minister of Communications of Ghana, during the second of a webinar series on [Digital Cooperation during COVID-19 and beyond](#). The webinars were organized by ITU and the Office of the UN Under Secretary-General Fabrizio Hochschild, with a view to helping identify solutions and common approaches and strategies from different nations and stakeholders.

"I think what COVID has done, is actually to put the will to get the world connected right in front of us – and we rallied around that will," said Doreen Bogdan-Martin, Director of ITU's Telecommunication Development Bureau. "We have come together in these very difficult circumstances and we have come up with innovative practices to actually better connect people who actually weren't connected before."

With the theme of Best Practices: What Works, What Doesn't, the webinar looked at how key public and private sector stakeholders from countries across the world are working together to meet unprecedented demand and identified lessons learned in keeping the networks the whole world is now relying on up and running.

“

I think what COVID has done, is actually to put the will to get the world connected right in front of us — and we rallied around that will.

”

Doreen Bogdan-Martin

Director of ITU's
Telecommunication
Development Bureau

Meeting network demands

Many speakers highlighted the need to create an enabling policy and regulatory environment to meet current challenges. Agile, flexible and collaborative solutions were presented, including facilitating access to spectrum resources during the crisis for the purpose of relieving congestion, expanding or improving broadband access – as well as enabling temporary spectrum allocations and implementing emergency communications preparedness plans.

"All of us have to imagine crises of this type to make sure that our networks are sized properly for a surge in demand, and that critical equipment is available for rapid

deployment. Likewise, regulators and governments have to be ready to accelerate administrative action," said Stephen Spengler, CEO of IntelSat.

In Ghana, for example, the Ministry provided additional spectrum to two telecom companies for three months to enable them to increase their capacity; the regulator gave approval to use UMTS technology over 2G to provide data to all sectors of the network.

Settlement fees were waived for electronic payment services.

In Singapore, local Internet data traffic spiked by 60 per cent following the outbreak of COVID-19, said Jane Lim, Assistant Chief Executive of Sectoral Transformation for the InfoComm Media Development Authority (IMDA) of Singapore.

"Our systems have been able to support the surge," Lim told the roughly 330 participants joining the webinar. "And we've also announced that we will continue to work closely with the telcos to make immediate investments to upgrade the networks and better bolster our nationwide network capacity as part of our Smart Nation strategy."

“We set aside nearly SG\$ 60 billion – about 12 per cent of our GDP – to support businesses, workers and households during these turbulent times,” said Lim.

Continued investment needed

“The networks were made for this,” said Craig Labovitz, Chief Technology Officer at Nokia. “It’s important as a global society that we continue these investments in the infrastructure, and in the coordination of building out and interconnecting the different networks.”

““

It’s important as a global society that we continue these investments in the infrastructure, and in the coordination of building out and interconnecting the different networks.

””

Craig Labovitz

Chief Technology Officer, Nokia

But resilient infrastructure is only part of the solution, highlighted United Nations Under Secretary-General Fabrizio Hochschild.

““

Some of the problems relate not to the presence of infrastructure, but to the presence of affordable access...

””

Fabrizio Hochschild

United Nations Under Secretary-General

“Some of the problems relate not to the presence of infrastructure, but to the presence of affordable access... and some of the problems, even here in New York City, relate to absence of hardware,” he said. He noted that the upcoming Secretary-Generals’ Roadmap on Digital Cooperation would tackle many of the key issues being highlighted, and that further cooperation with all stakeholders would be critical.

The stellar line-up of speakers was followed by reactions and comments from a number of participants, who presented practical and widespread efforts to connect communities during this health crisis – including solutions to meet network and hardware needs.

For example, Máximo Torero Cullen, Chief Economist/Assistant Director-General of the Economic and Social Development Department of FAO, highlighted that the government of Peru had distributed roughly 600 000 tablets to rural areas to enable online education. Meanwhile, Facebook had directed nearly two billion people across its various applications to expert health resources, according to Robert Pepper, Director for Connectivity Policy at Facebook.

New urgency. Lasting impact?

The COVID-19 pandemic has injected new urgency into efforts to bring meaningful connectivity and key digital services – from education to finance and health services – to communities across the globe.

“

We need to look at what digital can do, not just to get us through this emergency, but to get the world back on its feet.

”

Doreen Bogdan-Martin

Director of ITU's
Telecommunication
Development Bureau

Participants agreed that while the focus was on short-term quick fixes, there is a need to think about how to implement lasting resilience across all aspects of connectivity in the medium- and long-term.

“We need to look at what digital can do, not just to get us through this emergency, but to get the world back on its feet,” said ITU Director of Telecommunications Development Doreen Bogdan-Martin.

“How might we leverage this crisis to create an environment that is less focused on profit, and more focused on protecting our planet, and its people?” She encouraged participants to work on a longer-term vision of how we can leverage the Expert Roundtable's discussions to follow-up on the recommendations of the Secretary-General's High-Level Panel on Digital Cooperation, to get economies and societies back on track with the Agenda 2030 in focus.

Closing the connectivity gap

Closing the connectivity gap – currently estimated at around 49 per cent – is crucial to this goal, said Jane Coffin, Senior Vice President, Internet Growth, Internet Society. She launched a collaborative call to action to reduce the global connectivity gap to 20 per cent by 2030.

“I think we should aim for universal connectivity by 2030,” countered Fabrizio Hochschild.

IntelSat's Spengler pointed out that we have the technology to bring everyone in the world online today. What is missing is the political will to work together and make it happen, he said.

Can we change that?

“

It's a matter of collaboration; we have the technology to close the connectivity gap...

”

Stephen Spengler
CEO of IntelSat

“It's a matter of collaboration; we have the technology to close the connectivity gap... we just have to have the will to work together and put together the projects and the funding to make it happen,” said Spengler. “So that is our challenge – and it's an opportunity as well.” ■

Note: ITU developed and released the [REG4COVID](#) platform, a global repository of emergency actions that the digital community around the world is already taking to ensure availability, accessibility and resilience of networks and resources.





Digital Cooperation webinars

ITU and the office of the UN Under Secretary-General Fabrizio Hochschild co-organized a [series of webinars](#) on digital cooperation in response to COVID-19.

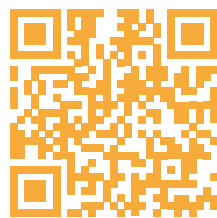
The webinar series focused on how to secure safe, stable, affordable and inclusive connectivity in this time of crisis and helped identify possible solutions and common approaches and strategies from different nations and stakeholders.

Webinar topics

**Connectivity –
Situation
Assessment:
What We Know,
What We Still
Need to Know**



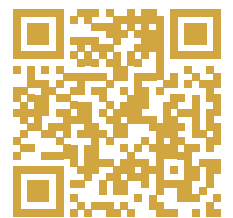
[Read more](#)



**Connectivity –
Best Practices:
COVID-19
Initiatives, What
Works, What
Doesn't**



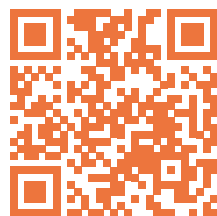
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**The «Infodemic»
– Misinformation
and
Disinformation
During COVID-19**



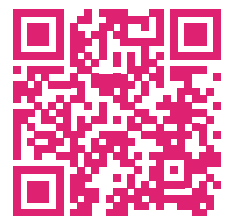
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**Online Safety and
Security During
COVID-19**



[Read more](#)



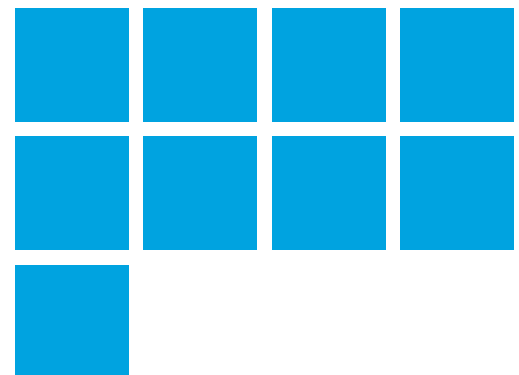
**Public Health,
Digital Responses
and Human
Rights**



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COVID-19: Here's how some countries were addressing the digital education divide

By ITU News

■ The global COVID-19 pandemic forced schools across the world to close, impacting more than 1.5 billion children and youth learners, according to The United Nations Educational, Scientific and Cultural Organization (UNESCO).

Governments were urgently working to help parents, teachers and students find [digital learning solutions](#) to provide some level of continuity in such uncertain times.

“

Children from marginalized backgrounds will lose out on their education — and we cannot let this happen.

”

Audrey Azoulay
Director-General, UNESCO

But what about those students without regular or affordable internet access? How would they be able to continue their learning during this time?

To meet the urgent need for education, UNESCO launched a [global partnership](#) to support countries in scaling up their best distance learning practices and reaching children and youth who are most at risk.

The gravest danger, said UNESCO Director-General Audrey Azoulay, is that “children from marginalized backgrounds will lose out on their education – and we cannot let this happen.”

“The scale of the challenge demands innovation, partnership and solidarity.” said Azoulay.

The coalition aims to make a difference by: bringing as many actors and resources on board for an effective and unified response; maximizing impact while avoiding overlap with a view to reaching the most disadvantaged and those at risk of exclusion; and matching national needs and global solutions by bringing global and local partners together for effective and immediate solutions.

ITU, an organization fully committed to connecting the world, is part of that coalition, which also includes private-sector partners such as Microsoft, GSMA, Weidong, Google, Facebook, Zoom, KPMG and Coursera, who are “contributing resources and their expertise around technology, notably connectivity, and capacity strengthening.”

COVID-19 and the digital divide

Indeed, COVID-19 is [exposing the digital education divide](#).

Equity in access to information and communication technology (ICT)-based learning is a [major concern](#), as learners from under-privileged backgrounds tend to have less access to computers and other devices outside the schools.

According to ITU data, 93 per cent of the global population is within reach of mobile broadband (3G network or higher), and yet 3.6 billion people remain offline.

In some cases, they live in areas with no electricity and poor or no Internet connectivity.

According to ITU data, 93 per cent of the global population is within reach of mobile broadband (3G network or higher), and yet [3.6 billion people remain offline](#). In the event of a global health crisis, Internet access is crucial for the day-to-day economy – and a vital lifeline for those affected.

Actions to address the digital education divide

Various immediate actions were taken at the country level to address the digital education divide.

Italy, for example, announced an 85 million-Euro package to support distance learning for 8.5 million students and improve connectivity in isolated areas.

China provided computers to students from low-income families and offering mobile data packages and telecommunication subsidies for students.



In France, efforts were made to lend devices and provide printed assignments to the 5 per cent of learners without access to the Internet or computers.

To ease the disruption, the United Arab Emirates created a hotline for teachers and students to seek technical support if they faced any difficulties.

In Washington State, United States, the schools were not encouraged to provide online learning services unless equitable access was ensured.

Various immediate actions were taken at the country level to address the digital education divide.

In Portugal, to tackle the fact that not all students have access to Internet at home, the government suggested a partnership with the post office services to deliver working sheets to be done at home.

These are just a few of the many efforts to help provide some learning continuity for less-connected students in this difficult time – and also hopefully contribute to the much-needed closure of the digital divide. ■



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Learn more about the barriers that prevent worldwide access and how [ITU](#) works to close the overall digital divide.





Beyond contact tracing: How new e-health tools are being deployed to fight COVID-19

By ITU News

■ When most people think of pandemic-related technologies, their minds turn to contact tracing applications powered by AI algorithms that many governments, including China, the Russian Federation, the Republic of Korea and the United Kingdom, have deployed. These mobile apps are designed to support national policies aimed at containing the virus and to encourage the uptake of preventative measures by monitoring quarantine compliance and to track infections.

But what other innovative information and communication technology (ICT) solutions are being used to combat COVID-19 – and could these serve to mitigate or even prevent future pandemics? This idea was debated in the latest ITU Telecommunication Development Sector (ITU-D) Study Group 2 public webinar on [New e-health solutions to fight pandemics with ICT](#), addressing Question 2/2: Telecommunications/ICTs for e-Health.

“While contact tracing is a big intervention area where we see governments engaged in facilitating deployment of innovative apps, some for the first time, e-health solutions can be used in many different ways, from preventative measures to compliance monitoring,” said Hani Eskandar, ITU’s Senior Coordinator of Digital Services, who moderated the discussion.

“

A diverse set of novel e-health solutions are being piloted at all stages of the COVID-19 pandemic.

”

Mario Romao

Global Director for Digital Health Policy, Intel Corporation

Indeed, “a diverse set of novel e-health solutions are being piloted at all stages of the COVID-19 pandemic,” affirmed Mario Romao, Global Director for Digital Health Policy, Intel Corporation, who presented examples deployed during detection to prevention to response and recovery. Before the pandemic, he added, the very first “digital smoke signals” from Wuhan were detected by the AI of Canadian startup BlueDot in the final days of 2019.

Multiple pandemic intervention points

E-health refers to the use of ICTs to support health needs, while telemedicine is considered the part of e-health where telecommunication systems allow the interconnection of remote locations to enable remote access to distant medical resources and expertise.

In pandemics, telemedicine is an often-overlooked response that is essential at every stage, from prevention through to recovery. While e-health tools have enabled mental healthcare workers to be among the first responders, virtual solutions must remain available well before and long after initial outbreaks.

“In a pandemic, mental health issues affect not only frontline workers, healthcare professionals and patients, but also the general population,” said Malina Jordanova, Associate Professor at the Bulgarian Academy of Sciences. She highlighted the importance of prevention by supporting healthy citizens who are under added pressure, since it is easier and more cost-effective to cope with a mild case of anxiety than to treat depression for years.

“

In a pandemic, mental health issues affect not only frontline workers, healthcare professionals and patients, but also the general population.

”

Malina Jordanova

Associate Professor, Bulgarian Academy of Sciences

Tackling the prevention side in a pandemic is not a new tactic, said Isao Nakajima, Professor at Seisa University. The concept of Targeted Antiviral Prophylaxis or TAP traces its origins back to 18th century Japan, where preventative medicine would be distributed nationwide under a “value first, money later” business model, he said.



Built on the old, augmented by the new

Other experts showed how many innovative digital health solutions are not entirely novel but rather hybrids of older and emerging ICT. Most applications are also related to healthcare, as Turhan Muluk, Telecom Policy Director at Intel Corporation, pointed out. In China, for example, the largest share of sectoral distribution of 5G applications is medical care, he said. Mr Muluk also highlighted how older technologies such as WiFi and newer ones such as 5G are complimentary and can form useful symbiotic relationships.

A real-life example was shared by Hirokazu Tashiro, Senior Expert at NTT Data Corporation, whose recent proof-of-concept combines existing medical technology like radiology with AI and machine learning. Initial testing of the model in an Indian COVID-designated hospital revealed that the AI matched human radiologists' performance in detecting the presence of COVID-19 from chest x-rays.

The results of the initial testing show that medical image AI has the potential to be used as an effective triage support when PCR testing systems are not in place, said Mr Tashiro. PCR or polymerase chain reaction is a chemical reaction that identifies bits of DNA to diagnose an infection and is currently the standard test for detecting SARS CoV-2.

Another example was shared by Teppei Sakano, CEO and Founder of Allm Inc., whose stroke detection app evolved into a cross-border telemedicine platform powered by doctor-to-doctor networks. In addition to patient monitoring capabilities, Mr Sakano explained how Allm applications can integrate with other technologies, such as those performing AI diagnosis using simple x-ray images.

Radiologists at teleradiology centres in Japan, Brazil, and the United States can now offer faster and more affordable image diagnosis remotely, within hours, and at a cost of mere cents per image, said Sakano.

“

We must find innovative approaches to solve such issues so that we might leverage the full pandemic-fighting power of ICT.

”

Hani Eskandar

Senior Coordinator of Digital Services, ITU

Diverse e-health solutions require robust data governance

The expert panellists showcased a variety of e-health solutions that can be powerful tools against a pandemic – but most are only as good as the training data that feeds them. Robust data governance mechanisms are therefore key globally, not only for individual privacy protection, but to make cross-border health data sharing possible to power more tools like those shared by Mr Sakano.



Subscribe to the [ITU-D mailing list here](#).

ITU members can help by raising awareness about e-health solutions among healthcare professionals, donors, decision-makers, and customers, answering questions such as: What virtual tools are available and where? How can we deploy them and what is the cost? These are the main stoppers for implementing many e-health services, said Professor Jordanova.

Chairman of ITU-D Study Group 2 Ahmad Sharafat emphasized the increasingly vital role of ICT in mitigating and responding to pandemics like COVID-19.



The [New e-health solutions to fight pandemics with ICT](#) webinar showed there are many reasons to be hopeful while remaining mindful of the barriers that remain. As moderator Mr Eskandar said, “While we are seeing encouraging examples, challenges persist – especially concerns about privacy and personal data security. Many countries are reluctant to use digital innovation in this context, but we must find innovative approaches to solve such issues so that we might leverage the full pandemic-fighting power of ICT.” ■



How cloud computing has supported the COVID-19 response

By ITU News

■ The global COVID-19 pandemic has forced us to reinvent how we work, learn, help, engage and socialize.

Cloud computing has played a crucial role in enabling businesses and governments to quickly apply solutions to respond to the crisis and maintain continuity.

Cloud computing, often referred to as “the Cloud”, is defined by ITU as a paradigm for enabling network access to a scalable and elastic pool of shareable physical or virtual resources with self-service provisioning and administration on-demand.

“

Cloud computing represents the catalyst and the enabler of the important technological shift that was already well underway before COVID-19.

”

Doreen Bogdan-Martin

Director of ITU's
Telecommunication
Development Bureau



Follow the work of [ITU-D Study Group 1 Question 3/1](#) “Emerging technologies, including cloud computing, m-services, and OTTs”.

“Cloud computing represents the catalyst and the enabler of the important technological shift that was already well underway before COVID-19,” said Doreen Bogdan-Martin, Director of ITU’s Telecommunication Development Bureau (BDT) during a recent [Cloud for COVID-19 Response](#) webinar.

“And it’s likely to be key to business resilience in the aftermath of the pandemic.”

The Cloud for COVID-19 Response webinar highlighted use cases designed by public institutions and private players in response to connectivity challenges and needs of all kinds that have emerged amid the crisis, as well as how cloud computing can contribute towards social goals and enable fair innovation opportunities.

“

Every time we use an app on a smartphone or hit an important Web app, the chances are high that the back-end that powers this app is a cloud.

”

Nasser Kettani

Rapporteur of ITU-D Study Group 1 Question 3/1

Deploying life-saving solutions quickly

“Every time we use an app on a smartphone or hit an important Web app, the chances are high that the back-end that powers this app is a cloud. The cloud is becoming the new invisible power that drives many of the IT systems and apps that we consume on a daily basis. Every day, we touch multiple clouds multiple times without even noticing,” said Nasser Kettani, Rapporteur of ITU-D Study Group 1 Question 3/1. “As we speak now, a cloud is enabling this conference!”

One commonly referenced cloud use case has been the shift to remote education – such as has been enabled by platforms like Microsoft Teams. Nada Ihab, Government Affairs Lead for Microsoft MEA, explained how by working closely with the United Arab Emirates (UAE) Telecommunications Regulatory Authority (TRA), Microsoft was able to connect over a million students in the UAE to an entirely digital experience within 10 days.

“During this crisis we see many innovation startups coming with solutions to help citizens and governments face this – and have a true impact,” said Mehdi Alaoui, CEO of LaStartupFactory and VP, APEBI Morocco.

“

During this crisis we see many innovation startups coming with solutions to help citizens and governments face this – and have a true impact.

”

Mehdi Alaoui

CEO of LaStartupFactory and VP, APEBI Morocco



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Alaoui explained how in addition to remote medical consultations and remote education, the cloud was used to facilitate 3D the printing of critical respiratory equipment that could be used by hospitals, which were running low on this life-saving equipment.

Regulatory readiness?

But before these innovative solutions can be implemented, “there are a lot of conversations that we still need to have in order to grasp the true opportunities that the cloud can bring,” said Nada Ihab.

But this is an ongoing process.

The cloud market was increasing – by multiple digits – long before COVID-19.

This had been forcing key questions about how governments can adjust their regulatory environments to best enable cloud computing use cases that could greatly improve citizens’ lives.

“

There are a lot of conversations that we still need to have in order to grasp the true opportunities that the cloud can bring.

”

Nada Ihab

Government Affairs Lead
for Microsoft MEA

The pressing need to find solutions to keep societies and economies running during COVID-19 is accelerating the urgency of these questions across the industry.

And because a similar crisis is not impossible in the near future, policymakers and regulators should turn their attention to futureproofing; creating the right infrastructure to quickly deploy and adopt the necessary cloud solutions.

Spurring investment in ICT infrastructure

Panellists agreed that this largely rests on developing an enabling regulatory environment and infrastructure connectivity, which remains a key barrier for many.

“I think it’s going to be increasing in the next few months, but that requires the need for digital infrastructure connectivity,” said Kettani. “I think that’s going to be one of the key elements of how successful this is going to be.”

“Connectivity varies significantly between the countries that we’ve looked at in response to the crisis, but one thing that we see in common is the need to invest in our connectivity infrastructure,” said Hussein Abul Enein, Policy Manager, Access Partnership.

Ihab pointed out that Microsoft “are working on expanding Wi Fi coverage to rural areas around the world, with the aim of supporting near-term educational needs.”

“

There's a significant increase in the willingness to engage in multi-stakeholder conversations.

”

Hussein Abul Enein
Policy Manager, Access Partnership

“

The relevant outcome of this webinar will be reflected in the Final Report of ITU-D Study Group 1 Question 3/1.

”

Fleur Regina Assoumou-Bessou
ITU-D Study Group 1 Chairman

Working together to enable cloud-based solutions

One other positive outcome of the crisis is the increased willingness to work together.

“A common trend between all the responses that we've seen from a regulatory perspective to the COVID-19 crisis in relation to cloud tools, is that there's a significant increase in the willingness to engage in multi-stakeholder conversations,” Abdul Enein added.

He hoped that this will lead to a quicker and more robust deployment of these transformative cloud services.

“The relevant outcome of this webinar will be reflected in the Final Report of ITU-D Study Group 1 Question 3/1, which includes the succinct analysis from the four-year work of ITU membership on emerging technologies, including cloud computing, m-services and OTTs, through the ITU-D Study Group platform,” said Fleur Regina Assoumou-Bessou, ITU-D Study Group 1 Chairman, in her closing remarks. ■



Listen to the public webinar focusing on Cloud for COVID-19 Response



More information on ITU development work on policy and regulation is available [here](#).





COVID-19: Deloitte's revised key tech, media and telecom predictions 2020

By Duncan Stewart

Director of Research, Tech, Media and Telecom, Deloitte

■ We have never before modified our Tech, Media and Telecom (TMT) Predictions in the middle of the year: that would have felt like changing a wrong answer on an exam.

There's a first time for everything, and the combination of the COVID-19 pandemic, lockdowns, work and learn from home,

supply chain interruptions, and economic contraction/changes in consumer spending have affected all ten topics in our [2020 Predictions report](#) published on December 10, 2019.

Here is how we revised our predictions on the five topics most relevant for ITU.

“

Longer term, and post-pandemic, we would expect the market for both smartphones and the things that accompany them to return to growth.

”

Duncan Stewart

1 Decline in smartphone sales

Our original prediction for 2020 smartphone sales was USD 484 billion, up 5.8 per cent from 2019. There are a wide range of forecasts coming out after a weak Q1 and an anticipated collapse in Q2, but a 10 per cent global decline for the full year now looks probable.

We had predicted that the smartphone multiplier (the revenues of things that accompany smartphones, such as apps, ads and accessories) would be USD 459 billion in 2020, and we now expect that to be USD 393 billion. Longer term, and post-pandemic, we would expect the market for both smartphones and the things that accompany them to return to growth, with the multiplier growing even faster than smartphone sales themselves.

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Our prediction for private 5G trials and pilots looks like it will be exceeded.

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Duncan Stewart

2 Edge AI chips slow down

Not all smartphones have dedicated artificial intelligence (AI) chips (neural processing units, or NPUs, worth an estimated USD 3 per phone)... but we predicted about a third of phones would have NPUs in 2020, accounting for an estimated 500 million chips out of a total 750 million edge AI processors. We have cut that by 100 million units, to only 650 million, but that will still be more than double the number of phones with edge AI chips that sold in 2017. The presence or absence of an edge AI chip has significant implications on data transmitted, as well as on privacy and security, so this drop will matter.

Longer term, our 2024 call for 1.6 billion edge AI chips still looks likely, and could even be low as new edge AI chips – that are even smaller and cheaper than smartphone NPUs, which in turn are smaller and cheaper than the chips used in data centres for AI training and inference – are hitting the market now. These will not be in phones, but will be in millions (billions, over time) of sensors, Internet of Things machinery, and smart city/smart home solutions.

3 Private 5G speeds up

Although 2020 deployments/launches of public 5G networks have been mixed because of the pandemic (faster in some countries, but delayed in others), our prediction for private 5G trials and pilots looks like it will be exceeded. We're taking our prediction for private 5G tests from "over 100" for the year to "under 1000" based on many trials of private 5G solutions just in Q1 of 2020 that we are aware of. It is difficult to say if the more rapid pace of private 5G trials is connected with the pandemic.

Testing a new technology while a factory is otherwise idle might make sense, and we have seen some private 5G trials in medical and logistics/distribution verticals, which could well have been accelerated by COVID-19 stresses.

4 Low Earth Orbit goes higher

We are moving our prediction

for the number of Low Earth Orbit (LEO) data satellites in orbit by the end of 2020 from “more than 700” to “more than 1000.” Although OneWeb went bankrupt, before it did it launched 68 satellites in Q1, and Starlink has placed 300 satellites in orbit as of April, with another 60 per month expected for the balance of the year. Partial service is expected late this year.

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We are moving our prediction for the number of Low Earth Orbit (LEO) data satellites in orbit by the end of 2020 from ‘more than 700’ to ‘more than 1000’.
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Duncan Stewart

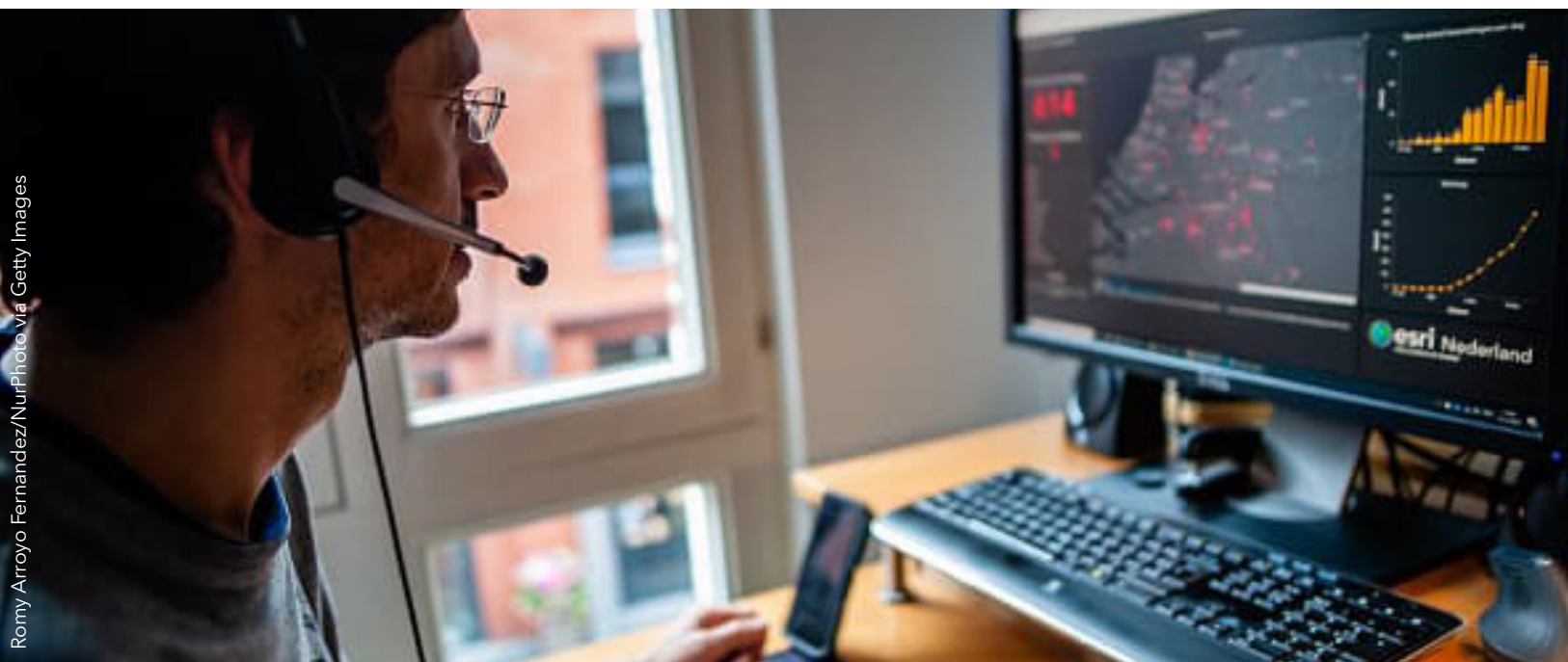
Once again, it is hard to know how directly the pandemic is influencing the more rapid deployment of LEO sats. But as hundreds of millions of people work and learn from home, as governments try to fill coverage gaps for rural broadband, and as carriers look for more backhaul for the increased traffic due to people staying (and streaming) at home...demand for data from orbit looks stronger than it did when we wrote the original prediction.

5 CDN grows even faster

All that streaming video is running relatively well

over global telecoms networks so far but will likely need help from Content Delivery Networks (CDNs.) We originally called this market to be up 25 per cent to USD 14 billion, and it now looks like 30-40 per cent is possible for the year, or up to USD 15.5 billion.

Many clients have asked what we think the impact of COVID-19 will be for telemedicine and telework and the rollout of 5G due to health concerns. No comment as of now...but tune in December 8, 2020 for our 2021 TMT Predictions report, where all three topics will be addressed! ■



COVID-19: How the telecoms industry can help keep everyone connected: OPINION

By Tomas Lamanuskas

Partner, Envision Associates Ltd

■ What can be learned from the experience so far and how can operators, regulators and other stakeholders ensure that networks keep running and everyone is able to be connected?

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Operators everywhere should consider contractual relief to their customers.

”

Tomas Lamanuskas

The points below could hopefully help operators, regulators and policymakers who may be struggling to respond to the current situation, suggest some ideas for plans to the lucky ones that still have time to prepare, and inspire those who already demonstrated proactive action to help others.



This is a follow up to an article which gives an overview of the [telecoms landscape following the global COVID-19 pandemic](#).

Operators everywhere should consider contractual relief to their customers, possibly beefed up with some international call packages to and from the most affected countries. Zero rating for certain applications (e.g., specific information portals providing information on COVID-19 as [Vodafone](#) has committed to do) might be considered.

Regulators (in collaboration with the industry) should be prepared to act rapidly to relieve capacity bottlenecks – e.g., following the United States (US) [FCC](#)'s example, assign additional spectrum (where necessary, borrowing it from other market players). Potential downstream bottlenecks might also need to be addressed – e.g., through emergency procedures to coordinate access to wholesale capacity.

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Potential downstream bottlenecks might also need to be addressed.

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Tomas Lamanuskas

International collaboration might be needed to address bottlenecks beyond the jurisdiction of access network country regulators – especially in cases of small country operators with predominantly overseas traffic pattern relying on expensive Internet transit, rather than peering, services.

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Verizon as well as Telecom Italia report that a significant proportion of the traffic spike consists of video gaming.

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Tomas Lamanuskas

Traffic shaping might need to be considered to manage the network load. [Verizon](#) as well as [Telecom Italia](#) report that a significant proportion of the traffic spike consists of video gaming (75 per cent week-on-week increase in the US). This is, of course, subject to applicable net-neutrality rules.

National industry-wide coordination mechanisms should be instituted, for coordination of network management during the crisis. Again, Australia provides a good example of this.

Consumer guidance, based on country specific circumstances, should be provided, on how to ensure that best quality connectivity is available during the quarantine – not only for a specific user, but for everyone.

The [United Kingdom's Ofcom](#) and [France's ARCEP](#) have produced examples of guidelines for consumers. “[Ten Commandments](#)” on responsible Internet use from the Greek Government present an example of a “common sense” guidance of how to maximize the availability of networks for everyone.

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The United Kingdom's Ofcom and France's ARCEP have produced examples of guidelines for consumers.

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Tomas Lamanuskas

Among other things, it aims to steer the traffic towards fixed/WiFi over mobile networks.

Telecom operators need to have clear crisis-time operational plans, protecting their own employees as much as possible while ensuring that staff is able to safely address network issues, including in premises of self-isolating customers. As operator shops get closed, they naturally would have to be prepared for much higher traffic through their digital channels and call centres.

Emergency telecommunications plans should be put in place – and where they are in place, reviewed for their adequacy for the circumstances – instituting clear traffic prioritization rules and ensuring that emergency services and coordination bodies are equipped with resilient “off-grid” communications, such as satellite communication devices.

Real-time global sharing of experiences and emerging best practices

In addition to the examples referred to above, operators and regulators around the world are making decisions to address the situation every day. It is important to enable quick learning for countries which may be affected later.

The list above is definitely not complete and all of the points may not work for everyone. But in any case, this is the time for action. ■

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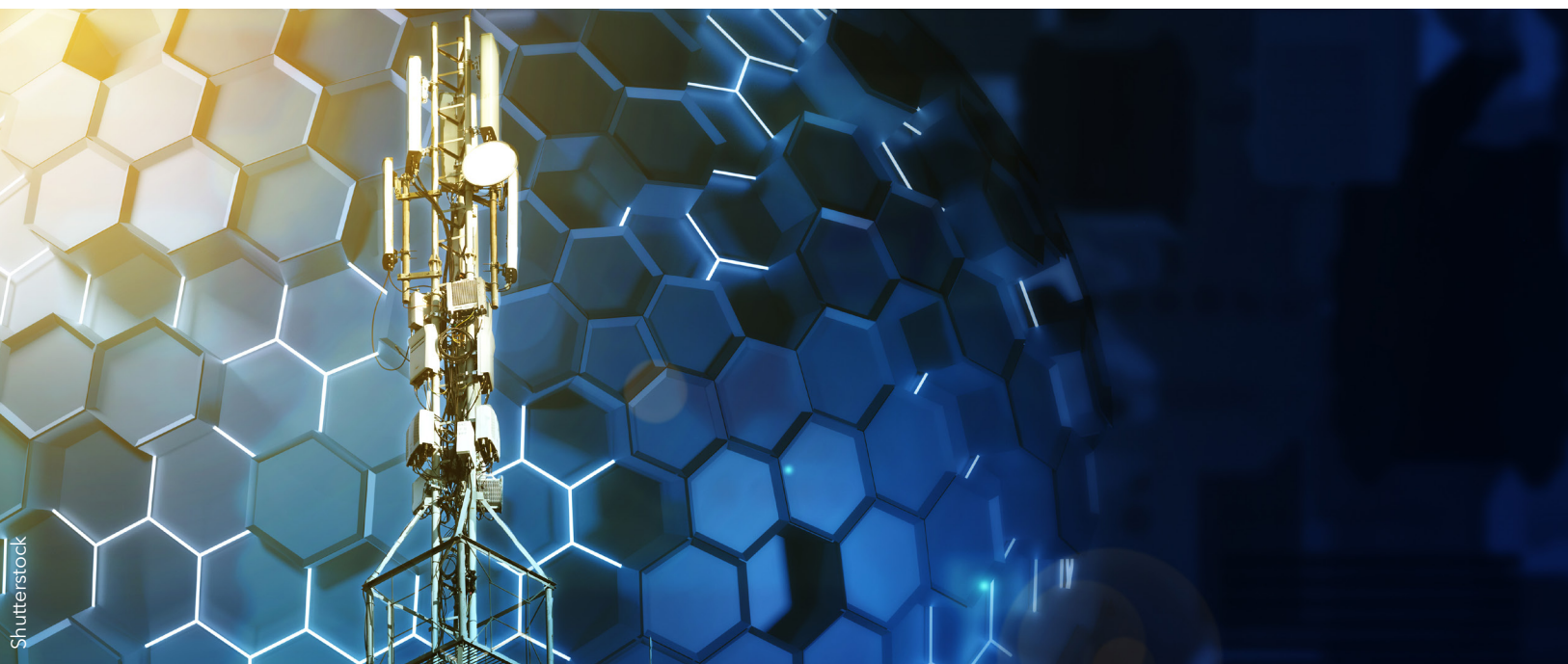
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Tomas Lamanauskas



Any views expressed in this article do not necessarily reflect the views of ITU.



How COVID-19 impacts telecom operators' economics

By Jorge Martínez Morando

Partner at Axon Partners Group and Vice-Rapporteur
for ITU-D Study Group 1 Question 4/1

■ There is no question that telecommunications and digital services are crucial for many people across the world coping with the COVID-19 pandemic. Online education and remote working possibilities have brought a semblance of normality to uncertain times. Telehealth solutions now offload certain activities from healthcare systems, enabling doctors and nurses to focus on saving lives.

Videoconferencing and social networks help us stay in touch with our families and friends. Media services and online games keep us entertained while passing hour after hour at home.

None of these technologies could exist without strong and resilient telecommunications and information and communication technology (ICT) infrastructure.

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ITU-D Study Group 1 Question 4 addresses the business models and economic aspects associated with national telecommunication and ICT markets.

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Jorge Martínez Morando

Learn more about the work of ITU-D Study Group 1 Question 4/1 [here](#).



But how is that infrastructure holding up under the pressure of the pandemic? We asked representatives from telecom operators during the recent ITU Telecommunication Development Sector (ITU-D) Study Group 1 public [webinar on the Economic implications of COVID-19 on national telecommunications/ ICT infrastructure](#).

Led by Rapporteur Arseny Plossky of the Russian Radio Research and Development Institute, ITU-D Study Group 1 Question 4 addresses the business models

and economic aspects associated with national telecommunication and ICT markets. Considering the unprecedented nature of the COVID-19 situation, we took the opportunity of this ITU-D Study Group webinar to understand the economic effects of pandemics on telecom business from the perspective of operators.

The discussion revealed how the pandemic created massive, and sometimes surprising, impacts on operators' demand, revenue and costs. In this article we will look at the top 3 takeaways that emerged from the exchange.

1 Demand skyrockets and behaviours change

It is no secret that broadband traffic has surged over the past months due to the COVID-19 outbreak. This trend was fully confirmed by expert panellists who reported traffic increases of between [JM1] 20 per cent and 80 per cent, though in some cases traffic has returned to levels closer to, though still above, pre-COVID times.

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The discussion revealed how the pandemic created massive, and sometimes surprising, impacts on operators' demand, revenue and costs.

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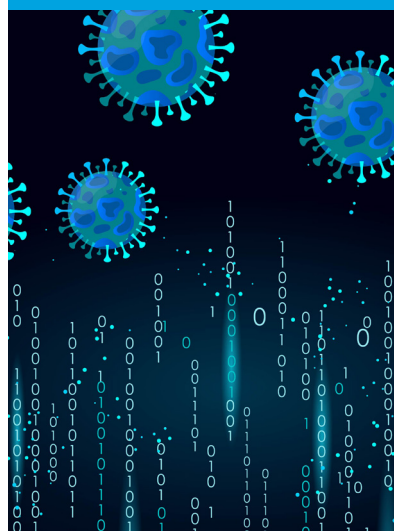
Jorge Martínez Morando

reported an increase in fixed voice calls, contrasting with dips in typical traffic observed by fixed telecom operators across the world over the past few years.

Relevant changes in international traffic and international mobile roaming were highlighted by David Geary, General Counsel Caribbean and Central America at Digicel. While international traffic increased to later stabilize, roaming has declined by around 80 per cent, he said. These observations are significant for operators in countries with high levels of tourism, especially the smaller countries and islands for which roaming revenues represent a big piece of the economic pie.



Listen to the public webinar focusing on the Economic implications of COVID-19 on national telecommunications/ ICT infrastructure



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Impact is much less consistent among countries and operators when it comes to revenue.

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Jorge Martínez Morando

Beyond the evolution of overall traffic, there have also been behavioural changes significantly affecting certain networks, remarked Gerry Collins, Director of Mobile Network Operator Product Management at Intelsat.

Spikes in videoconferencing, gaming, streaming and other media have boosted uplink traffic, which was typically well below downlink levels, he said. Mr Collins also noted how new geographical movements of people (e.g. to second residences in rural regions) are boosting traffic consumption in certain areas, with some seeing +100 per cent growth rates.

According to Collins, this situation is putting a considerable strain on networks that were designed with pre-pandemic usage levels in mind.

2 Mixed views about revenue trends

Impact is much less consistent among countries and operators when it comes to revenues.

Mr Geary remarked that industry revenues have dropped by 10 to 20 per cent, a situation that may improve slightly to 5-10 per cent decreases for the full year. These results are most likely related to the relevance of lower roaming revenues combined with the sectoral significance of tourism in the economies of most of the countries where Digicel operates, with some of these nations facing the equivalent of an economic shutdown.

On the other hand, Ms Tural noted how a stronger demand for fixed broadband lines as well as a favourable change in product mix has prompted Türk Telekom to revise its revenue forecasts slightly upward.

3 New infrastructure investments despite economic uncertainties

Despite the global economic recession expected to follow the COVID-19 crisis, telecommunication operators are reporting increased efforts to invest in additional capacity and deploying new network infrastructure and technologies.

Tural reported an increase of 10 per cent in the expected investment for the year, with plans for new fiber to the home (FTTH) deployments and upcoming launch of 5G remaining intact.

Most networks were able to cope with upswings in traffic with relatively simple upgrades (e.g. software upgrades, activating new bands temporarily granted by regulators) not requiring unexpected relevant hardware investments, Geary explained.

Instead, Digicel is accelerating plans to deploy 4G in uncovered areas as well as fixed wireless solutions, FTTH and sub-sea capacity, although there are relevant uncertainties in the general investment climate, he said.

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When the webinar discussion turned to the future, all speakers had one topic in mind: the digital divide.

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Jorge Martínez Morando

On the other hand, operational limitations can cause potential delays, Collins explained. Even if software-based upgrades are simple to implement, challenges may arise if provisioning hardware is needed, he said. Certain devices or parts may be unavailable or late due to supply chain disruption, he noted, or confinement measures may limit technicians' ability to perform outdoor installations.

Finally, it is important to highlight that none of the panellists reported any relevant impact on operational costs.

Looking ahead: the digital divide remains top priority

When the webinar discussion turned to the future, all speakers had one topic in mind: the digital divide. Even if ICT and digital services cushioned the impact of COVID-19 on many businesses and people, we cannot forget the billions of humans that cannot access or pay for them. Stephen Bereaux, Deputy to the Director of the ITU Telecommunication Development Bureau, stressed that 3.6 billion people in the world remain unconnected or without meaningful connectivity.

Many operators voiced their intention to redouble efforts to cover the uncovered and to bring the newest technologies to as many people as possible, while improving clients' capacity and providing cheaper and even free tariffs in some cases.

We also heard some examples of public bodies' and international organizations' efforts to provide funding and support for operators on this odyssey, such as the joint ITU-UNICEF [Giga project](#) that aims to connect every school to the Internet.

Geary also highlighted the important work being undertaken by the [UN Broadband Commission for Sustainable Development](#), whose [working group on 21st century financial models](#) is examining the crucial question of how all digital ecosystem actors, including platforms, might contribute to financing sustainable broadband coverage.

The expected economic downturn is likely to limit the combined efforts of both operators and governments. Despite these uncertain projections, what is clearer to me is that universal access and affordability of high-quality connectivity must remain a priority for all countries, and that all players in the digital ecosystem must continue coordinating efforts to bridge the digital divide. ■



Getty Images

The need for increased digital accessibility during COVID-19 – and beyond

By ITU News

■ During the global COVID-19 pandemic, the availability of Internet connectivity has helped maintain business continuity, keep children in education, and ensured that people can access essential goods and services online.

But the pandemic has also exposed significant areas of inequality and exclusion in the digital world, particularly for populations at risk. This includes the estimated one billion people worldwide living with some form of disability.

“In today’s fragile world, it is absolutely essential that digital information be distributed and available in formats that are accessible,” said Doreen Bogdan-Martin, Director of ITU’s Telecommunication Development Bureau.

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Doreen Bogdan-Martin

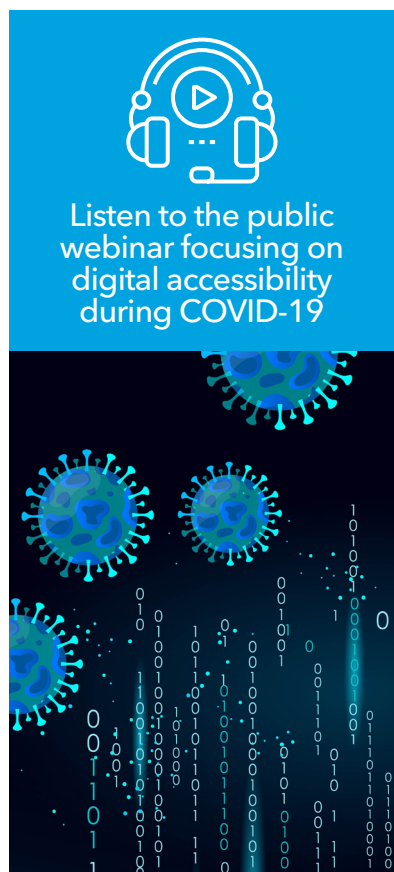
Director of ITU’s
Telecommunication
Development Bureau

Read ITU’s [Guidelines on Digital Accessibility here](#).



“Neglecting this imperative will mean consigning many Persons with Disabilities to a higher risk of contamination and exclusion from essential health and safety information and services and vital social support programs.”

At a recent ITU-D Study Group public [webinar on digital accessibility during COVID-19](#), panellists discussed the importance of ICT accessibility implementation at global level to ensure that everyone’s right to communicate and be part of the digital world is fulfilled – during and beyond the global COVID-19 pandemic.



That means, ensuring that digital information is designed and developed considering all users’ needs and/or abilities to perceive it, regardless the information and communication technology (ICT) used to access it (through, radio, mobile, TV, websites etc.)

Flaws in the system

Panellists agreed that the pandemic has exposed pre-existing and fundamental gaps in accessible communications.

“Most countries, including developed ones – even European ones – were not fully prepared to make sure that everyone has digital access to televised information, sign language and captioning,” said Lidia Best, Chair, National Association of Deafened People (NADP) of the United Kingdom. “Without appropriate accessible futures and services, vital services cannot be seen by all.”

This means that potentially life-saving health information – such as COVID symptoms or related precautionary measures including the need to wear a mask – may be missed by persons with disabilities who are consequently exposed to greater risk of contracting the deadly virus.

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Most countries, including developed ones — even European ones — were not fully prepared to make sure that everyone has digital access to televised information, sign language and captioning.

”

Lidia Best

Chair, NADP, United Kingdom

She advocated that governments should implement [ITU-T recommendation F.930](#), multimedia telecommunication relay services.

Creating successful digital accessibility

But there is some good news. The number of countries committed to digital accessibility is on the rise. According to G3ict data, 59 per cent of countries around the world have a legal definition of accessibility which includes ICTs today, compared to 49 per cent in 2018.

"It shows that what ITU and UNDESA does is having an effect because many more countries are taking steps to undertake regulation," said Axel Leblois, President and Executive Director of the Global Initiative for Inclusive ICTs – G3ict.

But although good progress is being made decade-on-decade, "the level of implementation is ridiculously low," he said. "So this is a real wake-up call because there are lots of commitments, but very little in terms of actual outcomes for Persons with Disabilities.'

He presented a three-point plan to increase digital accessibility in the post COVID-19 era: 1) involve Persons with Disabilities in development, promote and monitor digital accessibility policies and programs; 2) adopt standards for accessibility; and 3) promote understanding of disability and training and certification of accessibility professionals.

"COVID-19 is, in fact, a catalyst for action," he said.

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Axel Leblois

President and Executive Director of the Global Initiative for Inclusive ICTs — G3ict

An opportunity to change

The aim to develop and deploy communications technologies that are "born accessible" is a key tenement of the European Commission's Accessibility Act.

Public procurement legislation already requires that when public authorities buy video conferencing systems, they are bought accessible, so complying with the accessibility standards and requirements. But the pandemic has highlighted the need to update and revise European accessibility legislation to plug additional gaps.

"We are now starting the preparation of a new disability strategy. The current one is finishing this year, in 2020, and the lessons learned from COVID will be really taken on board," said Inmaculada Placencia-Porrero, Senior Expert, Disability and Inclusion, DG Employment, Social Affairs and Inclusion, European Commission.

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We are now starting the preparation of a new disability strategy.

”

Inmaculada Placencia-Porrero

Senior Expert, Disability and Inclusion, DG Employment, Social Affairs and Inclusion, European Commission

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It is crucial to accelerate the implementation of ITU target 2.9 which calls for all Member States to ensure that ICTs are accessible in all countries by 2023.

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Amela Odobasic

Rapporteur of ITU-D Study Group 1 Question 7/1

Strengthening partnerships

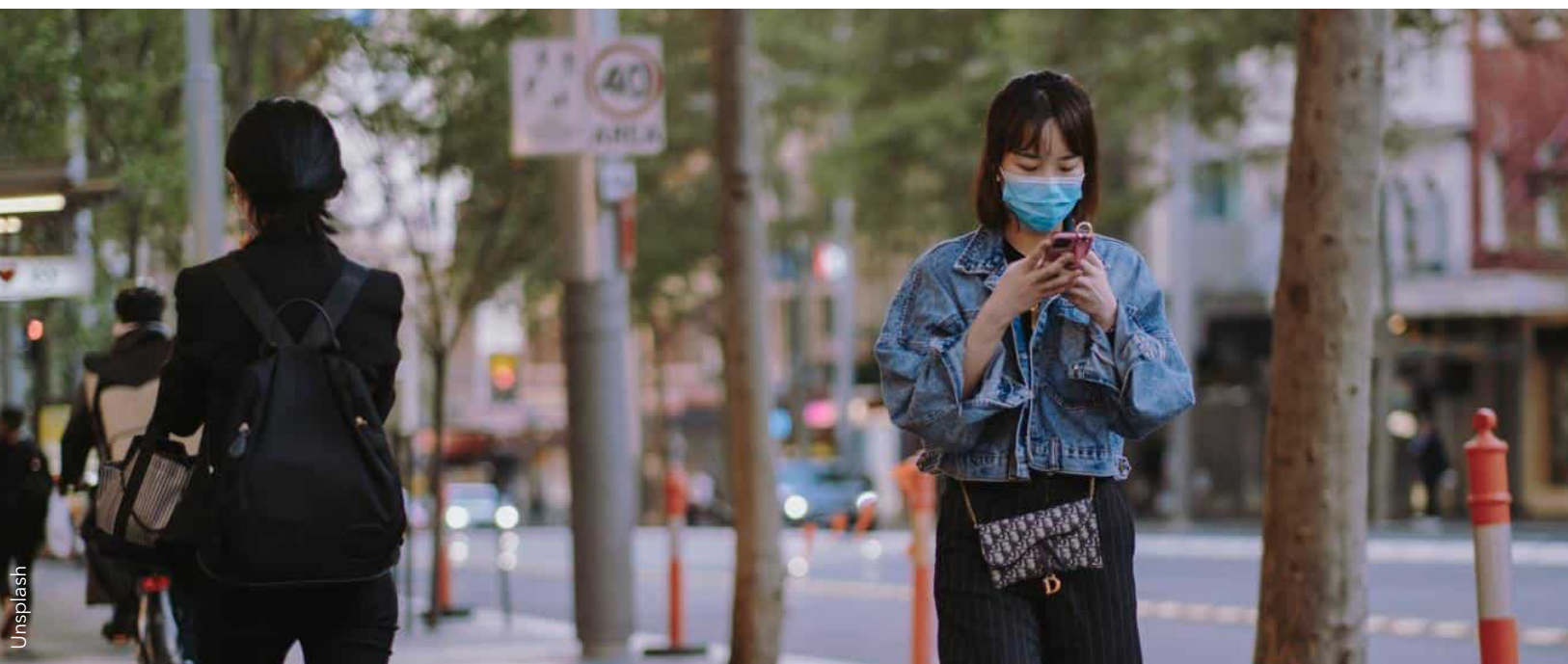
A multistakeholder collaborative effort is needed to ensure that we plug the remaining gaps and “include Persons with Disabilities in the COVID-19 response, recovery and build back better,” said Daniela Bas, Director Division for Inclusive Social Development, United Nations Department of Economic and Social Affairs (UNDESA).

And time is of the essence.

“It is crucial to accelerate the implementation of ITU target 2.9 which calls for all Member States to ensure that ICTs are accessible in all countries by 2023. Considering that we are now in 2020, we really don’t have much time,” said Amela Odobasic, Rapporteur of [ITU-D Study Group 1 Question 7/1](#), who moderated the session.

This was a call echoed by Doreen Bogdan-Martin, Director of ITU’s Telecommunication Development Bureau.

“In a world that has never been so dependent on the power of digital technologies, we must redouble our efforts to make sure that all people regardless of their gender, their ability, their age, their location enjoy equal access to digital platforms and services. And that’s why the work of this Study Group and this particular question is so important,” she said. ■



ITU and partners launch action plan to boost digital connectivity during COVID-19 – and beyond

By ITU News

■ Digital technologies are having a massive impact during the COVID-19 crisis.

Text messaging is saving lives and curbing the spread of the pandemic. Contact tracing apps will help manage the spread and ease confinement that is crippling economies. And new technologies like artificial intelligence will help understand and tackle this virus head on.

None of these things are possible, however, without resilient networks that power digital connectivity.

“COVID-19 has thrown into sharp relief the connectivity chasm we call the digital divide.” – Doreen Bogdan-Martin

“

COVID-19 has thrown into sharp relief the connectivity chasm we call the digital divide.

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Doreen Bogdan-Martin

Director of ITU's
Telecommunication
Development Bureau

That's why ITU, the World Bank, GSMA and the World Economic Forum (WEF) have launched an [accelerated action plan](#) to better leverage digital technologies and infrastructure in support of citizens, governments and businesses during the COVID-19 pandemic. The aim of the plan is to put forward immediate priority areas for private-public collaboration that can be taken by governments in partnership with the private sector.

The action plan comes out of a high-level virtual roundtable held in April with finance and information and communication technology (ICT) ministers, ICT regulators, CEOs of telecom and technology companies from around the world.

Together, the group agreed that private-public sector collaboration will be essential to respond to the crisis to ensure networks are well-equipped to handle an exponential increase in digital traffic. This will help countries future-proof their digital capabilities and infrastructure, and ensure access to digital services for the most vulnerable populations.

The action plan aims to serve as best practice for governments and regulators during the COVID-19 crisis.

The action plan aims to serve as best practice for governments and regulators during the COVID-19 crisis.

"It is a credit to the world's ICT community that the huge surge in traffic caused by COVID-19 has not crippled our connectivity. But let us also remember that the power to stay connected remains a huge privilege. ITU figures reveal that 3.6 billion people remain totally cut-off from the Internet. Billions more struggle with connectivity that is woefully insufficient," said Doreen Bogdan-Martin, Director of ITU's Telecommunication Development Bureau. "COVID-19 has thrown into sharp relief the connectivity chasm we call the digital divide. And it has refocused our minds on why bridging this chasm and bringing affordable access to all is so crucially important to ensuring no-one is left behind."

5 priority areas of action

The leaders identified immediate priority areas for private-public collaboration that can be taken by governments in partnership with the private sector, starting now.

These areas formed the basis of the new action plan to maintain connectivity during the COVID-19 crisis – and to catalyze sustained collaboration between the public and private sectors to increase Internet access beyond the current crisis.

The call for action seeks to pursue 5 key objectives:

- Increase bandwidth, strengthen resilience and security of networks, and manage congestion.
- Connect vital services and ensure the continuity of public services to safeguard the welfare of populations.
- Power FinTech and digital business models to support the most impacted businesses and communities.
- Promote trust, security and safety online.
- Leverage the power of mobile big data.

Initial operational response

The action plan also includes specific operational responses in the immediate-term (0-3 months) and short-term (3-6 months) in the following 5 areas.

- Promote network resilience.
- Ensure access and affordability of digital services.
- Support compliance with social distancing principles while providing vital connectivity.
- Leverage e-health, telemedicine and Big Data to address the health crisis.
- Ensure institutional frameworks are fit for purpose.

The action plan aims to serve as best practice for governments and regulators during the COVID-19 crisis. It seeks to bolster other critical knowledge-sharing efforts, notably [ITU's Global Network Resiliency Platform](#) (#REG4COVID) and WEF's COVID Action Platform (the COVID Digital Response Network and the Digital Transformation for Post-COVID World group), the Broadband Commission for Sustainable Development's Agenda for Action, and other platforms and forums.

Beyond COVID-19: an eye to the future

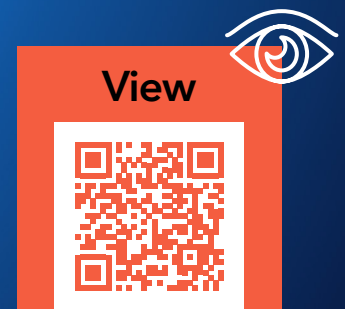
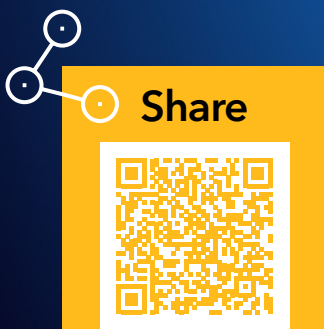
While addressing the immediate needs during COVID-19, the plan of action calls for a "new urgency" to address the digital inclusion agenda of governments worldwide.

"Concerted government action, in consultation with the ICT industry, is needed to achieve universal, affordable and quality broadband access, and to mobilize private financing to invest in digital inclusion," says the call to action. "Prioritizing digital strategies that leverage e-government solutions (including digital identification), best practices in digital infrastructure regulation (e.g. predictable and cost-effective spectrum allocation, independent regulation, and infrastructure sharing), as well as digitalization of vertical industries, will ensure better preparedness for future crises." ■

Share your experiences with REG4COVID

The new Global Network Resiliency Platform ([#REG4COVID](#)) is a place where regulators, policymakers and other interested stakeholders can [share](#) information, [view](#) what initiatives and measures have been introduced around the world designed to help ensure communities remain connected, that we support one another, and that we harness the full power and potential of information and communication technologies (ICTs) during this crisis and to prepare for the medium and long-term recovery from COVID-19.

Global Network Resiliency Platform



Join ITU's online communities on your favorite channel





ITU-WHO-UNICEF initiative delivers vital information on COVID-19

By Sameer Sharma

Senior Advisor to ITU's Asia-Pacific Regional Office

■ People's awareness and compliance with preventive measures is crucial to defeating COVID-19.

While over 3.6 billion people are still not connected to the Internet, mobile networks reach nearly 97 per cent of the global population. They represent the communication channel with the widest

reach – and a crucial means for relaying critical, life-saving information regarding COVID-19.

Many countries made efforts to inform their populations about the COVID-19 threat by sending out messages to mobile phone users or replacing common ringtones with pre-recorded audios with COVID-related advice.

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In collaboration with WHO and UNICEF, ITU reached out to ICT authorities and partner mobile network operators in the Asia-Pacific region.

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Sameer Sharma

Learn more about the [Be He@lthy Be Mobile](#) initiative and its objectives.



“

COVID-19 has demonstrated the critical importance of connectivity.

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Sameer Sharma

In April, ITU stepped in to support and scale up these efforts, to ensure that vital information on COVID reaches everyone, everywhere, including the most vulnerable and marginalized communities.

Encouraging COVID-19 advice with WHO-approved messages

In collaboration with [WHO](#) and [UNICEF](#), ITU reached out to ICT authorities and partner mobile network operators in the Asia-Pacific region to encourage the dissemination of preventive advice on COVID-19 using WHO-approved messages.

The messages were available to be delivered by Government institutions and telecom operators, free of charge, to mobile-cellular subscribers in a form of SMSs, voice messages, or other traditional ways that can help reach illiterate communities.

In Myanmar, for example, the messages have been disseminated to citizens. They have also been translated into local languages to reach out to remote areas of the country.

Launching initiatives in other regions

Efforts are underway to launch similar initiatives in other regions, including Africa, the Arab States, and the Caribbean.

In many of these regions (at the time this article was first published in May), the pandemic had not escalated to the extent that could be observed in Europe and North America, and the timely, continuous communication of warning messages and preventive advice would be able to play its role in reducing the impact of COVID-19.

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The digital divide and the lack of connectivity remain the issues that need to be resolved.

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Sameer Sharma

The ongoing pandemic once again highlighted the importance of timely access to information as a fundamental human right.

COVID-19 has demonstrated the critical importance of connectivity.

The digital divide and ITU's mission to connect the world

The digital divide and the lack of connectivity remain the issues that need to be resolved to make humanity more resilient in the face of crises like COVID-19.

ITU remains committed to its mission of connecting the world and putting ICTs at the service of sustainable development. ■



In the response to COVID-19, children are key and part of the solution

By Najat Maalla M'jid

United Nations Special Representative of the Secretary-General on Violence against Children

■ The [Agenda for Action](#) launched by eight United Nations entities in April 2020, placed children's protection from violence as top priority for governments and provides concrete recommendations to safeguard children's wellbeing.

Increasing risks of violence

With 60 per cent of all children worldwide living in countries where a full or partial lockdown took place, the worldwide closure of schools has no historical precedent. 188 countries imposed countrywide closures, affecting more than 1.5 billion children and youth.

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While many children and young people thrive online, many others don't have the means to connect with the outside world.

”

Najat Maalla M'jid

For these students, days have turned into weeks, and weeks have turned into months of isolation.

Confinement measures and the disrupted provision of already limited child protection services have exacerbated the vulnerability of children to various forms of violence.

These include violence and abuse within their circle of trust, physical, emotional and psychological violence, mistreatment and neglect, gender-based violence, sexual exploitation, as well as on-line violence and abuse.

Children who are already vulnerable – including poor, refugees, migrants, children living on the street, internally displaced children, children deprived of family care and deprived of liberty, children living in conflict affected areas – are highly at risk to be victims of violence, exploitation, social exclusion and discrimination.

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While children spend more time online, so do predators.

”

Najat Maalla M'jid

The challenges of life online

While many children and young people thrive online, many others do not have the means to connect with the outside world.

It has therefore been critical to ensure accessibility and affordability of Internet access to children, especially in places under lockdown to provide education, peer-to-peer engagement and public information on COVID-19, which is a substantial part of the response to maintain children's learning, support and play.

Possible measures include financial packages to improve connectivity, data packages and telecommunications subsidies, lending devices and providing technical support hotlines.

While children spend more time online, so do predators.

Europol found that law enforcement partners reported “increased online activity by those seeking child abuse material.” This is due to increasing opportunities for offenders to engage with children whom they expect to be more vulnerable because of isolation, less supervision, and greater online exposure.

What can the ICT industry do?

The ICT industry is uniquely placed to prevent and mitigate violence against children online.

The industry can do more to support the principle of safety-by-design, to be further proactive in detecting, blocking and removing illegal material on their platforms, and to report promptly and collaborate fully with law enforcement agencies and hotlines.

The industry should also make additional investments in sustainable and proactive prevention, by providing child sensitive information, producing guidance and tools for children, parents and carers. It can also establish safe platforms where children can express their views and share child-led and peer-to-peer initiatives.

Informing, listening to and empowering children

On other hand, children are innovative, surprising the world with new ideas and forging ways out of this crisis.

Children groups have been using digital technology to support each other, exchange and share information.

From South America to Asia children are meeting online, exchanging views and identifying gaps in government responses. In South Asia, for example, some children have produced videos with advice on COVID-19 measures.

Children and young people will no doubt face a new different reality after the crisis and their future seems uncertain, therefore they will have to be part of the solution.

It is vital that governments across regions provide opportunities for children's views to be heard and taken into account in decision-making processes on the pandemic, through consultation and dialogue.

We are all in this together, children included

The global health and socio-economic crisis caused by COVID-19 will have implications on all layers of the protective environment around children and this will undermine the progress of SDG 16 as well as other related SDGs.

A global crisis calls for a global response. Solidarity, multi-stakeholder cooperation and multi-lateralism are needed now more than ever.

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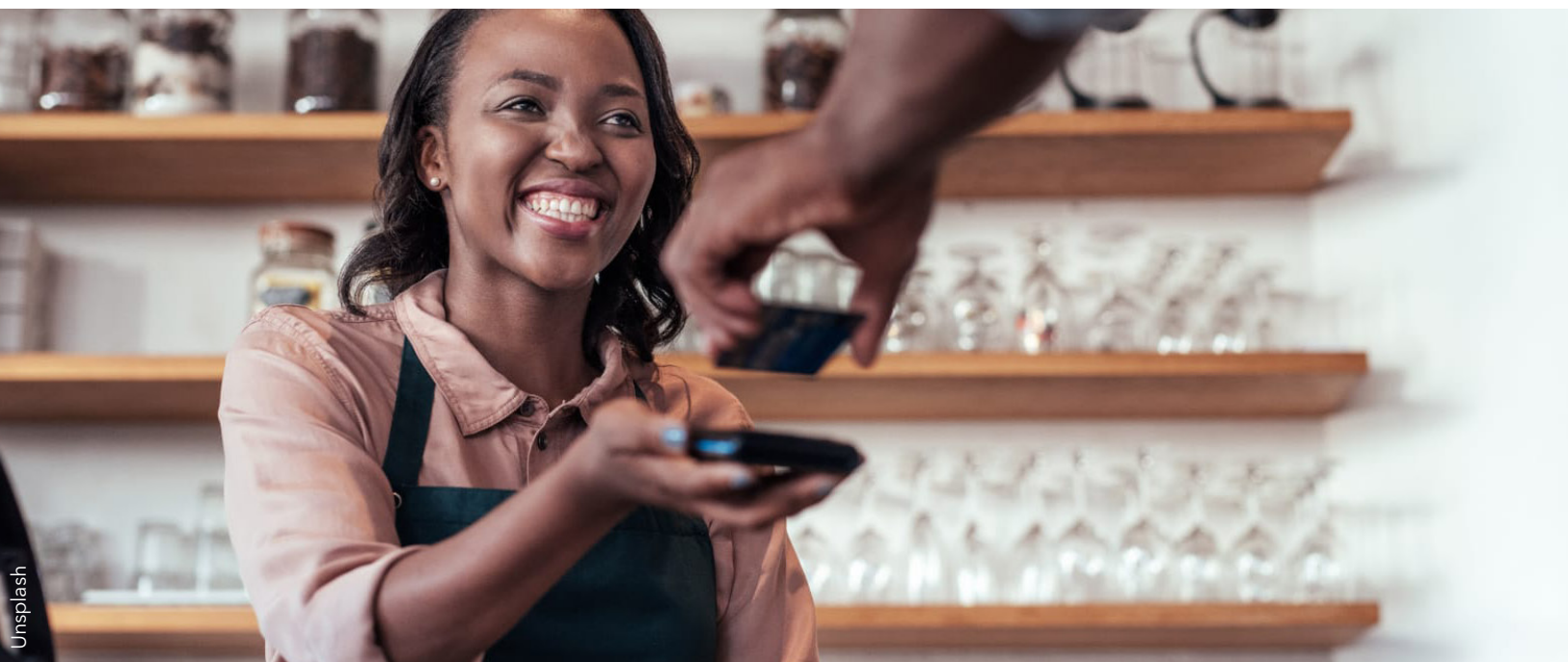
We, all together, must ensure children are included in all COVID-19 response and recovery decisions, so that no child is left behind.

”

Najat Maalla M'jid

This calls for strong mobilization of governments, bilateral/multi-lateral donors, civil society and private sector to ensure children are duly protected and will have the possibility to thrive and reach their full potential, when this crisis is over.

We, all together, must ensure children are included in all COVID-19 response and recovery decisions, so that no child is left behind. ■



Why telcos are critical to post-COVID recovery

By Alex Kazbegi

Chief Strategy Officer, VEON

■ To envisage the telecom sector response to COVID-19, first and foremost we need to recognize that this is neither a “usual” recession, nor a unique one.

Thus, the response of the telecom sector beyond the immediate offer of assistance to our subscribers in various forms – from free or price-reduced access to critical sites to discounted offers on demand services.

While ensuring the networks remain robust – the response has to account for a changing geopolitical environment, lasting impact on country economies and population wealth, the growing role and more protectionist view of the State, as well as changing consumer behaviour.

We take these trends into account when envisaging the world in the post-COVID period.

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The pandemic itself has acted as an accelerator of an already ongoing trend of achieving broader digital, financial and economic inclusion.

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Alex Kazbegi

The pandemic itself has acted as an accelerator of an already ongoing trend of achieving broader digital, financial and economic inclusion. This is to the benefit of all stakeholders: telecom companies and their shareholders, governments, businesses and the general population.

VEON is present in ten different countries with various economic profiles and levels of prosperity – thus making generalizations would simplify the issues. Still, for most of our jurisdictions, the pandemic uncovered the problems that required urgent action.

Accelerating the use of online channels

For instance, reliance on physical stores not only to purchase a handset but simply to recharge the balance on the phone, has been put to a massive test by lockdowns. It has revealed the urgent need to accelerate the use of online channels to conduct almost every activity that is connected to the customer relationship with their telecom provider.

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Reliance on physical stores not only to purchase a handset but simply to recharge the balance on the phone, has been put to a massive test by lockdowns.

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Alex Kazbegi

That includes: order a handset and SIM for home delivery, choose a suitable tariff plan, select digital products and services, and be able to pay for all without leaving the comfort of one's living room.

While this is easier done in countries like Russia, which have a high penetration of banking services, it is more difficult – if not impossible – in countries like Pakistan, where two-thirds of the population does not even have a bank account.

Accelerating digital financial inclusion, e-learning, e-health

However, this fact also accelerates financial inclusion and in jurisdictions where mobile financial services are allowed. These governments realize that telco-enabled financial services allow for the speediest, safest and virus-free cashless distribution of financial aid, as well as for continuity of some economic activities through telco facilitated e-commerce or e-service.

We believe these trends provide a strong impetus to bridge existing basic digital and financial divides in the countries where we operate.

Demand for some services, like e-learning and e-health, seem to be temporary but this is only at the first glance. We think that social distancing will remain a pattern of our lives for a period beyond the end of lockdowns and the longer the services are in demand, the more likely they become part of our lives – especially if these services are wholesome and provide a one-stop solution.

For instance, in Ukraine, VEON operator [Kyivstar](#)'s "online doctor" service not only allows the customer to receive the remote doctor consultation, but also to obtain a digital prescription, which is then digitally accepted by a pharmacy. We think such types of services have a long shelf life.

Remote work is another trend that is here to stay. This is not only because travel is unlikely to resume until the pandemic is over, but mostly because working from home has proven to be often more efficient and more convenient, reminding many people about the need for a better work/life balance.

This means demand for secure connectivity with a high throughput and reliability – which suddenly moved away from traditional business areas of towns to the residential areas – is unlikely to go back to pre-COVID times even after the cure for the virus is found.

It is important that telco views are shared by the governments, and not in simply acknowledging our critical role for the societies and economies we operate in – which was brought to the fore by the pandemic – but also that telcos are the best partners for governments to accelerate the closure of digital and financial divides, and also becoming guardians of private data.

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Remote work is another trend that is here to stay.

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Alex Kazbegi

Telcos are eager to play their role if the necessary licences are issued, additional frequencies are granted, and laws protecting sovereignty of data are passed. ■



Any views expressed in this article do not necessarily reflect the views of ITU.



At TDAG-2020, let's seize the momentum to build back better after COVID-19

By Doreen Bogdan-Martin

Director, ITU Telecommunication Development Bureau

■ Today we opened our doors – virtually – on the first-ever fully remote meeting of the Telecommunication Development Advisory Group (TDAG).

This group plays a key consultation role in defining the actions of my Bureau in accelerating digital development. But since our last meeting in 2019, the world has changed beyond all recognition.

In many of ITU's 193 Member States, communities remain in full or partial lockdown. And when restrictions are eventually relaxed, we will all emerge into a world that is very different from the one we remember from TDAG-19.

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Since our last meeting in 2019, the world has changed beyond all recognition.

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Doreen Bogdan-Martin

Note: This article was published on the first day of the ITU Telecommunication Development Group Advisory (TDAG) virtual meeting, held from 2 to 5 June 2020.



“

I urge that our 'new normal' be based on the principle of broadband access for all.

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Doreen Bogdan-Martin

The COVID pandemic has ravaged our populations, our health-care systems, and our economies. No one is sure what the “new normal” will look like, post-COVID – and for many, that post-COVID world still seems a long way off.

But one thing this crisis has dramatically, irrevocably and indisputably reinforced is the vital importance of connectivity.

Those who enjoy the kind of high-speed connections that will enable remote participation in this year’s TDAG are among the lucky few.

Around the world, some 3.6 billion people still have no connectivity at all. And many, many hundreds of millions more struggle with access that is too slow, too costly, and too unreliable to make a meaningful difference to their lives during this crisis.

If there’s one thing the unprecedented events of the past few months have conclusively illustrated, it is the life-changing importance of being connected.

It is clear that we *cannot*, and *must not*, accept as “normal” a situation where every second person on the planet has to manage without this vital digital lifeline.

‘New normal’? Broadband access for all

So when we set about defining a “new normal” for our post-COVID world, I urge that our “new normal” be based on the principle of broadband access for all.

United Nations Secretary-General António Guterres encourages us to use the COVID-19 crisis to “build back better”. I hope, through TDAG, and working collaboratively with ITU’s other Bureaux, that we can take this one step further and help the world to “build back better with broadband”.

I believe the time has never been better to harness the intense focus governments are now according digital networks and services, in the wake of the COVID-19 pandemic.

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I believe the time has never been better to harness the intense focus governments are now according digital networks and services.

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Doreen Bogdan-Martin

One important agenda item for this year's TDAG meeting is the start of preparations for next year's World Telecommunication Development Conference (WTDC-21), where we will debate and agree new strategies to accelerate implementation of the Buenos Aires Action Plan.

WTDC-21 represents a truly unique opportunity to make huge strides forward in connecting the unconnected, building government and industry cooperation around a global "big dig" so that we get those without access online as fast as possible, and leverage the power of digital to achieve the Sustainable Development Goals (SDGs).

COVID-19 has taken away so much. But it has given the global development community one very important thing, and that is the ear of the world's decision-makers, at the very highest level.

ITU can be a prime mover in driving real and rapid progress towards a world of universal connectivity, and universal opportunity. At TDAG-2020, I want us to seize that chance, and to be a part of the change we all want to see. ■

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ITU can be a prime mover in driving real and rapid progress towards a world of universal connectivity, and universal opportunity.

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Doreen Bogdan-Martin

World Telecommunication Development Conference (WTDC-21)

**Addis Ababa – Ethiopia
8-19 November 2021**



Leveraging ICTs to build back greener after COVID-19

By Aprajita Sharrma

Co-Rapporteur for ITU-D Question 6/2

By Haidar Baqir

Emergency Telecommunications and Climate Change Coordinator, ITU

■ While COVID-19 has disrupted many societal behaviour patterns worldwide, some new, post-pandemic behavioural trends just might be worth keeping if we want to build back better – and greener – especially when it comes to information and communication technologies (ICTs).

Instead of travelling by car to the supermarket or our favourite restaurants, we learn to cook at home with groceries we have ordered online.

Rather than flying to conferences or business meetings around the world, we now connect to virtual events from our home offices.

Still, consumption through digital platforms and equipment is not without environmental and climate-related consequences. According to a [2018 estimate by Nature](#), information and communication technologies account for more than 2 per cent of global carbon emissions.



Follow the work of ITU-D Study Groups [here](#).

“

Consumption through digital platforms and equipment is not without environmental and climate-related consequences.

”

Aprajita Sharma
and Haidar Baqir

At the same time, ICTs can serve as key enablers that contribute to assessing climate change impacts worldwide. They do this by providing real-life risk assessment capabilities, enabling viable transformation, assisting in making informed decisions about climate change mitigation, and supporting knowledge sharing.

A public webinar was recently organized by the ITU Telecommunication Development Sector (ITU-D) to further understand how we might leverage ICTs to fight climate change and rebuild greener economies after COVID-19.

Following a welcome to all the panellists and participants by Ahmad Reza Sharafat, Chairman of ITU-D Study Group 2, the webinar was moderated by Aprajita Sharma, Co-Rapporteur for ITU-D Question 6/2 (ICTs and the environment).

The climate connection to coronavirus

The webinar featured in-depth deliberations on the value of Earth observations for climate action and the accelerated use of technology to promote low-carbon behaviour post-COVID-19. Panellists also debated how the clean tech sector proposes to change its role towards sustainability in a post-pandemic era.

Sara Venturini, who leads the Group on Earth Observations (GEO) Secretariat's work to promote the use of Earth observation data, shed light on the positive impacts of COVID-19 on the space industry. She explained how big data analytics services along with promising solutions from the Earth-observation community are already seeing more demand as they serve as useful tools for tracking both pandemic and climate impacts.

Satellite observations show measurements of COVID-19 impacts on the environment, such as concentrations of carbon dioxide and other greenhouse gases (GHGs) in the atmosphere, will not decrease as a result of lockdown measures, Venturini noted. "The most substantial impact of emission reductions on atmospheric GHG concentrations is visible in urban areas, where emission changes can be detected by direct flux measurements," she said.

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The measures taken during the COVID-19 crisis are no substitute for long-term mitigation emission reduction measures by countries under the international climate regime, namely the Paris Agreement.

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Sara Venturini

Scientific Officer/Climate Coordinator, Group on Earth Observations (GEO)

According to Venturini, peer-reviewed scientific publications demonstrate that while the climate does not influence the spread of SARS-CoV-2 in a direct way, there is a need for a coordinated assessment of the potential association between COVID-19 and the climate. “The measures taken during the COVID-19 crisis are no substitute for long-term mitigation emission reduction measures by countries under the international climate regime, namely the Paris Agreement,” she said.

In green economies, ICTs are key

The United Nations Economic and Social Commission for Asia and the Pacific ([UNESCAP](#)) Economic Affairs Officer, Janet Salem, discussed how digital technologies can enable a circular economy. A key part of the solution is for governments to encourage greater use of ICTs for sustainability, she highlighted, presenting several examples of green behaviours involving ICTs, such as using remote sensing and machine learning technologies including image recognition to monitor, assess and sustainably manage plastic waste.

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Digital tools can help design materials to be formed out of a great mix of things to have specific properties, especially metals.

”

Janet Salem

Economic Affairs
Officer, UNESCAP

Salem also emphasized another exciting application area – the use of Artificial Intelligence (AI) in sustainable product design. “Digital tools can help design materials to be formed out of a great mix of things to have specific properties, especially metals,” she said. In fact, “the European Space Agency has been using AI to understand what specific combination or recipe of alloy can produce the technical specifications needed for the product, while still meeting the specifications for recycling at the end of its life,” she explained.

The conversation then turned to clean tech, with [GSMA](#)'s resident expert Dulip Tillekeratne presenting his organization's studies on green energy, along with key findings and examples of mobile network operators (MNOs) taking lead in natural resource management (NRM), e-waste, management of plastics and recycling, as well as towards converting “bad grid and off-grid” towers to renewable solutions.

The ITU Telecommunication Standardization Sector ([ITU-T](#)) Working Party 2/5 Chairman Paolo Gemma shared details on the development of ITU standards with emphasis on their use in applying smart energy solutions and advancing a green transition through ICTs.

For instance, the standard developed by [ITU-T L.1305](#) on data centre infrastructure management system uses intelligence strategies based on big data and AI technology to actively predict and automatically manage IT infrastructure resources in ways that drive down system costs while boosting energy efficiency.

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ICTs can help reduce global emissions by 15 per cent.

”

Paolo Gemma

Chairman, ITU-T
Working Party 2/5

Gemma also noted that ITU has recently published a [document on efficient ICT solutions](#) towards climate change adaptation. “ICTs can help reduce global emissions by 15 per cent,” he noted, emphasizing that global challenges such as climate change can be addressed by frontier technologies, thanks in part to solutions offered by ITU. “ITU is helping the ICT sector move towards a carbon neutral path,” said Gemma.

Towards an economically and environmentally sound recovery

As the world sets its sights on the recovery stage of the pandemic, governments can encourage the greater use of ICTs for sustainability in two key areas: environmental policy and economic incentives. ITU members can use different technologies to

achieve environmental goals just as they did to fight the pandemic. Incentives to include environmental goals or applications in ICT-relevant policy should be considered as well. COVID recovery plans are often accompanied by economic stimulus packages. Funds earmarked for ICTs can also serve as further incentive to leverage ICTs to achieve environmental goals.

As we move out of our lockdowns, we have an unprecedented opportunity to develop new habits that can lead us to safe limits, both in terms of public health and within a 1.5-degree planetary warming scenario. While the webinar expert panellists showed how ICTs play a key part in an economically and environmentally sound recovery, it is our combined hope that technologies can be used to leverage that opportunity much further. ■



Why effective disaster management needs enabling policy environments: Lessons from COVID-19

By Abdulkarim Oloyede

Vice-Rapporteur for ITU-D Question 5/2, Federal Ministry of Communication and Digital Economy, Nigeria

■ Among the many lessons learned from the COVID-19 pandemic is the fact that the world's telecommunication networks and digital infrastructure must be better prepared for disasters of all kinds.

Collectively, we need to ensure that drills are carried out and rapid response measures are

ready, since future disasters – including pandemics – can occur anytime, anywhere, and with little to no warning.

The good news is, many negative consequences of disasters can be diminished if robust resilience networks and disaster management tools are in place well ahead of time.

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Chris Anderson of CenturyLink Global Network advocated for public-private partnerships, declaring them as 'necessary for effective disaster management'.

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Abdulkarim Oloyede



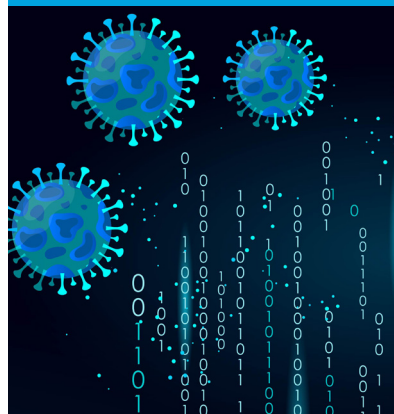
Follow the activities of ITU-D Study Groups [here](#).

This was the key lesson of a recent ITU Telecommunication Development Sector (ITU-D) public webinar on [The Enabling Policy Environment for Effective Disaster Management including for COVID-19 Response](#), chaired by Ahmad Reza Sharafat, Chairman of ITU-D Study Group 2.

During the panel session, experts discussed the importance of implementing measures and policies that would ensure the continued functioning of communication networks during disasters, such as declaring telecommunication networks as essential services or performing organized drills.



Listen to the public webinar focusing on [The Enabling Policy Environment for Effective Disaster Management including for COVID-19 Response](#)



The two-part webinar, moderated by Joseph Burton, Co-Rapporteur for Question 5/2, and Abdulkarim Oloyede, Vice-Rapporteur for Question 5/2, also featured examples of policies for preparedness as well as different responses observed around the globe during the COVID-19 pandemic.

Pre-emptive partnerships and “blue-sky” planning are key

Juan Roldan of Luxon Consulting Group initiated the presentations by discussing the challenges that come with developing a national emergency telecommunication plan (NETP). An effective NETP accounts for multiple hazards, uses multiple technologies, contains multiple phases and is supported by multiple stakeholders, he said.

Roldan also emphasized the need for political will and support for an NETP, highlighting that governments must clearly identify which specific department or agency is responsible for emergency telecommunications.

Continuing on the theme of cross-sectoral collaboration, Chris Anderson of CenturyLink Global Network advocated for public-private partnerships, declaring them as “necessary for effective disaster management.” Such a partnership should always be assembled during the “blue sky scenario,” meaning before disaster has actually struck, since it is much harder to bring the necessary people together during a crisis, he cautioned.

Concluding the first session of the two-part webinar, Paul Margie of *Télécoms Sans Frontières* (TSF) explained that while disaster management is never one-size-fits-all, commonalities can be observed in the countries where TSF works. These include training beforehand, formally recognizing information and communication technologies (ICTs) as critical infrastructure, publicly identifying points of contact for ICT response, developing procedures so experts can enter quickly, and adopting mechanisms within the telecom regulator to speed decision-making, he said, highlighting how a “Special Temporary Authority” can enable rapid changes to be made when they are most needed.

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The second segment of the webinar focused on COVID-19 responses that have been observed in different countries worldwide.

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Abdulkarim Oloyede

COVID-19 responses from around the globe

The second segment of the webinar focused on COVID-19 responses that have been observed in different countries worldwide. ITU Programme Officer Maritza Delgado explained how tracking and analysing these responses is one of the main objectives of [REG4COVID](#), an ITU initiative designed to help communities stay connected during crises and to prepare medium- and long-term recovery measures. “The Global Network Resiliency Platform is just one example of what we have been doing,” she said.

Kathryn O’Brien, Chief of Staff, International Bureau of the US Federal Communication Commission (FCC) shared some guiding principles that her organization has been focusing on in the United States, the first being to set clear priorities. “If everything is a priority in a crisis, then nothing is a top priority,” she said.

O’Brien also highlighted the importance of collaborating with the private sector. “Look to the market before jumping to mandates,” she added. “Industry was asked to step up and address the top priority: keeping Americans connected.”

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Kathryn O'Brien, Chief of Staff, International Bureau of the US Federal Communication Commission (FCC) shared some guiding principles that her organization has been focusing on in the United States.

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Abdulkarim Oloyede

Technology must go hand-in-hand with policy when it comes to effective disaster responses.

“Information on people flow and density statistics [enables] better-informed decision-making,” affirmed Professor Ryosuke Shibasaki of the University of Tokyo, who presented Mobipack: open source analysis software that uses big data from mobile serial data to support COVID-19 responses by measuring movement. “The development of this software was originally triggered by ITU in 2015,” he noted. “It is now in operation in several African countries.”

Connecting from Lagos, Nigeria, MainOne CEO Funke Opeke shared the challenges faced by developing countries in coping with COVID-19. Here, the formal emergency planning framework includes road maintenance, but does not include telecoms, she said.

Opeke noted that while policy frameworks for critical national infrastructure are emerging, implementation is lagging behind.

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Connecting from Lagos, Nigeria, MainOne CEO Funke Opeke shared the challenges faced by developing countries in coping with COVID-19.

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Abdulkarim Oloyede

Traffic surges of up to 50 per cent during the period of COVID-19 created infrastructure challenges in India as well, pointed out Rahul Vatts, Chief Regulatory Officer at Bharti Airtel Limited. “We sorted out special permissions from the government and the regulator to enable our movement across critical sites. To address maintenance

areas, we worked with OTT providers,” he noted, highlighting how network optimization was a continuous necessity and “a big learning for India.”

Vatts also stated that the Indian government changed the dial tone and ringtone of all landlines – nearly 987 million working phones – to a special COVID-19 message asking subscribers to stay home, and to practice social distancing.

Enabling policy today saves lives tomorrow

Access to a robust, resilient and secure ICT infrastructure worldwide is critical in a pandemic, and in any kind of disaster. If you want to have power, security, health and sanitation – essential services in a global emergency – you need ICTs, as one of the panellists rightly noted.

And the ability of ICTs to perform the necessary function relies on an enabling policy environment, from granting temporary authority for additional spectrum use, as explained by Ms O’Brien, to giving complimentary recharge margins for emergency calls, as Mr Vatts highlighted.

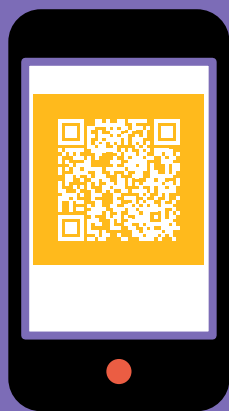
ITU Member States can and should strive to be among the countries that are disaster-ready, not only in terms of infrastructure, but also in terms of regulatory policy.

One way to start is by taking opportunities like the one provided by ITU-D Study Groups, to learn from each other’s experiences in implementing disaster response plans while skies are blue. ■

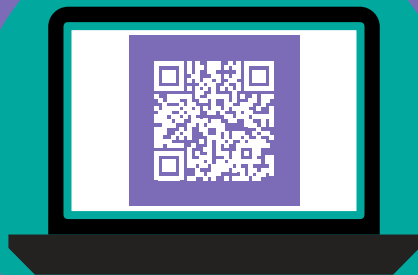
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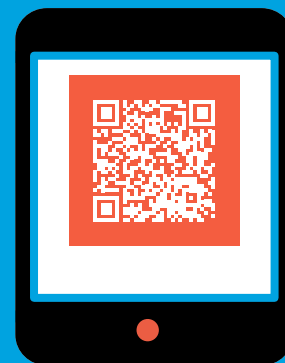
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