

New regulatory frontiers

How emerging technologies are creating huge opportunities and potential challenges

New regulatory frontiers – opportunities and challenges

Houlin Zhao, ITU Secretary-General



“Regulators and policy-makers from around the world are in a unique position to unleash the opportunities brought about by new technologies and business models.”

Regulators and policy-makers from around the world are in a unique position to unleash the opportunities brought about by new technologies and business models. At this year’s ITU Global Symposium for Regulators ([GSR-18](#)), we saw information and communication technology (ICT) regulators meet with key private sector players as well as regulators from other sectors to discuss new and improved ways to address regulation for the digital economy.

We are indeed looking at a cross-sectoral revolution, which comes with a new set of challenges.

GSR-18 began with a pre-event thematic Global Dialogue where panellists had the opportunity to explore the relation between artificial intelligence (AI), the Internet-of-Things (IoT), and cybersecurity, and the potential impact at the global level.

Through a range of high-level meetings and discussions, participants shared best practices and challenges and discussed next steps to improve national policies. Discussions were largely focused on ITU’s central mission – how to harness new technologies to connect people around the world and the importance of giving people, countries and regions the necessary tools to leverage ICTs for social and economic development.

I am delighted to present you here the ITU News Magazine highlighting some of the GSR-18 outcomes and discussions.

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How emerging technologies are creating huge opportunities and potential challenges

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Braving new regulatory frontiers

This year's annual ITU Global Symposium for Regulators ([GSR-18](#)) brought together more than 600 participants from more than 120 countries to Geneva, Switzerland, from 9 to 12 July to discuss new regulatory frontiers in an increasingly dynamic and interconnected world.

The goal of the forum, the world's largest specialized gathering of information and communication technology (ICT) regulators and policy specialists, was to collaborate on regulatory measures that would leverage ICTs to achieve the United Nations Sustainable Development Goals ([SDGs](#)).

It also served to equip policy-makers, regulators, and private-sector professionals with a deeper understanding of the benefits and risks of new technological innovations.

Participants discussed new regulatory frontiers to achieve digital transformation, examining the implications of emerging technologies including Artificial Intelligence (AI), the Internet of Things (IoT) and fifth-generation mobile technology (5G), as well key issues including cybersecurity, privacy, and trust.



“I am convinced that with our collective wisdom, emerging technologies will boost sustainable development for the benefit of all human beings.”

Brahima Sanou,
Director, ITU
Telecommunication
Development Bureau

“The move towards a more open, collaborative, incentive-based and cross-sectoral regulation will be critically important in delivering on the rich promise of the digital economy, not just for the benefit of consumers and businesses – but to all those who are still unconnected around the world,” [ITU Secretary-General Houlin Zhao](#) said during the event’s opening.

Brahima Sanou, Director of the ITU Telecommunication Development Bureau (BDT), called for all the stakeholders of the ICT ecosystem to come together. “I am convinced that with our collective wisdom, emerging technologies will boost sustainable development for the benefit of all human beings.”

Responding to emerging technologies

GSR-18 featured a focus on the rapid growth of emerging technologies and their potential to improve lives through increases in data, productivity and connectivity.

As several speakers noted, Internet-of-Things (IoT) connected devices will soon number more than 20 billion, the development of 5G platforms could drive trillions of dollars in revenue by the end of the next decade, and AI is on track to impact on the majority of industries worldwide.

Setting the scene for 5G: Opportunities and challenges

An ITU report on [Setting the Scene for 5G: Opportunities and Challenges](#) will be released shortly and made available [here](#).





“Our industry is moving at an incredible pace, and we are limited in this evolution only by our imagination.”

Sorin Grindeanu,
Chairman of GSR-18 and
President of ANCOM

“Our industry is moving at an incredible pace, and we are limited in this evolution only by our imagination,” said Sorin Grindeanu, Chairman of GSR-18 and President of the National Authority for Management and Regulation of Communications in Romania ([ANCOM](#)).

The impact of these exponential shifts in technology are being felt across industries and offer both opportunities and challenges for policy-makers, business leaders and regulators. GSR-18 attendees agreed that the unprecedented speed and volume of this evolution creates an impetus for collaboration toward informed, effective regulation.

In the face of this transformation, regulators must play the role of the “gods and goddesses,” said Manish Vyas, President of communications, media & entertainment business, and CEO of network services, [Tech Mahindra](#). They are faced with the complex task of fulfilling the possibilities of these emerging technologies and delivering them “in a fashion where the world, humanities, and industries feel extremely secure.”

Choosing optimism over fear

More than ever before, cyberattacks are threatening the security of countries, companies and individuals, and advancements in technology are raising new concerns about privacy and data protection, among other issues. Many of the speakers highlighted these concerns during the discussions at GSR-18, but the overall sentiment of participants was one of optimism.

“We should make sure we don’t get lost in the details, that we don’t get lost in the fear mongering,” said Serge Droz, Vice President of CERT (Computer Emergency Response Team), and Director of the Board of FIRST (Forum of Incident Response and Security Teams), [Open Systems](#). Many of the speakers called for building robust infrastructures, systems and regulations that take advantage of technology to enable the “good guys” and create positive benefits for society as a whole.

“Technology is neither inherently good nor evil,” said Neil Sahota, IBM Master Inventor and Worldwide Business Development Leader, [IBM Watson Group](#). “We can use [technologies] to build or we can use them to destroy. It is really on us to decide what’s the best thing to do with these tools.”

Balancing regulation with innovation

Many of the discussions at GSR-18 featured the delicate balancing act facing regulators to regulate emerging technologies to address security and privacy concerns without limiting innovation or development.

“Fast-moving times require fast-moving regulatory responses” said Nerida O’Loughlin, Chair and Agency Head, [Australian Communications and Media Authority](#). “That means we may not be able to wait for the perfect regulatory framework to be developed before we need to act.” At the same time, she cautioned against pre-emptive regulation. “As a regulator, we have to make sure we don’t get ahead of the technology by trying to regulate a threat we can’t really define, let alone understand.”

Ajit Pai, Chairman of the United States’ Federal Communications Commission ([FCC](#)), said governments should resist the temptation to regulate new technologies by forcing them into old frameworks. “When dealing with new tech, I believe that one of the foundational principles for government should be regulatory humility,” he said.

“We need balance to make sure we’re not necessarily preventing innovation and at the same time we are not opening ourselves up to a lot of headaches in the future,” Sahota added.

The key is to create a secure environment where innovation can flourish, said Bocar Ba, Chief Executive Officer, [Samena Telecommunications Council](#), and Chair of the Private Sector Chief Regulatory Officers Meeting and Industry Advisory Group for Development Issues Meeting. “We need to look at the objective: What are we trying to achieve? What do we want to do? How do we want our future society to look? We need to harmonize, and we need to work together.”

Moving forward together

Throughout GSR-18’s four days of interactive panels, break-out sessions and ongoing dialogue, there remained a common theme: a shared commitment to achieving ITU’s central mission to leverage ICTs to improve lives.

To that end, GSR-18 produced reports, discussion papers and the [GSR-18 Best Practice Guidelines on new regulatory frontiers to achieve digital transformation](#), outputs that reflect the collaborative spirit of the conference.

“There is no law that is going to bring us one solution,” said Raquel Gatto, Regional Policy Advisor of the Internet Society ([ISOC](#)). “There is no company that by itself will make it done. It takes all of us. And we can get there.”



Achieving digital transformation – Best practices and contributions from the regulators

Every year one of the important outcomes of the Global Symposium for Regulators is the publication of best practice guidelines.

Here are the [GSR-18 Best Practice Guidelines on new regulatory frontiers to achieve digital transformation](#) as agreed and adopted during the Symposium.

Contributions from the regulators

It is without doubt that governments and regulators have a key role to play in extending regulatory frontiers to new horizons and creating an enabling and trusted environment to achieve digital transformation.

For this reason the national regulatory authorities were invited, prior to GSR-18, as part of the GSR consultation process, to identify new and innovative policy, regulatory and business measures needed to respond to the changing landscape, protect consumers and things, and ensure trust to enable the digital transformation to achieve its full potential.

Best practices

The best practices identified and endorsed at GSR-18 will guide policy-makers and regulators in:

- fostering the potential of emerging technologies for digital transformation;
- promoting business and investment models to support digital transformation; and
- considering policy and regulatory approaches for continued innovation and progress.





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Tracking ICT regulation

ITU gave a presentation of the [ICT Regulatory Tracker](#) at GSR-18 – an evidence-based tool to help decision-makers and regulators analyse and better understand the regulatory environment for the information and communication technology (ICT) sector – as well as the maturity of national regulatory frameworks.

The tracker can help identify gaps in existing regulations and may also serve as a blueprint for regulatory reform.

Constantly refining the data sets

ITU first launched the tracker in 2013, and has been refining and enhancing the data sets since.

It is the only comprehensive ICT regulatory metric that currently exists for 193 countries.

Beyond the metrics, ITU has launched a new work stream on past, present, and future regulation, which tackles regulatory trends and explores some of the thorny issues of digital transformation.

Some of the research and analysis developed is published as part of ITU's [ICT Regulatory Outlook 2017](#), launched last year (see next page). The 2018 edition will be available in just a few months.

Measuring regulatory collaboration

ITU has studied the level of collaboration between the telecom regulatory authority and the competition authority in ITU Member State countries. This research will be part of the forthcoming 2018 edition of the ICT regulatory outlook.

Here are some findings:

- There has been collaboration between the telecom regulatory and the competition authority in 90 countries.
- Fifty per cent have practiced informal collaboration in information and communication technology (ICT) regulation.
- Thirty per cent have codified collaboration in formal agreements or law.
- In several countries, a joint committee has been established to facilitate collaboration.
- Europe, the Americas, and Africa are the regions where collaboration is strongest.

- However, in 40 countries, there is still no collaboration whatsoever.
- In 46 countries, two separate agencies exist for telecom and competition issues.

Forthcoming ICT Regulatory Outlook 2018

ITU is currently also examining the collaborative practices from ICT regulators and the consumer and data protection authorities, the financial and the regulatory agencies, the broadcasting authority and any appointed authority dealing with Internet-related issues.

ITU is looking forward to working with stakeholders to pinpoint the level of collaboration in ICT regulation among institutions which will help to build on ITU's research to develop best practices and lessons learned and to making the benefits available to the ITU membership.



(Highlights)



GLOBAL ICT REGULATORY OUTLOOK 2017

The ITU's Global ICT Regulatory Outlook 2017, the first of an annual series of reports tracking market and regulatory trends in the information and communication technologies (ICT) sector and their implications across the economy is available [here](#).

Of the many findings featured in this report, one stands out as particularly significant. It is this:

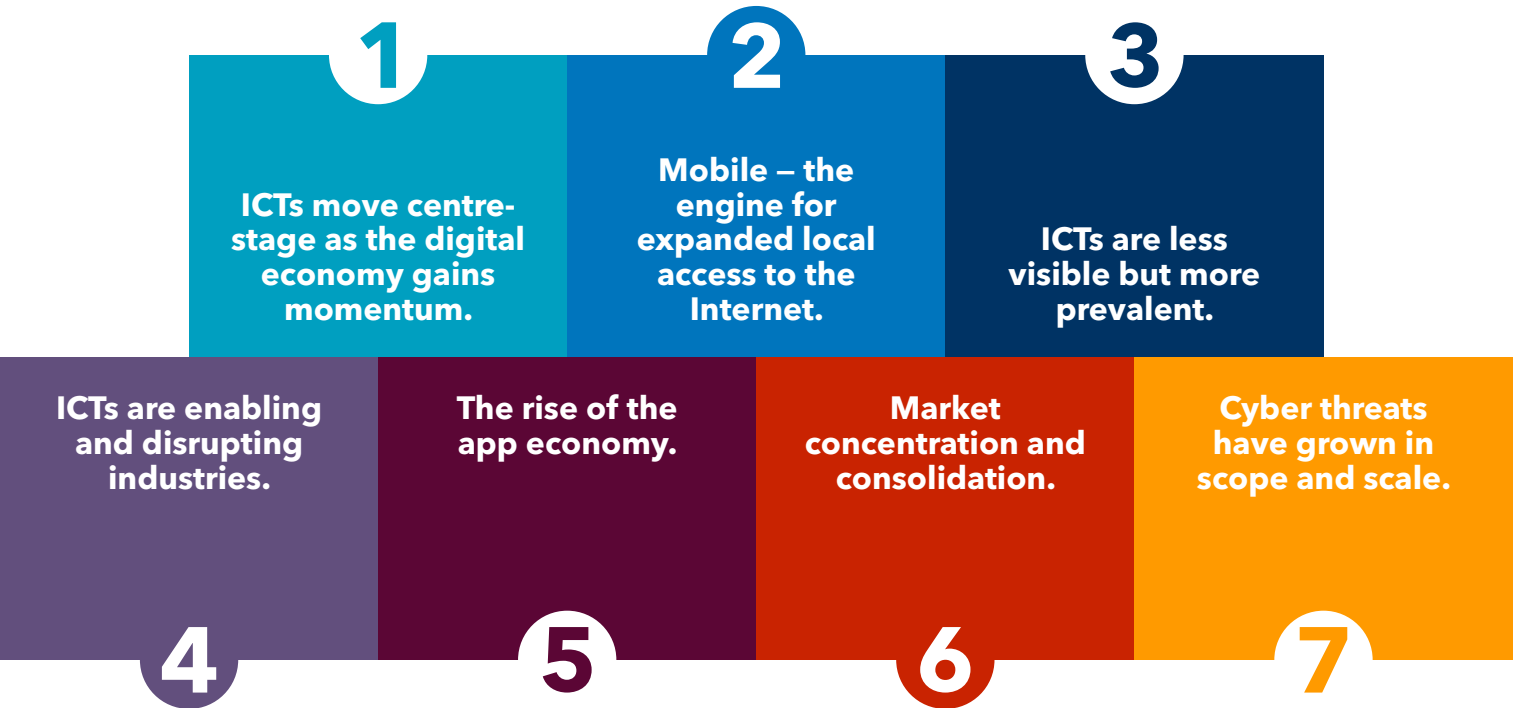
The move towards a more open, collaborative regulatory approach, together with the role played by the information and communication technology (ICT) regulator in orchestrating this, will be critically important in delivering on the rich promise of the digital economy – to the benefit of consumers and businesses, including the 3.9 billion people who remain unconnected to the Internet.

Cluster	C1: Regulatory Authority	C2: Regulatory Mandate	C3: Regulatory Regime	C4: Competition Framework	Overall Score
Max Score:	20	22	20	28	100
Country					
Afghanistan	15.00	20.00	22.00	16.67	73.67
Albania	18.00	17.00	24.00	24.00	85.00
Algeria	17.00	17.00	18.00	12.50	64.50
Andorra	8.00	8.00	8.00	3.00	25.00
Angola	17.00	20.00	18.00	10.67	65.67
Antigua & Barbuda	8.00	11.00	8.00	15.33	42.83
Argentina	18.00	20.00	24.00	28.00	90.00
Armenia	19.00	18.50	18.00	28.00	83.50

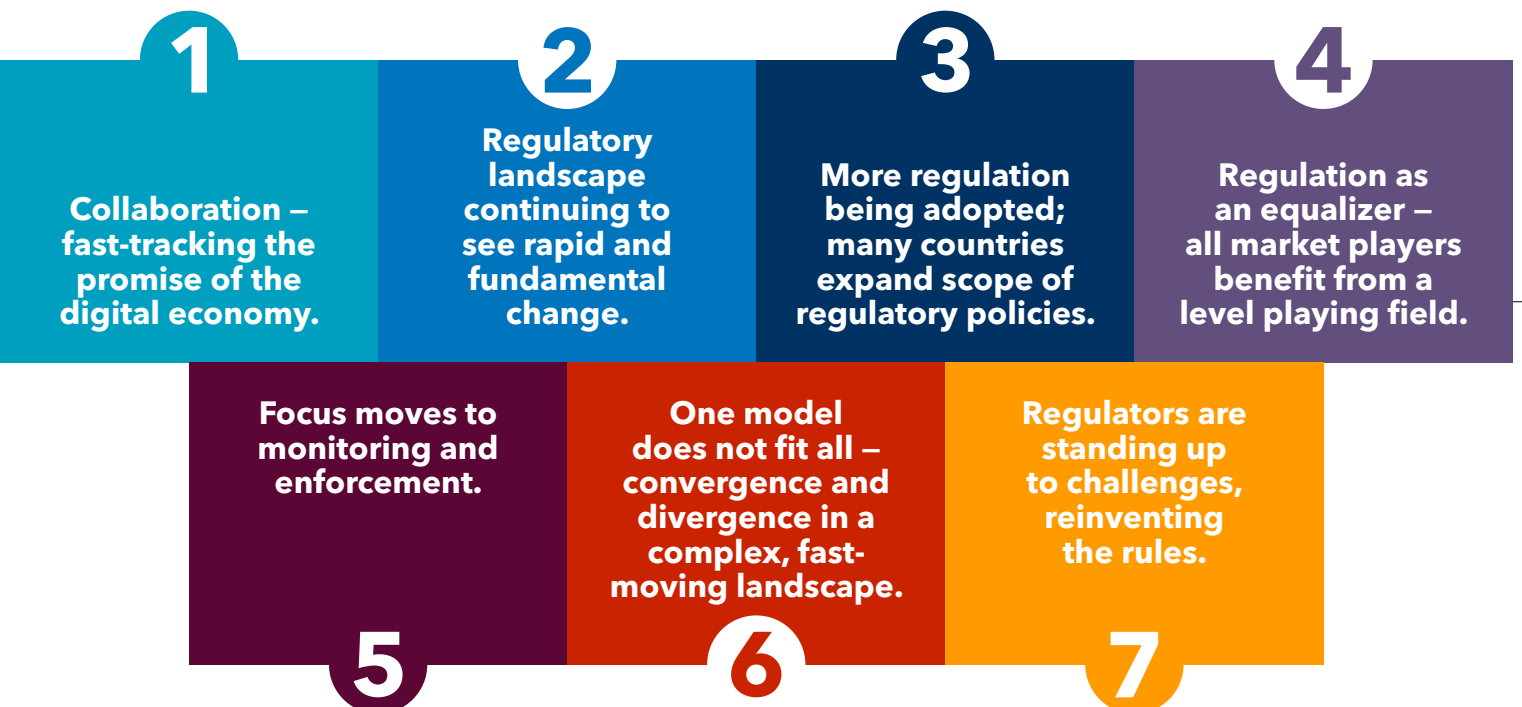
**Click [here](#)
for the ITU's
ICT Regulatory
Tracker**

Seven major trends

ICT markets move



Regulatory landscape evolves



See the full [Executive summary](#) for more.
Look out for the Global ICT Regulatory Outlook 2018, coming soon!



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Why human-centric technology unlocks consumer trust

Enancing consumer trust is a priority for regulators and industry in today's smart data-driven economy. Paradoxically, it is the very data propelling emerging technologies such as Artificial Intelligence (AI) that challenges consumer trust.

To understand the difficulty in enhancing consumer trust in a data-driven world, it is important to examine data's role in the smart economy. The GSR-18 session, *The Human in the middle: How to protect personal data in a smart data-driven economy?* did just that.

The panel of public and private sector representatives and regulatory experts provided key insights on human-centric technology development by transcending discussions of the status quo.

The consensus? At the close of the panel it was clear that to enhance consumer trust, government and industry actors must work together to ensure that the smart data-driven economy is driven by and for, real people, and with end users' interests and rights as a central focus.

Why put the human at the centre?

Giving consumers ownership and control over their personal data is empowering for two reasons, said panellists. First, data ownership and control permits consumers to be active – and conscious – participants in the smart data-driven economy.

Stephen Bereaux, Chief Executive Officer of the Utilities Regulation and Competition Authority (URCA) of the Bahamas championed consumer control. “That click to accept... is a sale – not just of what you thought you were buying – it’s a sale of your data,” he said. Bereaux promoted awareness-building to ensure people are as equally aware of their consumer rights when transacting online as they are offline.

The second reason why data ownership and control empowers consumers is because it gives them the freedom to choose. Having the right to choose how your data is collected, used, shared and stored increases consumer trust. For this reason, Danielle Jacobs, President of the International Telecommunications Users Group (INTUG) assured participants that industry wants to protect personal data. She detailed how businesses have been preparing for the passage into law of the European Union’s General Data Protection Regulation (GDPR).

Jacobs’ assertion that these preparations were challenging underscores the necessity and difficulty in enhancing consumer trust in today’s economy.



“That click to accept... is a sale – not just of what you thought you were buying – it’s a sale of your data.”

Stephen Bereaux,
Chief Executive Officer
of the Utilities Regulation
and Competition Authority
of the Bahamas

Why now?

The desire to increase consumer trust stems from a recognition that there are gaps in the smart data-driven economy.

Dr Dan Hayden, Data Strategist at Facebook argues that some of these gaps – education, empowerment, being informed, having trust, being in control – are common challenges across industry and government. He said, “Facebook is a data-driven company and, though it is large, it shares a common problem with the regulators.”



“We know that we have to work together in an integrated fashion in order to find consensus regionally, but also globally.”

Hannia Vega,
President of the Council of
the Telecommunications
Superintendence, Costa Rica

The time is now to enhance consumer trust because as Hayden remarked, “You’re going to be operating digitally and through data. Whether that’s your present, it certainly will be your future.”

There is another reason why enhancing consumer trust is essential. The smart data-driven economy has the potential to advance sustainable development goals and change citizen experiences for the better. Fulfilling this potential by the 2030 deadline requires consumer buy-in. Trust is a prerequisite of a consumer’s sense of empowerment and confidence in today’s economy. The consensus on day three of GSR-18 was that designing technology – and regulation – with the human at the centre – fosters consumer trust.

The challenges

Panellists discussed three challenges to human-centric technology development in the smart data-driven economy. They are: (1) design and innovation; (2) infrastructure; and (3) trust.



The design and innovation challenge exists at both the regulatory and product levels.

Herein lies the challenge for the regulators: How do they design regulation that enhances consumer trust along the entire customer journey?

Increasing trust in a data-driven society

In a world increasingly driven by data, careful regulation will be key to take advantage of the benefits, while mitigating the risks.

“*Make no mistake, we are into the Fourth Industrial Revolution now, being driven by data... To plan and execute any programme now, you need a lot of data.*”

Godfrey Mutabazi,
Executive Director of the Uganda
Communications Commission

Data shapes planning in fields including manufacturing, agriculture and education. It is also behind everything from national identity cards to passport registrations to birth registration. Given the prevalence of data in society, regulators must address the issue of data protection to increase trust, Mutabazi says.



Watch this GSR-18 video to learn more

See the full list of [GSR-18 video interviews](#).

Eng. James M. Kilaba, Director General of the Tanzania Communications Regulatory Authority (TCRA) emphasized that trust is fundamental to the success of the digital transformation and that regulations in new technologies are necessary for consumers to have confidence in and trust services using new digital technologies.

While not explicitly stated, the panel hinted at the nuanced nature of the challenges to human-centric technology development across varying contexts.

For example, Godfrey Mutabazi, Executive Director of the Uganda Communications Commission (UCC) cited infrastructure as a challenge. In his view, there is a need for a reliable IT infrastructure to enable data collection, transmission and processing.

Mutabazi also spoke about the Ugandan public's wariness of possible privacy intrusions by saying: "They see the government as a Big Brother."

How can we solve these challenges?

Three main solutions to the challenge of human-centric technology development emerged over the course of the session. They are: (1) education; (2) collaboration; and (3) information-sharing.

Solutions



1

Education.

Kilaba asserted that education and training are a must in today's society.

Collaboration.

Hannia Vega, President of the Council of the Telecommunications Superintendence (SUTEL), Costa Rica, advocated working together in an integrated and collaborative way. Bereaux called for collaboration to go beyond telecommunications and data commissioners to include all regulators.

2

Information-sharing.

Mutabazi spoke about how Uganda facilitates information sharing. Firstly, the country established the National Information Technology Authority (NITA) to allow government agencies to fast track digitalization. Secondly, Uganda is currently building a digital information service that will centralize individual information for its citizens.

3

Conclusion

In the broader scope of GSR-18, the "human in the middle" session underscored the uncertainty associated with emerging technologies and the data-driven economy. The session also relied on the themes of collaboration, empowerment and transparency that were present throughout.

The value of the session is how it showed just how important keeping the focus on the user is for enhancing trust in the smart data-driven economy.



Realizing the benefits of digital identities

As people's lives increasingly move online, countries are looking to digital identity systems to provide legal proof of identity and increase citizens' access to services. In doing so, digital identities could also help countries in their efforts to fulfill the United Nations Sustainable Development Goals (SDGs).

That was the theme of the panel "Digital identity across different platforms – can this help achieve the SDGs and foster inclusion for all?" The panellists, a range of leaders from the public and private sectors, discussed the opportunities and challenges of digital identities.

"In a digital world, we all do digital transactions," said Dr Ram-Sewak Sharma, Chairman of the Telecom Regulatory Authority of India (TRAI). "Therefore, the questions "Who are you?" "Are you who you claim to be?" are to be answered in a digital manner."

The main topics of the panel included the benefits of digital identities – with examples from Ghana and Oman – the role of mobile operators, and the importance of regulation in creating secure, reliable digital identity infrastructures.

The case for digital identities

More than 1 billion people around the world lack proof of legal identity. To address this gap and achieve SDG Target 16.9 – to provide legal identity for all – countries have been increasingly turning to electronic identity systems.

The benefits of these systems include the prevention of identity theft and the increase in access to services such as health information and financial systems, which can contribute to the growth of the digital economy and empower citizens.

“If you have an identity system that is inclusive and unique, then it is a win-win from the citizen perspective and the government perspective,” Sharma said.

In Ghana, the government National Identification Authority (NIA) has created the [Ghana Card](#), a biometric card that combines existing identity systems including driver’s licenses, social security cards and health-insurance cards into a “harmonized digital identity,” said Joe Anokye, Director General of the National Communications Authority (NCA), Ghana.

“The government set forth to have one unique national ID card, an ID card that makes a person a Ghanaian, an ID card that has applications built into it to be able to interface with existing services,” he said.



“The government set forth to have one unique national ID card.”

Joe Anokye,
Director General of the
National Communications
Authority (NCA), Ghana

In Oman, which first created a digital identity system in 2002, the government has been working with mobile providers and law enforcement agencies to transition traditional services to electronic services, said Yahya Salim Alazri, Director of the National Digital Certification Center ([Oman National PKI](#)), [Information Technology Authority](#), Oman.

These efforts would help increase efficiency and create a more inclusive society, he said. “It’s about how to adopt this technology, how to indeed make it available for people and for the government entities.”



“It’s about how to adopt this technology, how to indeed make it available for people and for the government entities.”

Yahya Salim Alazri,
Director of the National Digital
Certification Center (Oman
National PKI), Information
Technology Authority, Oman

The role of mobile

Mobile, which often reaches across society to all cultures and income levels, can play a key role in supporting digital identity projects, said Yasmina McCarty, Head of [GSMA’s Mobile for Development \(M4D\)](#). “Once you have this identity, it opens up all these life-enhancing services,” she said. (See [related article](#))

McCarty identified five ways mobile operators could help support digital identity systems.

First, mobile operators can support the enrolment of citizens. McCarty said that in Pakistan, for example, a partnership of the government, which included [Telenor Pakistan](#), [UNICEF](#) and [GSMA](#), to encourage mobile birth registrations, resulted in a 200 per cent increase in registrations.

Second, mobile operators can help with the digitization of legacy physical identity systems, like, for example, Tanzania’s recent efforts to digitalize its services.

Third, mobile operators can strengthen the government’s ability to “know your customer” (KYC), providing valuable data that help governments customize services.



“Once you have this digital identity, it opens up all these life-enhancing services.”

Yasmina McCarty,
Head of GSMA’s Mobile
for Development (M4D)

Paradigm shift of new regulations

There must be a “paradigm shift” of new regulations and new laws, Dr Ram-Sewak Sharma, Chairman of the Telecom Regulatory Authority of India (TRAI), explained in an interview at GSR-18.

“There are new technologies and new developments taking place almost every day.”

Dr Ram-Sewak Sharma, Chairman, TRAI

“The laws and regulatory systems which were made are essentially for a world of yesterday,” he says. “Many of those concepts and principles, if you apply in the virtual world also, they are becoming like hammers. They don’t capture the true spirit of the virtual world.”



Watch this GSR-18 video to learn more

See the full list of GSR-18 [video interviews](#)

Fourth, mobile operators can help provide a functional ID to allow the users to input a profile and directly connect to services, which is especially relevant for previously excluded groups such as rural populations and women.

Finally, the mobile industry can help provide authentication to prevent false information and provide the necessary trust to link citizens to services like e-government, e-health and e-commerce.

The need for regulation

Regulation is critical to ensure that digital identity systems are “robust, secure, reliable,” Sharma said. “In a connected world, where you can create multiple identities, you can really spoof identities, you can steal identities. It is important from a security perspective also to have a very robust digital identity infrastructure.”

Security concerns become more and more relevant as individuals’ digital footprints increase, said Yvette Ramos, CEO of an IP company in Geneva and VP External Relations for The International Network of Women Engineers and Scientists (INWES). “In the future, each of us will have an up-to-date-digital clone,” she said. “Activities need to be regulated, otherwise chaos will come.”

Any digital identity system must address concerns of data security, data protection and data privacy, said Annegret Groebel, Head of International Relations Department at the German regulator BNetzA, and Vice President of the Council of European Energy Regulators (CEER) Board of Directors.

(Key themes)

In addition to rules around who owns the data and who has access to the data, Groebel said it's important to educate users and make systems user-friendly. "We must make sure that they have the right to decide on whom they invite to use this data," she said.

Overall, a coordinated approach between regulators and the private sector can help reduce risks of duplication, promote interoperability, and enhance the security of digital identities, allowing citizens and governments to reap their benefits, McCarty said. "In order to ensure trust for the consumer, we have to work together, government and private sector."



“We must make sure that they have the right to decide on whom they invite to use this data.”

Annegret Groebel,
Head of International
Relations Department at the
German regulator BNetzA,
and Vice President of the
CEER Board of Directors

ITU's Digital Identity for Development project



ITU is fostering the development of the digital economy and assisting Member States in deploying digital identity initiatives that can enable value-added services in most, if not all, digital economy areas including financial services, health, agriculture, education, etc. The project includes a Guide – Digital Identity Roadmap developed to provide practical guidance to countries on the development of a national digital identity implementation plan.

The Guide – Digital Identity Roadmap will be made available shortly [here](#).



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Regulating a safe and secure AI

As artificial intelligence (AI) becomes increasingly integrated into information and communication technologies (ICTs) that run our businesses, societies and lives, regulators are faced with the complex task of minimizing threats and maximizing benefits.

Artificially intelligent machines are able to sift through and interpret massive amounts of data from various sources to carry out a wide range of tasks.

The rise in AI presents several dichotomies – between risks and opportunities, the man and machine, and constraints and enablers. Regulators must deal with these issues and uncertainties to create a safe and secure infrastructure for AI development.

“Artificial intelligence is something incredibly practical. It’s getting embedded everywhere. It doesn’t matter whether you are in a medical profession or in manufacturing or even in agriculture, you will have to deal with artificial intelligence applications,” said Anastassia Lauterbach, CEO of [1AU-Ventures](#).

How AI will change the world as we know it

The days when Artificial Intelligence (AI) was a niche technological possibility are long behind us.

AI is one of the most powerful technologies on this planet, and it has incredible potential to disrupt and define our businesses, societies and lives, said Anastassia Lauterbach, co-author of [The Artificial Intelligence Imperative](#), in a video interview.

The Internet has already disrupted about 20 per cent of global economy, and AI will transform the rest, Lauterbach says.

“That means that 80 per cent of the economy is getting transformed by Artificial Intelligence as we speak.”

Anastassia Lauterbach,
CEO of 1AU-Ventures



Watch this GSR-18 video to learn more

See the full list of [GSR-18 video interviews](#).

Risk vs. opportunity

Discussions of AI at the GSR-18 thematic event: *Global Dialogue on AI, IoT and Cybersecurity – Policy and regulatory challenges and opportunities*, acknowledged the potential cybersecurity threats of the technology as a leading reason for regulation.

“AI can be a real game changer, but it can generate very dramatic repercussions and potential problems,” said Kemal Huseinovic, Chief, ITU Department of Infrastructure, Enabling Environment and E-Applications. Given that the potential impact of AI in terms of global change is not entirely clear yet, Huseinovic advocated for caution and due diligence in regulation.

“AI is not capable of distinguishing which information is true and false,” said Aleksander Stojanovic, Executive Chairman & Co-Founder of [AVA](#). He described the case of hackers posting false information about traffic jams on a system that used crowdsourced information to manage city streets, resulting in delays.

Other participants suggested that the solution to mitigating AI risks may be embedded in the problem.

Neil Sahota, IBM Master Inventor and Worldwide business development leader for [IBM Watson Group](#), said that AI itself could serve as a defender against attacks. “AI technology, as it gets more robust, is increasingly able to anticipate attacks that we haven’t conceived yet.”



“We have to deliver services with embedded cybersecurity built in.”

Philip Reitinger,
CEO of Global Cyber Alliance

It is important to develop products and services that use AI to proactively defend against cyber-attacks, said Philip Reitinger, CEO of [Global Cyber Alliance](#). “We have to deliver services with embedded cybersecurity built in. The great potential for AI is the ability to deliver those underlying services in a much more secure way.”

Man vs. machine

Many of the participants also raised the question of whether advancements in AI would negatively affect people. The general consensus? As Luigi Rebuffi, Secretary General of European Cybersecurity Organization ([ECISO](#)), put it, “the human factor will always be more important than technology.”

“I’m not really worried about the machines taking over human beings,” said Serge Droz, Vice President of CERT (Computer Emergency Response Team), and Director of the Board, FIRST (Forum of Incident Response and Security Teams), Open Systems. “I’m worried about drowning in a swamp of imperfect machines.”

Engineers will continue to play a critical role in designing inclusive, secure, effective algorithms. “Some people think that by AI, you can eliminate people,” said Iliia Kolochenko, CEO of [High-Tech Bridge](#). “No, AI technology is only as good as the people who design it.”

This creates a need for skilled experts, said Miho Naganuma, Manager at the Regulatory Research Office and Cyber Security Strategy Division, [NEC Corporation](#). “The last decision needs to be made by the human being.”



“The last decision needs to be made by the human being.”

Miho Naganuma,
Manager, Regulatory
Research Office and Cyber
Security Strategy Division
NEC Corporation

How to make AI inclusive and ethical

Artificial intelligence (AI) regulation must not only consider safety and security but also inclusivity and ethics, according to the “Roundtable Discussion on AI for Development.”

“We must all go into these systems with our eyes wide open and with ethical concerns and issues raised from the beginning.”

Michael Best,
Director of the United Nations University Institute on Computing and Society (UNU-CS) and Associate Professor at the [Sam Nunn School of International Affairs](#) and the [School of Interactive Computing](#), Georgia Institute of Technology



Watch this [GSR-18 video](#) to learn more

See the full list of [GSR-18 video interviews](#).

Instead of replacing humans, AI allows us to “go beyond what humans can define” by doing heavy or mundane tasks and helping us see “beyond what we could imagine,” said Benedict Matthew, Account Executive, [Dark Trace](#).

Regulation must support “human-centered AI,” said Aaron Kleiner, Director of Industry Assurance & Policy Advocacy, [Microsoft](#).

“Not that AI replaces people but in fact, AI enables people to do more.”

Constrain vs. enable

Many of the AI-related discussions also addressed the need for regulatory balance between promoting innovation and ensuring security and trust.

“Ensuring the trustworthiness of information will become the main pillar of trustworthy artificial intelligence and services,” Droz said.

“Any AI that wants to compete will have to make sure it uses proper data and filters in a useful way,” Stojanovic added.

Giedre Balcyte, Director of Governance and International Development, Norway Registers Development (NRD) emphasized the importance of developing frameworks for ensuring safety.

“At the end of the day, technology can enable solving the issues, but it cannot solve by itself,” she said. “If we don’t have organizations in place, if we don’t have relevant capacities in place, we can hardly even talk about addressing new technological challenges.”



“At the end of the day, technology can enable solving the issues, but it cannot solve by itself.”

Giedre Balcytyte,
Director of Governance
and International
Development, Norway
Registers Development

AI developers and regulators must also consider ethics, including how inclusive the algorithms will be, Lauterbach said. “Goal alignment between machine-automated services and humans is a design question, a coding question, and a question of translating those principles into current and future business models.”

Moving forward with the most effective, secure AI regulation, Lauterbach continued, will require an increased awareness of the technology and a coordinated approach from policy-makers, the private sector and regulators – two focus areas of GSR-18.

Mohammad N. Azizi, Chairman of the Afghanistan Telecom Regulatory Authority (ATRA), also emphasized the importance of coordination. He said that in a world where AI and IoT cybersecurity is increasingly becoming critical in a number of areas, in particular digital health, digital infrastructure, and security and transport systems, “What is important is that the law enforcement agencies and regulators cannot operate in silos – they need to really work together.”



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Mohammad N. Azizi,
Chairman of the Afghanistan
Telecom Regulatory Authority

Setting the stage for AI governance

Dr Urs Gasser tells us about the AI for development discussion paper he co-authored based on a series of conversations with global policy-makers over the past year.

Gasser cites a number of benefits and positive uses of AI to attain the [United Nations Sustainable Development Goals](#), and some challenges which include concerns about the digital gender divide.

“How can we make sure that this next generation of technology is benefiting all people in the same way?”

Dr Urs Gasser,
Executive Director of the [Berkman Klein Center](#) for Internet & Society at Harvard University and a Professor of Practice at Harvard Law School



Watch this [GSR-18 video](#) to learn more

See the full list of [GSR-18 video interviews](#).

AI for development

A four-part series of discussion papers on AI for Development were presented during a high-level roundtable discussion at GSR-18. The papers cover a range of issues relevant to policy-makers and regulators as they seek to understand and address the challenges and opportunities of AI technologies. Read the four papers to learn more about key findings and recommendations on AI for development:

1. [Introduction](#) (by Malcom Webb, M Webb Ltd).
2. [Setting the stage for AI governance](#) (by Urs Gasser, Ryan Budish, Amar Ashar, members of the Ethics and Governance of AI Initiative by the [Berkman Klein Center](#) for Internet & Society at Harvard University and the [MIT Media Lab](#)).
3. [AI, ethics and society](#) (by Michael Best, Director of the United Nations University Institute on Computing and Society (UNU-CS) (see [video interview](#)), and Associate Professor at the [Sam Nunn School of International Affairs](#) and the [School of Interactive Computing](#), Georgia Institute of Technology).
4. [AI, IoT and security aspects](#) (by Gyu Myoung Lee, Adjunct Professor at [KAIST](#), Republic of Korea (see [video interview](#))).

Call for action: Facilitating access to sustainable connectivity for all

In accordance with the outcomes of Resolution 71 approved by the ITU World Telecommunication Development Conference 2017 (WTDC-17), the 1st meeting of the Industry Advisory Group for Development Issues (IAGDI) was held at GSR-18 along with the 9th Private Sector Chief Regulatory Officers' (CRO) meeting. The CRO/IAGDI meeting was moderated by Bocar Ba, Chief Executive Officer of the Samena Telecommunications Council and Chair of CRO.

Attended by over 100 high-level industry executives as well as members from the public sector and academia, the Group agreed that facilitating access to connectivity for everyone in a sustainable manner is key to advancing inclusiveness towards the achievement of sustainable development.



The CRO/IAGDI outcome document and call for action can be found [here](#), and ITU membership is invited to engage and contribute to the work of CRO/IAGDI.

Connecting the rest of the world

In a video interview Bocar Ba tells us more about the Private Sector Chief Regulatory Officers' (CRO) meeting and the Industry Advisory Group for Development Issues (IAGDI) meeting.

IAGDI, he said, will leverage the output of the CRO meeting, but at the same time will focus much more on the developmental aspect of information and communication technologies worldwide.

“In a nutshell ... we have to connect the entire population of the world.”

Bocar Ba,
Chief Executive Officer of the Samena
Telecommunications Council and Chair of CRO



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To achieve connectivity for everyone, the group proposed to adopt a multi-stakeholder engagement approach. An effective cross-sector collaboration and cooperation framework to enable new business models is fundamental to addressing the following areas:

- ubiquitous infrastructure deployment;
- broadband adoption; and
- the creation of an environment for innovation.

For each area, the group has further identified a number of calls for action that industry in collaboration with regulators and governments are encouraged to adopt and act upon to advance sustainable development. ITU members interested in championing relevant calls for action with other stakeholders are invited to contact: MembershipITUD@itu.int.

Going forward, IAGDI will seek synergies and leverage existing platforms including [ITU Telecom World](#), the ITU Telecommunication Development Sector (ITU-D) [Study Groups](#), and contribute to the Telecommunication Development Advisory Group ([TDAG](#)) and GSR-19, amongst others.

GSR-18 podcast interviews

Here are a few quotes from podcast interviews at GSR-18.



“This year’s GSR is more about 5G, Artificial Intelligence and a more futuristic type of services where people don’t necessarily understand the role of satellite. So for us this is a platform that allows us to inform regulators and other stakeholders about the developments in our sector.”

Aarti Holla-Maini, Secretary General, EMEA Satellite Operators Association ([ESOA](#)), Belgium ([full podcast interview](#))

“We really discussed what exactly the ecosystem – which is the regulators, the governments, the industry and the innovators – have to do together – so that we can unfold the new set of opportunities in the next 10 years.”

Manish Vyas, President, Communications, Media & Entertainment Business and CEO, Network Services, [Tech Mahindra](#) ([full podcast interview](#))



“I think there are a lot of questions going on around 5G – how to enable it and also what needs to be done – and what does that bring to us? And those are the conversations that I think need to happen so that regulators and industry can figure out a way forward.”

Jayne Stancavage, Global Executive Director, Communications Policy, [Intel](#) ([full podcast interview](#))

See the full list of [GSR-18 podcast interviews](#).

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