



## The African Internet Governance Forum - AfIGF 2018

04 - 06 November 2018

Corinthia Hotel, Khartoum, Sudan



وزارة الاتصالات  
وتكنولوجيا المعلومات  
MINISTRY OF COMMUNICATIONS  
AND INFORMATION TECHNOLOGY



جهاز تنظيم الاتصالات والبريد  
TELECOMMUNICATIONS AND  
POST REGULATORY AUTHORITY

## **Background of the African IGF**

The African Internet Governance Forum (AfIGF) is Africa's multi stakeholder forum of Internet actors. It carries the voices and efforts of the African continent to the global agenda, while ensuring that the benefits of a viable information society accrue to every African. It was formally launched in Nairobi in 2011, during the Sixth global Internet Governance Forum (IGF).

The African IGF Secretariat is hosted by the African Union Commission (AUC) in Addis Ababa, Ethiopia. The Forum's website is [www.afigf.africa](http://www.afigf.africa). It currently runs social media outlets on Twitter and Facebook and is linked to an online discussion platform: <https://knowledge.afigf.africa/>

## **Objectives of the African IGF**

The African IGF aims to be a platform for an inclusive multilateral, multistakeholder and multilingual discussion on issues pertinent to the Internet in Africa in general and Internet Governance issues in particular. Specific objectives include:

- To increase awareness and build capacity on IG for African users to ensure that all stakeholders are well prepared for contribution and interaction.
- To ensure that the concerns of Africa are taken into account in the IGF process.
- To put in place a coordinated African process for dealing with IG issues in the continent and to strengthen the multistakeholder model used for IG discourses taking place at regional and national forums.
- To ensure a multistakeholder representation by embracing all Internet actors in the continent.
- To ensure that all the countries are part of the regional processes and launch/strengthen their national processes.
- To facilitate national and regional exchanges and interactions between countries and regions in the continent.
- To facilitate the participation of African stakeholders in AfIGF and other appropriate regional and national IGFs.
- To promote the use of African languages in the cyberspace.

## **Participation**

Over 300 participants drawn from government, private sector, academia, research institutions, technical community, civil society organizations, media, and other stakeholders 26 countries attended physically the 7th African Internet Governance Forum (AfIGF2018) held from 4 to 6 November 2018 in Khartoum, Sudan, under the theme “Development of the Digital Economy and Emerging Technologies in Africa”

## **Remote Participation**

The Telecommunications and Post Regulatory Authority (TPRA) and the Internet Society Sudan Chapter provided remote participation facilities to enable different stakeholders around the world to participate in AfIGF 2018.

## **Partners**

The seventh African IGF was organized by the African Union Commission, in cooperation with the Sudanese Government.

AfIGF 2018 was also supported technically and financially by:

- African Union Commission
- TPRA, Sudan
- APC
- Facebook
- Internet Society
- ICANN
- IGfSA
- AFRINIC

## **Format:**

The AfIGF meeting was composed of rapporteurs consultation meeting, an induction session, parallel events and plenary sessions. The plenary sessions are the main part of the report. The agenda, the summary of the induction session and the narrative of the parallel events constitute the annexes of the report.

## **Opening Ceremony, 5th November 2018, 09H00 – 09H30**

**Moderated by:** Mr. Mohammed Yousif, Master of Ceremony, TPRA, Sudan

**Rapporteurs:** Sarah Kaddu – Makerere University, Uganda and Ines Hfaiedh – Tunisia

With a brief introduction of the speakers, Mr. Mohamed Yousif gave the floor to the General Director of the Telecommunications and Post Regulatory Authority (TPRA) of Sudan who welcomed everybody to his country, thanked the African Union (AU) for honoring Sudan with the precious opportunity of hosting such a remarkable event and wished the participants to enjoy the country, which is filled with a diverse mix of history and modernity, culture, traditions, mutual respect and the belief of unity of the African community.

**Mr. Stefan Schweinfest**, Officer-in-charge, United Nations Department of Economic and Social Affairs (UNDESA) remotely expressed gratitude to the Government of Sudan for hosting this meeting and the African Union for sponsoring the event. Mr. Schweinfest further asserted that, in today's world we are all dependent on ICTs and the Internet for communication, entertainment, learning and working. He reminded the meeting that Telecommunications have become crucial for attaining the Sustainable Development Goals and that ICT was a key driver and should support agriculture, health among others. He also stressed that youths are one of the strongest assets of Africa, however, the majority does not have access to the internet which shows the digital divide. Further, he informed the participants that access to the internet should be a tool accessed by everyone and not a privilege for the exclusive party. He concluded his statement with a takeaway question that those connected online should ponder with: how secure is information online, is it safe to move money on international platforms, but said the questions go beyond policy regulations and in answering these questions human right must be respected. Finally, he said we can identify issues and recommend the best solutions by talking to each other. He further stated that the African Union has been a role model and pioneer in the multi-stakeholder model and bottom up procedures and recognized how impressive the African IGF was organized by its people and for its people. And finally, he reminded that impressive topics are still cyber security and digital economy for achieving Sustainable Development goals within the United Nations 2030 development agenda.

**H.E. Dr. Amani Abou-Zeud**, Commissioner for Infrastructure and Energy of the AU through a statement read by Mr. Moctar Yedaly, thanked the people and authorities of Sudan for the wonderful organization

of the 7<sup>th</sup> AfIGF and warm welcome and hospitality. He informed that the Internet has changed business, education, government, healthcare and even the ways in which we interact with our loved ones - it has become one of the key drivers of social inclusion. And half of the world's population is now online, but Internet penetration in Africa currently stands at 35 % according to Internet World Statistics. He was delighted that the theme of the 7<sup>th</sup> African IGF is Development of the Digital Economy and Emerging Technologies in Africa. He noted that it was refreshing that the African Internet Community was embracing new technologies to enable growth and development. He reminded the meeting of the adopted decision to increase Africa's participation in the debates of the Internet at the 4<sup>th</sup> African Union Conference of the Ministers in charge of ICT. He recalled the notable achievements which include the African Internet Exchange Point System (AXIS) and that some of these IXPs have been supported technically and financially to grow as regional IXPs, and the African Leadership in ICT programs (ALICT) through which more than 600 Managers in the ministries in charge of ICT, ST&T and Ministries of Education have benefited. This has continued with the School of Internet Governance (AfriSIG) that is organized every year with APC and the adoption of the AU Convention on Cybersecurity, e-Transaction and personal data protection – the Malabo Convention, from which several guidelines prepared by ISOC were drawn.

**Mr. Yedaly** further announced the adoption of the African Union Declaration on Internet Governance and Development of the Digital Economy by the Head of States and that AUC started a project -Policy and Regulation Initiative for Digital Africa (PRIDA) whose objective is to build capacity of Africans on Internet Governance and provide a harmonization tool for ICT Policy and Regulation as well as spectrum on the continent. He also announced, it is high time Africa put in place the structures and processes required to address the challenges and protect her culture, tradition, heritage and economic interests on the Internet and hoped that with this unique project in the IG space, Africa would then substantially contribute the Global Debate on the Internet and the benefits from the Digital Economy. He stressed that Africa must make sure that she has the human capacity and resources to deal with the above challenges- for instance at the National Level, IGF processes should be established and enable the policy makers to review approaches and adapt to the new world of digitization whereby breaking policy silos and achieving policy coherence at all stages of domestic and continental policy making.

He further called upon all stakeholders to join the AU and develop ICTs for the benefit of African economies for its people because this is what would drive our continent and build an African society for

future generations. For digitization to thrive in Africa, there was a need for AUC to take steps to improve access, promote electronic transactions, combat cybercrime, enhance Africa's participation in Internet Governance at the International level and sustain the Africa top level domain (Africa TLD). He concluded by expressing gratitude to the Forum Sponsors for their contributions and support.

**H.E. Bushara Gumaa Arror**, Minister of Information, Communications and Information Technology welcomed all participants to the 7<sup>th</sup> IGF in Khartoum. He further noted that such meetings allow us to achieve important objectives that will help achieve common goals. While speaking, he emphasized the value of deliberating around Internet Governance which was very vital because Africa was no longer a consumer of digital technologies. He further said that it was high time that we work on having a role to play in the many discussions on the subject while ensuring that technologies benefit the African people. H.E. Bushara concluded by further thanking the participants for the efforts and that he was convinced that the conference would draw meaningful conclusions and recommendations that will foster partnerships and collaborations towards a positive impact on the IG sphere.

At the conclusion of the opening ceremony, the following key issues and recommendation were clearly spelt out that

### **Key Issues:**

- We are all dependent on ICTs and the Internet for communication, learning and working
- Telecommunications have become crucial for the attainable Sustainable Development Goals
- ICTs should be a key support to all sectors e.g. health, agriculture
- Access to the Internet should be a tool accessed by everyone
- Cyber security and Human rights must be respected
- The Internet has changed business, education, government, healthcare and the ways in which we interact - it has become one of the key drivers of social inclusion
- Africa must make sure that she has the human capacity and resources to deal with the above challenges - for instance at the National Level, IGF processes should be established and enabled

### **Recommended Actions**

- Africa to have human capacity and resources to deal with the above challenges- for instance at the National Level, IGF processes should be established and enabled
- Telecommunications should be used in the attainment of the Sustainable Development Goals

- ICTs should support all sectors i.e health, agriculture
- Access to the Internet should be for everyone
- Cyber security and Humana rights must be respected

**Keynote Address:** Dr. Alexander Sceberras Trigona, Former Minister of Foreign Affairs, Malta

**Rapporteur:** Sandra Chimpala, Techtrends Zambia

**Dr. Alexander Sceberras Trigona**, Former Minister of Foreign Affairs, Malta, introduced Digital Diplomacy, a diplomatic angle to internet governance. He said that digital issues are not only being discussed by more developed states, but even less developed ones. There was a multiplicity of digital ecosystem actors like in any sphere, which is not uncommon; it no longer has only government to government interactions, but also includes other stakeholders, from civil society to technical community. If we see organizations like the African Union (AU) pushing one agenda, all the member countries need to be behind it, not have several states going their own way. Dr. Trigona reminded that AU must harness its member states on efficient and effective digital policies, to avoid becoming an empty husk. There must be unification of policies that represent the states with a nice, solid backing. And further, he stated that the challenge lies in the choice of partners these countries choose to work with in digital policy and at what level of engagement. Is it between or among ministries only or is it from government to government? The lower the partnership, such as ministry to ministry or government to government, the easier any change in structure could throw off any previous policies, but when partnered with a larger group like the AU, it could be harder to throw a wrench in the system. However, there is a need to make the partners in continents beyond just local African diplomatic actors. Why not consider an appeal to the diaspora to start support for digital policy on the continent? Digital training in these partnerships is beneficial. An AU-ET partnership project can be useful for this. He then provided the meetings with the following takeaways.

- By 2019 there should be an African geopolitical map on IGF impact.
- To see what is in for Africa in the UN High Level Digital Cooperation report.
- Roadmap to be created for training in the next 5 years of digital champions through AU-EU support.
- Support from organizations to send digital champions to places like Silicon Valley, not to live in hotels and wear suits, but to live among locals like one of them and experience digital innovation at another level.

## **Plenary Session 2: National and Regional Initiatives (NRIs)**

**Moderated by:** Mr. Makane Faye, African IGF secretariat

**Rapporteurs:** Avis Momeni, Cameroon, Patrick Byamungu, DRC

The objective of the session was to provide information on the processes and activities of the National, Regional and Youth IGFs, to share experiences on difficulties, successes, best practices and failures, and make recommendations on the way forward. In this context, the following countries/regions representatives made a brief presentation: Sudan, Cameroon, Sudan, Zimbabwe, Kenya, Nigeria, Uganda, Tanzania, Senegal, Benin, South Africa and West Africa.

**Mr. Tarik Merghani**, Sudan, a member of the Sudanese internet society chapter reported that the Sudan national internet governance forum was held early November 2018, prior to the African IGF. The event gathered around 226 participants, 30% of whom were women. He noted that different structures of stakeholders such as telecommunication agencies, the private sector, the civil society, the technical community and the government were part of the National IGF discussions. The sessions addressed questions about the role of stakeholders, the critical internet resources, net neutrality and cyber security. Part of the exchanges dealt also with the challenges that face the national ISOC chapter and the support needed for the operations of the university network.

**Ms. Pascaline M Maimo**, Cameroon, briefed the participants on the outcome of Cameroon National IGF that was held from 14<sup>th</sup> to 16<sup>th</sup> of May, 2018 under the theme "Protection of sensitive data, and fight against false information on the Internet". She indicated that the national IGF deliberated, among other issues, on privacy, security and data protection. And practical example was that smartphones regularly monitor and send someone's personal information to Google and other manufacturers. This raised the awareness of participants on privacy versus the benefits that the internet offers and the use of information and communication technologies in all sectors of activity.

**Mr. Makane Faye**, Chairperson of the Planning Committee of the West African Internet Governance Forum (WAIGF) provided a short report on WAIGF 2019 which was under the theme "Development of digital economy and emerging technology in West Africa". The points discussed during the WAIGF 2019 were, among other issues, the achievement of the sustainable development goals (SDGs) in relation to the

Information Society, the issues of access and infrastructure, security in the digital economy, the Internet of Things and the block chain technology.

**Mr. Cade Zvavanjanja**, from Zimbabwe briefed the participant that their National IGF was organized from 8<sup>th</sup> to 9<sup>th</sup> October 2018 with the theme, internet that we want. The discussion addressed the issues of cyber security, data protection and the internet that improves the quality of life of the community.

**A participant** from Kenya informed the participants that Kenya NIGF was organized on 19<sup>th</sup> of July, 2018 under the theme: ICT for the development of Kenya. Kenyan National IGF was able to bring together the parliamentarians to discuss issues around data protection, security enhancement, regulations of content, emerging technology and artificial technology. 200 participants were recorded and also a number of remote participants.

**Mr. Segun Olugbile** from Nigeria gave a brief outcome of the Nigeria Internet Governance Forum that was held at Shehu Musa Yar'Adua Conference Center in Abuja and ran from 2<sup>nd</sup> to 3<sup>rd</sup> of July, 2018. He informed the audience of the overarching theme which was the Internet as enabler for good governance. He further elaborated on the topics covered under the main theme such as the achievement of the SDGs, critical resources and the economic aspects of the internet. He underlined the contribution of who discussed the future of the internet, the revolution of productive attitude and passive consumerism.

**Mr. Moses Hoboyi**, from South Africa informed that South Africa national IGF was held on 16<sup>th</sup> October in Soweto and covered digital inclusion and accessibility. He further stated that empowering the Zenzeleni local organization in the management of community networks has enhanced the visibility of the event by providing training to local communities on the economy and digital rights.

**Mr. Daniel Mosego** from Uganda informed the meeting that a reliable internet in Uganda was the theme of the National IGF and it featured several topics such as content regulation, imposition of taxes on users, credibility and inclusion of minorities, cyber security and block chain.

**Ms. Rebeca Ryakitimbo** from Tanzania, informed the meeting that the NIGF took place in July 2018 addressing access and infrastructure, alternative solutions to communities, accessibility to the Universal Service fund.

**Dr. Kossi Amessinou** from Benin informed the meeting that the IGF in Benin was held on June 14, 2018 on the theme of Beninese digital sovereignty

**Dr. Alex Corentin** from Senegal reported that Senegal IGF was held on 11<sup>th</sup> October 2018 on the theme of Personal Data Protection.

**Key Issues that were raised:**

- Challenges to adopt standards for environmental protection while deploying and using ICTs.
- Availability and accessibility of broadband Internet to users, especially in rural communities and at the same time availing knowledge with good information and quality internet.
- Accountability and responsible use of the internet.
- Benefits of ownership of domain names, emerging technologies and the cloud computing

**Recommended Actions:**

- Need to establish the first African MAG and to link the topics discussed at the national level with those discussed at the African level and at global IGF
- Urge all the countries that organize their national IGF to be inclusive in making sure that all stakeholders are fully involved in the entire process
- Kindly urge the National Agency of Information and Communication Technologies (ANTIC) of Cameroon, to put in place a full multistakeholder process in organizing its national IGF as per the principles of the IGF
- Building capacity on Internet of Things for all stakeholders; adaptation of computer programs in technology learning institutions; and promotion of research on system vulnerability, security and database development.

**Plenary Session 3 (Roundtable): Unlocking the development of the Digital Economy and Emerging Technologies in Africa, 5 November 2018, 10H20 – 12H00**

**Moderated by:** Mr. Moctar Yeldaly, Head of Information Society Division, Africa Union

**Rapporteurs:** Gorfu Asefa, Ethiopia, Janet Kadu, Uganda

**Panelists:**

- Dr. Ezzldine Kamal, Sudan
- Ms. Anriette Esterhuysen, APC
- Prof. Clement Dzidonu, AIT
- Mr. Hossam Elgamal, AFICTA
- Dr. Alexander Sceberra Trigona, Malta

**Mr. Moctar Yedaly** of the AU started by asking a question on *how the panelists intend to advise African Presidents on developing Digital Economy*.

**Dr. Ezzeldine Kamal** from the Sudan responded that it was essential to prepare a conducive environment, i.e., enabling policy and regulatory regimes so as to attract investment and encourage the use of digital economy products and services for people's day-to-day life and government functions.

**Ms. Anriette Esterhuysen** from APC stated that policy and regulatory instruments must not be considered as a controlling mechanism but as an enabler of digital economy development. The need to promote inclusion and cooperation of local entrepreneurs, investors, etc., was also underlined. Also unlocking people's potential, education and training, developing free and independent media, vibrant civil society were emphasized. She noted that the government must be ready to embrace the challenges and adverse effects of the digital economy.

**Professor Clement Dzidonu** from AIT, Ghana, said that he would tell the presidents that the digital economy is about moving the African economy to the future. He also indicated that the demand side includes business community (e-commerce) and the government (e-government). He emphasized that the presidents must be told that if they don't embrace digital economy, it will happen by itself and they will be shocked by it. Putting the required infrastructure and regulatory regimes, minimizing mistrust, managing the push and pull enablers and overcoming the widening of the gap between Africa and the developed world have been highlighted as the major challenges.

**Dr. Alexander Sceberras Trigona** from Malta said that he would follow the technocratic approach to the issue. He advised AU to ensure that member states must develop and include a minimum standard on e-commerce, e-signature, e-payment, e-guarantee, taxation, data privacy and protection in their legislations. He offered to link up AU with EU for experience sharing.

**Mr. Hossam Elgamal** from AFICTA emphasized that in order to go into digital society, it is important to achieve better indicators on e-government, transparency (fighting corruption) because they are enablers of digital economy. He also stated that the pull factor comes from such sectors as health, commerce, education (universities), agriculture, etc., whereas the push factors include, but not limited to developing and putting in place a proper legislative, ensuring digital privacy, developing users' skills, linking ICT with industry and developing sufficient private equity.

In order to further engage the panelists, Moctar Yelaly, AUC put forward another question related to prerequisites to develop a Digital Economy in Africa..

**Dr. Ezzeldine Kamal** from Sudan stressed the availability and reliability of technical infrastructure along with relevant supportive laws and human resources. The youth who is regarded as digital natives must be prepared for the future and be transferred to the new era. The private sector must be at the driving seat, as it has the capacity to invest. The education, health and agriculture sectors must be accorded top priority. He warned that scarcity of research on all aspects, may hinder the growth and development of the digital economy and advised all concerned to do more research.

**Ms. Anriette Esterhuysen**, APC, emphasized that it is important to develop evidence-based policies and stated that the digital economy is not different from the offline one but they are intertwined. On the front of infrastructure development, she highlighted that that the growth of the mobile telecom has been slowed down because it is left to the private sector. She added access to libraries must be done by the government, broadband infrastructure must be expanded and landlocked countries must have access to the sea cable. She encouraged creativity on content, social and economic growth not only with the digital economy.

**Professor Clement Dzidonu**, AIT mentioned that trust and mistrust equally affect the development of the digital economy. People say they don't want to be part of the digital economy because they don't have trust in it. Trust is on the demand side not on the supply side. Availability of infrastructure, data protection, cybersecurity are some of the critical factors to trust building. He emphasized the need to do more research to identify and address other factors having an adverse effect on trust.

**Dr. Alexander Sceberra Trigona**, Malta stressed the need to develop trust towards e-education, e-health, e-government and e-commerce. He underscored that all e-applications must be considered as a common global good so that nobody claims ownership. E-commerce experts must do first some experimental projects at local level to develop the trust and confidence of users and later see how it works out at the global level. The AU could come to the EU to assess and learn how they tackle problems related to trust.

**Mr. Hossam Elgamal**, AFICTA informed on what the private sector should do, he pointed out two categories: (1) a private sector as the ICT enablers and (2) private sector benefiting from the enablers. He said that Africa is not benefiting from its achievements in ICTs. So he proposed that the AU organize and convene a private sector meeting to discuss and identify the areas where the enablers are needed to boost business.

The moderator, Moctar Yeldaly, Head of Information Society Division, Africa Union concluded the session by stressing that unlocking the minds of African government is important in order to debate and reach consensus on why the continent could not progress in developing a digital economy including unleashing the potentials of citizens on conducting relevant researches. The need to coordinate efforts with African Diaspora has become imperative.

### **Key Issues Raised:**

- The need to prepare a conducive policy and regulatory framework for the development of the digital economy;
- The policy and regulatory system must not be for controlling but for enabling;
- Inclusion of all stakeholders and enhance cooperation among them;
- Consideration of the demand and supply sides of the digital economy;
- Minimizing mistrust of users by improving the availability of infrastructure, data protection and cybersecurity; and
- Promotion of research for the development of the digital economy

### **Recommended Actions:**

- Government and other stakeholders need to educate and train people to help them unlock their potentials

- Government must encourage the development of free and independent media and vibrant civil society
- Government must be ready to embrace adverse effects of digital economy (e.g., child abuse, identity theft, etc.) and put in place the accompanying measures and remedies
- AU and member states should put in place the necessary mechanisms and tools to overcome the widening digital gap between African countries and the developed world
- The necessary standards, tools and mechanisms on e-transactions should be incorporated in the legislations of member States
- Member states must put in place enablers of the digital economy by achieving better indicators on e-government, transparency and fight against corruption
- Member states must prepare the youth for the future and new digital era
- Conditions of access to library and archives infrastructure and its optimum use must be enabled by the government
- Landlocked countries must have access to submarine communication cable surrounding Africa
- Governments must foster creativity in enhancing social and economic development and digital economy
- All e-applications must be considered as a common global good so that no one claims ownership
- Need to build trust and confidence on e-commerce and ensure all stakeholders benefit from digital products and services of all sectors
- A continental private sector meeting must be convened so that the actors discuss and identify areas where ICT can be used to boost business

## **Plenary Session 4: Promoting Digital Africa: Digital Entrepreneurship and Innovation for a Digital Africa, 5 November 2018, 14H00 – 15H30**

**Moderated by:** Prof. Clement Dzidonu, AIT, Ghana

**Rapporteurs:** Prudence Nyamishana, Uganda and Jean Paul PaulNkurunziza, Burundi

### **Panelists:**

- Ms. Lydienne Natalie Ntogue Cameroon
- Ms. Martha Chilongoshi, Zambia
- Ms. Josephine Miliza, Kenya

**Ms. Josephine Miliza**, Kenya mentioned that internet is an enabler in the digital economy, which was becoming a reality. She gave the example of M-Pesa, which is a very popular mobile phone e-commerce application in Kenya. The question is whether Africa is ready for this economy, where 63% of the population lives in rural areas and 60% of this population is under 30 years of age. The digital economy requires a good infrastructure and a good level of education in particular. She said one of the aspects of community networks is to follow the bottom top approach. She further highlighted 5 key community networks in Africa: Zenzeleni in South Africa, Tunapanda in Kenya, Pamoja in DRC, BOSCO in Uganda and Machaworks in Zambia.

**Ms. Martha Chilongoshi**, Zambia spoke about organizing digital networking platforms for entrepreneurs, stronger ecosystems and shaping conversations around entrepreneurship online with emphasis on gender inclusion. She defined the digital economy as that based on the use of computer tools. The field of these digital technologies is unfortunately very masculine and excludes women. To succeed in building a sustainable digital economy, this area needs to be inclusive, facilitating gender equality by promoting women's participation in this area and avoiding discrimination. Also, we must promote innovation and competitiveness.

**Ms. Lydienne Natalie Ntogue**, Cameroon put emphasis on the digital revolution as it strongly impacted Africa in six major sectors that are evolving very fast every day. For instance, Africa is leading in the area of digital payment services and has ultimately improved in the areas of education, health, agriculture and administration with the development of digital economy. She gave the experience of Cameroon in terms of strategies that are being put in place in favor of digital entrepreneurship and innovation. She pointed out that 50% of Africans in cities are connected to the Internet. McKinsey in a 2013 study estimates that the contribution of the Internet to GDP in Africa will be \$ 300 billion in 2025. She then highlighted the importance of incubators to spur innovation and the digital economy by facilitating the development of innovative projects. She called for all governments in Africa to develop these incubators. She also encourages the exchange of experience in the field of incubators for the development of the digital economy based on appropriate regulation. She also encouraged the promotion activities of innovative initiatives, as well as actions of detections of projects not yet known. In this connection, she presented the case of Cameroon, where globe-trotters, competitions to give prizes to the best projects are held. She also pointed out the existence of Silicon Mountain in Cameroon. She concluded by putting emphasis on the need for governments to play a central role through the establishment of regulatory frameworks, flexible

enough to adapt to rapidly changing technologies, coordination between different ministries concerned, ensuring access to local content, promoting new sources of energy, as well as research and development, and providing funding and fostering partnerships.

### **Key Issues Raised:**

- Creation of incubators for start-up to develop their ideas, projects and transform them into viable business models, encouragement of research and development, investment in infrastructure to facilitate connectivity, elaboration of digital economy policies by government and development of new models of financing businesses.
- Putting in place appropriate innovations that focus on solving social problems including for women and girls to empower them in participating in the development of a sustainable digital economy

### **Recommended Actions:**

- Women need to be empowered to leverage technology, bridge the gender gap and develop social entrepreneurship
- The Internet should be leveraged to provide basic services such as combating violence against women, creating employment, participation and decision making
- There is need to:
  - focus on infrastructure development, financing and capacity building for innovation
  - accelerate procedures to coordinate actions of entrepreneurs across the continent and at the level of government
  - ensure free access of internet and national content in public places and schools
  - develop strong financing partnerships between public sector and private
  - professionalize incubators by giving them licenses
  - invite the best incubators to various forums to share experiences

## **Plenary Session 5: Africa's Digital Economy: Access and Infrastructure as a fundamentals for Digital economic growth, 5 November, 2018, 15:30hr – 17:00hr**

**Moderated by:** Dr. Dawit Bekele, ISOC

**Rapportuers:** Barrack Otieno, Kenya, Zina Brahim, Chad

**Panelists:**

- Ms. Caroline Owashabe, Uganda
- Dr. Yahya Abdallah, Sudan
- Mr. Alan Barret, AFRINIC
- Mr. Tijani Ben Jemaa, Tunisia

**Dr. Dawit Bekele** of ISOC reminded the audience that only one third of Africans have access to the Internet. He noted that the contribution of the Internet to the gross domestic product in most African countries is still at 1.1 %. Bekele observed that the Internet has greater impact on economic growth in developing countries. Close to 80% of mobile money users are in Africa. However Internet businesses are not growing as fast and as big as in the developed world. He noted that few businesses in Africa use the Internet, and only 1 in 5 businesses has a website. Various roadblocks have resulted in the present status quo. However this is not surprising because research has demonstrated the fact that if the offline business environment is not conducive, online businesses cannot thrive. He concluded by indicating that challenges existed in doing business online such as high costs of accessing the Internet, Internet shutdowns, security and privacy issues, lack of payment gateways and taxes on the internet . Most e-commerce businesses are also startups that encounter a myriad of challenges.

**Dr. Yahya Abdalla** from the Telecommunications and Post Regulatory Authority of Sudan shared local challenges faced by regulators and network operators in providing citizens with reliable and affordable Internet connectivity. He noted that network operators preferred to focus on areas that guarantee a fast return on their investment. As such there were many areas in the country that lacked network coverage. He also observed that there were various quality of service challenges that needed to be addressed. Dr. Abdalla said that rapid change in technology is also a major challenge to operators since most operators can only make a return on their investment after a long period of time yet technology keeps changing. He also noted that competition had come with its fair share of challenges which require regulation of tariffs. He informed the audience that the Government is also keen to tax over the top services since they were benefitting greatly from Infrastructure service providers. A major challenge that exists is the lack of clear frameworks on how to charge over the top products and services. He noted that the cost of bandwidth is still high in most African countries and that there is a need to find ways of lowering costs of accessing the Internet. He nonetheless saw various opportunities that existed on the African continent which presented a unique opportunity to Investors such as:

- Penetration of the Internet is still very low in Africa hence there is a need for more operators.
- Demand for mobile money has created new markets for the Internet Community that needed to be exploited.
- Operators have access to local data center which have created opportunities for more local content.
- Internet of things presents a great opportunity for businesses.
- Cloud services are changing the way businesses operate.
- There is a need to look at better ways of investing the Universal Service Funds (USF)

He then informed the participants that Sudan will finalize 120 communication sites using the Universal Access Fund. He also indicated that there was a need to support uptake of local content as well as promote collaboration with International players in the Internet space. Operators need to change their business models to survive in the current dispensation. Stakeholders on the other hand need to study how they can take advantage of big data. There is a need to build capacity for the Youth to enable them participate in the digital economy.

**Mr. Alan Barret**, of AFRINIC, indicated that the Regional Internet Registry for Africa, distributes Internet Protocol addresses and Autonomous System Numbers. He noted the fact that Africa has the lowest internet penetration in the world.

Less than 36 percent of its citizens are connected to the internet against a world average of 55.1 %. This is a great opportunity for the business community on the African continent. The number of Internet users has grown steadily in the last 10 years. More than 100 million Internet Protocol addresses have been allocated to operators in the Africa region since 2005. With a population of 1.2 billion people Internet Protocol version 4 address allocation per capita in Africa is 0.08. One Internet Protocol address is shared by 10 people. He observed that Africa no longer has an adequate number of Internet protocol version 4 addresses to meet the demand of the growing population. AFRINIC is currently working with Internet stakeholders in Africa to increase uptake of Internet Protocol version 6 across the African Continent and that AFRINIC was in exhaustion phase 1 of Internet protocol version 4 addresses. He noted that Africa was behind the rest of the world in Internet Protocol version 6 deployment and that capacity building was key in IPV6 deployment. AFRINIC is working on a certification and e-learning platform to boost its capacity building initiatives and is willing to assist African governments to develop their IP version 6 strategies. Alan noted that Internet Exchange Points are key in keeping local traffic local and lowering the cost of accessing the Internet. In this context he underlined that there were 44 active Internet Exchange

points located in 40 cities within 32 countries in Africa ([www.af-ix.net](http://www.af-ix.net)). Another important issue is the need for cross border links to be addressed. African countries can improve performance and reduce connectivity costs by creating a regulatory environment that encourages Internet Service providers to build cross-border links. African countries also need to invest in data centers. It is important to ensure that the content is hosted locally. Attracting large global content providers to data centers improves the performance of local networks.

**Mr. Tijani Ben Jamaa** from Tunisia noted that Local content is a tool that can promote Africa's Digital Economy. He emphasized that the Internet has become an enabler for social and economic change. Unfortunately, citizens in developing countries are not taking advantage of the benefits of local content. Tijani noted that there is a need for more to be done to improve local content production and distribution in Africa. Tijani introduced participants to domain names and clarified the difference between country code top level domains and generic top level domains. He encouraged participants to buy their country code Top Level domains since it would enable them to invest in the local communities.

**Ms. Caroline Owashaba** from Uganda, emphasized on the need to create safe spaces for the youth to enable them use the Internet. She noted the fact that the Internet had created new opportunities for the Youth in Africa. The digital economy provides access to information on economic activities. Financial technology on the other hand has expanded access to financial services and resulted in economic inclusion. Many young people are currently engaged in digital marketing, application development and web design businesses. Caroline highlighted various challenges that prevent the youth from actively engaging in the digital economy, such as lack of access to the Internet, high costs of Internet connectivity, low digital skills and low financial literacy. Caroline noted that we need to work towards ensuring that the Internet is a right for everyone and that all cities have coverage and are able to use it.

**Dr. Bekele** opened up the floor for a question and answer session. Participants inquired about the role of Governments in managing Critical Internet Infrastructure such as Internet Exchange points and Country Code Top Level Domain Registries. Panelists observed that governments should allow the private sector to operate Internet exchange points. With regard to Country code Top Level domain registries, governments should work with other stakeholders in finding a sustainable model of operating the registries. Panelists also encouraged participants to promote and use their country code top level domain

registries since it would ensure the money spent buying the domain names remained in local Internet Communities.

### **Key issues raised:**

- Challenges faced by regulators as they strive to ensure that customers get good connectivity.
- The need for the African continent to embrace and deploy Internet Protocol version 6.
- The importance of local content in developing Africa's digital economy.
- The importance of internationalized domain names in ensuring that African content can be uploaded onto the Internet.
- The importance of creating safe spaces for the Youth on the Internet to ensure that they participate actively in the digital economy on the African continent.

### **Recommended Actions:**

- There is need for:
  - cross-border collaboration between African countries to facilitate Interconnection of Networks which would lower the cost of connectivity
  - the deployment of Internet Protocol version 6 addresses. In this context, AFRINIC offered to help African Governments deploy Internet Protocol version 6 strategies
  - African citizens to upload local content online for consumption by local communities
  - African citizens to buy their country code Top Level Domain Registries to enable them have funds for developing local Internet Communities
  - African countries to embrace Internationalized Domain Names
  - the creation of safe spaces for young people on the Internet to encourage them to be part of the Digital economy

## **Plenary Session 6: Empowering Digital Cooperation towards building trust, 05, November, 2018, 17H20 – 18H50**

**Moderated by:** Ms. Anriette Esterhuysen, APC

**Rapporteurs:** Evalyne Wanjiku, Kenya, Rabie Bouyahiaou, Algeria

**Panelists:**

- Dr. Jovan Kurbalija, HLPDC
- Mr. Olusegun H. Olugbile, Nigeria
- Mr. Markus Kummer, IGFS
- Mr. Ridha Guellous, Tunisia.

**Dr. Jovan Kurbalija**, HLPDC remotely gave a brief overview of the high level panel constituted in July by the U.N Secretary General. He indicated that the panel has 22 members drawn from various multistakeholder groups. The panel is now in the consultation stage where they are calling for contributions and collecting views on how digital cooperation can be enhanced. The areas to be addressed by the panel include establishing what digital cooperation entails, the principles of digital cooperation and mechanism of establishing digital cooperation. The areas of focus of the panel will be of diverse nature with emphasis on capacity building.

**Ms. Anriette Esterhuysen**, APC engaged the participants, which lead to question on abuse, imbalance in representation, timeline issues and barrier to digital cooperation.

On the first question it was noted that the panel was imbalanced with only 2 people in the panel represent Africa. It was also noted that Africa has had previous initiatives and a concern was raised as to what came of this initiative and whether the ideas in the initiatives would be considered by the high level panel. This included the initiative on enhanced cooperation and to this, Anriette pointed out that it was derailed by lack of mechanism of cooperation. An audience also questioned whether the given timeline was enough for Africa to come up with a joint position to present to the panel for consideration. It was suggested that Africa could only manage to make a substantial contribution if a common place for coordinating suggestions and contributions was established. This was seen as something the AUC should coordinate.

On the second question regarding the necessity of courts to deal with abuses, the panelists opined that this was not necessary as this would be a duplication of the existing judiciary mechanism and call for more resources which may not be readily available. Instead, Markus recommended that the existing judicial officers should be trained to deal with the special issues emerging from the internet. The judiciary would thus have officers specially trained to handle matters arising from digital spaces.

**Mr. Olusegun Olugbile**, Nigeria addressed the issue of the slow uptake of digital cooperation among governments. He raised the issue of governments not prioritizing cyber security, and the disconnect between political leaders in terms of understanding what digital cooperation is. To this, there was a disagreement as to whether indeed governments had given more weight to establishing cyber-security than to ensuring that the internet remained an open space for cooperation and production. A need to safeguard the gains and benefits of the internet was however agreed upon, and it was said that this could only be maintained and enhanced by prioritizing cyber-security at the national level. In terms of encouraging African governments to take up digital cooperation, Segun observed that governments seemed to respond better to the external influence/stakeholder than they do with internal stakeholders. With this in mind, it was therefore suggested that an intergovernmental intervention might be more effective in getting governments to respond to initiatives. He gave an example of the ECOWAS region that had used the regional body to influence member governments to take up data protection. It was thus suggested that the AU spearhead cooperation for intergovernmental interventions.

**Mr. Markus Kummer**, IGFSAs observed that governments may not have expertise which is usually found outside government and pointed to a lack of policy coherence within government. He suggested that the IGF model could help build a bottom up policy coherence in government. Responding to the issue of a citizen driven approach, it was noted that in order to get the governments to engage, it is imperative to note that governments find it hard to separate cyber security from national security. Therefore, approaching it from an angle of building trust such as may have a better role in getting the governments interested. The question about content and sensitivity to the region's many languages was also raised. It was noted the various languages spoken in the region raise political and ethnic based tension surrounding them and therefore a need is seen to overcome this in order to enhance cooperation in digital spaces.

### **Key Issues Raised:**

- The regional imbalance of the UN high level panel was raised as an issue of concern. It was observed that an African position may not be well presented as only 2 Africans were on the panel and there was a lack of mechanism for Africans to put a common consolidated input to the high level panel
- On themes to be addressed, there was need to lay out specific issues to be addressed by the high level panel and that cyber security should be highlighted

## **Recommended Actions:**

- There is need for HLDPC to take history into context and benefit from best practices given that there have been several initiatives on digital cooperation at the global and African levels in the past
- HLDPC should hold proper consultations with Africa while the African Union would put in place and coordinate a mechanism where African countries would prepare their agreed positions for submission to the HLDPC. This will strengthen the efforts of the two African members of the panel to make a strong African contribution taking into account diversity
- Call for active participation of Africa in the UN- High level Panel on Digital Cooperation.
- Call for AUC to closely work with the Panel to organize a multi-sectoral and multistakeholder conference on digital cooperation
- Use should be made of the available forums such as the African Internet Governance
- Forum to create trust among all stakeholders and thus enhance cooperation and interactions. In this context, a model based on the IGF concept should be adopted in order to enhance policy cohesion within government
- Need for training of judicial officers and law makers on the emerging issues that digital technologies bring about

## **Plenary Session 7: Emerging Technologies Part I (Iot & Big Data), 06 November, 2018, 09H00 – 10H30**

**Moderated by:** Mr. Michael Ilishebo, Zambia

**Rapporteurs:** James Kaliisa, Uganda, Ade Agnide Bada, Benin

### **Panelists:**

- Mr. Cade Zvavanjanja, Zimbabwe
- Mr. Hafedh Gharbi Yahmadi, Tunisia
- Dr. Kossi Amessinou, Benin

**Mr. Michael Ilishebo**, Zambia moderated the first session on the emerging technologies with specific on Internet of Things (IoT) and Big Data. The session looked at the IoT in the internet Governance with focus

on that and figures, legal and policy, challenges, big data and its usage and readiness of Africa for harness the benefits.

**Mr. Hafedh Gharbi, Tunisia** covered IoT and its definition. He further looked at IoT in the internet governance and its challenges such as lack of standardization for most protocols and the threat that IoT presents.

**Dr. Kossi Amessinou, Benin**, presented a definition of big data and its usage. He highlighted that we are contributing to the big tech companies by providing them with the data to structure and grow their businesses.

**Mr. Cade Zvavanjanja, Zimbabwe** looked at the internet of things (IoT) in the readiness of Africa to harness the benefits. He emphasized that cyberspace was about the people and not the devices as it is often put.

### **Recommended Actions:**

- Africa to become actors/ innovators and not just users.
- Strengthen the relationship between the researchers, vendors and the procurement personnel.
- Capacity Building at all levels to ensure that Africa is ready for the IoT and Big Data usage for policy makers, users and innovators.
- Africa should improve on connectivity and device integration.
- Creation of more manufacturing hubs and collaboration with multinationals, but after fighting corruption and security issues in the region.

### **Plenary Session 8: Emerging Technologies Part II (AI and Blockchain), 06 November 2018, 11H00 – 12H30**

**Moderated by:** Mr. Abdalmonem Tharwat Galila, Egypt

**Rapporteurs:** Edwin Chrissantus Soko, Tanzania, Karabo Rajuili, South Africa

#### **Panelists:**

- Mr. Hossam Al Gamal, AFICTA
- Mr. Walid Hassan, Sudan
- Mr. Bob Ochieng, ICANN

**Mr. Abdalmeno Tharwat**, the moderator from Egypt informed the meeting that in Africa this topic is very important because it helps to determine where Africa wants to go.

**Mr. Walid Hassan** made a presentation on smart contracts which had four sections: What is a smart contract and why we need it; facts about the technology; challenges for adopting in today's business; and opportunities for how it can be used. Hassan explained that a smart contract was a computer code stored inside a blockchain, which encodes contractual agreements. Examples of smart contracts were provided. Mr. Hassan offered three reasons why such contracts would be desirable. First, there is no need to have a third party, the process executed by the technology offering autonomy. The second reason, redundancy, all documents are duplicated multiple times and no one can modify information and the third reason, smart contracts have a high degree of precision - the process is executed through the exact code, with zero error margin. Mr. Hassan walked the participants through the challenges of adopting the blockchain technology and stated that business must overcome many different obstacles to transform the current transaction environment that has a regular high-volume of records entering the system. He further highlighted the opportunities that blockchain can be used in many fields, including banking, medical, supply-chain, real estate, insurance, digital identity and IoT, to improve efficiencies and fast-track economic development.

**Mr. Bob Ochieng, ICANN** made a detailed presentation on what AI and Blockchain means. He said that we are not talking about a different internet; it's the same internet, but simply extending or using it differently and that the fundamentals of the internet remain. He defined Artificial Intelligence (AI) as big data plus high performance computing. He indicated that the next divide – after the digital divide, is the data divide and that in Africa we are starting from a disadvantaged position, because we aren't playing a role in where data is stored. We need to address this as a significant issue. On smart contracts– in Kenya, ICT ministry established a task force to make a recommendation to national government on distribution of blockchain. Bob Ochieng reminded the meeting that our problems in Africa have not changed. So as it pertains to big data, if blockchain doesn't solve existing problems – unemployment, poverty, health, it's unlikely to receive political support. If it addresses a problem at the heart of governance issues, then, is more likely that government will provide an enabling policy environment.

**Mr. Mohammed Yusuf** indicated that in thinking about AI, the first thing which comes to mind is the machines which will one day control humans and take over the world. Machines seem like they have human intelligence – machine learning was first coined in 1959. Then came the defeat of chess champion by a machine. By 2016 the danger that AI may pose was demonstrated in the human vs machines battle of the Alpha Go project. A project by Google. The Alpha Go project provided living proof that machine

could be smarter than humans, do human things in far smarter ways. It was around this time that many countries like Japan and Germany began investing in AI. The point which must be made is that it's important to regulate AI by the African Union and the European Union. In understanding how to regulate, and where to regulate, it's important to consider the various levels of AI. Mr. Mohammed Yussuf also looked at the benefit of AI and provided examples in the agriculture sector to save water and produce better harvest; it can also enhance traffic flows in smart cities; assist with cybersecurity by identifying malicious activity; minimize the potential risks but it's not all good. We need proper regulation for risk, R&D for context suited AI. There is need to consider the impact of these technologies on the labour force – re-skilling and certain jobs becoming obsolete. He concluded with several questions. How can the technology be developed in a way that considers gender, and other forms of inclusion and diversity? Can we trust AI which will rely on large amounts of data, much of it personal? How do we put in place frameworks to ensure there is no abuse?

### **Key Issues Raised:**

- What is the technology and how does it work?
- Who manages what and is it truly decentralized and where is Africa in these technologies?
- There is a need for an African language voice recognition system which requires African developers in this research.
- The opportunity is huge, but is not being recognized on the continent. What are the steps required to get Africa involved?

### **Recommended actions:**

- AI and Blockchain must address a problem at the heart of governance (health, poverty, education, infrastructure), then is more likely that government will provide an enabling policy environment.
- The continent needs to address as a significant issue the problem of where data is stored. .
- Banks and financial institutions are ahead of the curve and should be encouraged to adopt technologies now.
- It's important to have some regulation of AI by the AU and the EU and others, particularly of re-informed learning machines, where human beings don't have control and therefore most risky.
- There is need for policies and awareness before AI and blockchain can be fully used.

- Africa needs proper, capable infrastructure for the large amounts of data. We need to look at connectivity and access as basic requirements for AI and blockchain.
- AI – will rely on large amounts of data, much of it personal. We need to put in place frameworks to ensure there is no abuse of this personal data.
- An open environment for innovation is required, from a regulatory and funding perspective.
- Gender and technologies should be central to discussion, and there is a need to look at issues of gender in a substantial way.
- Governments and private sector need to be prepared for different job skills to mitigate the impact of AI in the workplace.

**Plenary Session 9: The Digital Economy and the attainment of SDGs and AU agenda,  
06 November, 2018, 13H30 – 15H00**

**Moderated by:** Mr. Luc Missidimbazi, Congo

**Rapporteurs:** Sarah Kaddu, Uganda, Oyindamola Gbemisola Sogunro, Nigeria

**Panelists:**

- Mr. Mohammed Timouli, Morocco
- Mr. Wisdom Donkor, Ghana
- Eng Jamal Amin, Sudan

The session looked at a holistic approach to achieving the sustainable development goals. With presenters emphasizing that ICTs will make it possible to bring about the attainment of the 17 SDG objectives. Focused especially on quality education, climate action, peace, justice and strong institutions, deploying e-government, clean water supply and sanitation, industry, innovation & infrastructure and universal basic health to protect the world for the present and future generations.

Data being the new oil has far reaching implications in Africa, especially since data collection in the region is disjointed and thereby not easily accessible. This hinders problem solving initiatives. Open data principles: complete, primary, timely, accessible, machine process-able, non-discriminatory, non-proprietary and open re-use license. It is important for open data that the data is available for everyone.

Big data is important for making strategic decisions for all countries, we need to define the types of data, processing and ownerships and these definitions should be made clear.

The presenters were clear on the importance of inclusion and openness to achieving the SDG objectives but noted that while ICT is a key driver it is not a silver bullet. Merging ICT strategic plans to meet SDGs should be done in a structured framework, have good regulations, policies and transparent processes.

The session discussed also how to manage the merging of the SDG objective with the WSIS goals effectively.

### **Recommended Actions:**

- Member states need to be focused on ratifying important legislation like the AU convention on personal data protection and cybersecurity as these are mechanisms for getting Open data initiatives to work properly;
- There is need to sign onto the Open Government Partnership as this is the first step to address open data gaps with Africa.

### **Plenary Session 10: Announcement of the African IGF MAG members, 06 November, 2018, 15H30 – 16H00**

**Moderated by:** Ms. Mary Uduma, Chair, African IGF Charter Working Group

**Rapporteur:** Mamadou Ndiaye, Senegal

During this session, the list of the 17 African IGF MAG members who were selected by the Nomination Committee were announced by the African IGF secretariat and unanimously accepted following comments and clarifications. The African Internet Governance Advisory Group (AfIGF-MAG) composition is found at the annex of this report.

### **Plenary Session 11: Status and Recommendation of AfIGF2017 and Presentation of the Recommendation, 06 November 2016, 16H00 – 17H00**

**Moderated by:** Mr. Makane Faye, African IGF Secretariat

## **Rapporteurs: All Rapporteurs**

Following the presentation of the status of implementation of the AfIGF 2017 recommendations which were geared to the African Union, the following recommendation was made:

- Ensure that Community networks stakeholders are engaged actively in the agenda of national, sub-regional and regional IGFs

## **Closing ceremony & Vote of Thanks**

### **Vote of Thanks**

Ms. Evelyn Wanjiku from Kenya, on behalf of the participants thanked the Government of Sudan for support under the leadership of the Minister of Information. He also extended gratitude to all sponsors and the volunteers, who supported the African IGF.

### **Closing Remarks**

Mr. Moctar Yedaly, Head of the Information Society Division of the AU indicated that he was happy to have been able to organize the 7th AfIGF. He also remembered how some people were skeptical when it was suggested for the AU to host the secretariat of the African IGF and organize its conferences. He highlighted the innovative approach of AfIGF with new faces every year (which means the next generation is getting involved) and new ideas (which means perfect harmony with current affairs in the world). He was proud of the adoption of the African Declaration on Internet Rights by Head of States as it adds value to AfIGF. He promised that the AU Commission will try to implement all recommendations of the conference. He extended the AU's special gratitude to the Sudanese Government for all assistance accorded in organising this year's AfIGF. He concluded by extending his thanks to all attendees and all contributors and wished them safe journey home.

Dr. Yahya Abdullah, Director General of the Regulatory Agency, on behalf of the Minister of Information, thanked participants for attending the colorful event hosted by his agency one night before and stated they would be happy to do it again. He was proud to have been the host and hopes attendees enjoyed Khartoum and gained a lot from the African IGF. He further stated that Africa has many case studies which can be helpful as a catalyst to help nations attain goals which would be success stories for the continent as well as promote knowledge exchange amongst countries. He emphasized that Africa has to recognize its difference from Europe and should do things in her context for the benefit of all. He ended by thanking all stakeholders who supported the African IGF 2019.



## ANNEX I



### The African Internet Governance Forum AfIGF2018

4-6 November 2018

Corinthia Hotel, Khartoum, Sudan

“Development of the Digital Economy and Emerging Technologies in Africa”

#### Draft Agenda and Work Programme

<b>01 November 2018: Sudanese IGF</b>			
Day 0 – 04 November 2018			
<b>08:30 – 09:30</b>	<b>Registration</b>		
<b>09:30 – 10:30</b>	<b>Session I (Room Labda B): Induction Session for Newcomers – Moderated by:</b> Makane Faye, African IGF Secretariat  <b>Panelists:</b> 1. Adil Sulieman, AU, 2. Mary Uduma. 3. Michel Linze CAPDA, 4. Markus Kummer, IGFS  <b>Rapporteur:</b> Mamadou Ndiaye, Senegal		
<b>10:30 – 11:00</b>	<b>Coffee break</b>		
<b>11:00 – 13:00</b>	<b>PARALLEL SESSIONS SEGMENT I</b>		
	<b>Room-Labda B</b>	<b>Room-Soba (2nd floor)</b>	<b>Room-Sebha Gadamis</b>
			<b>Room-Benghazi Hall</b>

	<p>Session #1</p> <p>Nondiscriminatory Internet Access (Host)</p>	<p>Session #2</p> <p>Community Network (APC &amp; ISOC)</p>	<p>Session #3</p> <p>Connecting the Unconnected (Host) –</p>	<p>Session #4</p> <p>African court for online conflict resolution (ACSIS)</p>
<b>13:00 – 14:00</b>	<b>Lunch break - Labda B</b>			
<b>14:00 – 16:00</b>	<b>PARALLEL SESSIONS SEGMENT II</b>			
	<p><b>Room-Labda B</b></p> <p>Session #5</p> <p>Human Rights, Child Protection and youth rights (Youth) -</p>	<p><b>Room-Soba (2nd floor)</b></p> <p>Session #6</p> <p>Internet Shutdowns (Access Now)</p>	<p><b>Room-Benghazi Hall</b></p> <p>Session #7 Critical African Internet institutions (ISOC)</p>	<p><b>Room-Sebha Gadamis</b></p> <p>Session #8</p> <p>Cybersecurity Enhancement for the use and harnessing of ICT (Host)</p>
<b>16:00 – 16:30</b>	<b>Coffee Break - Labda B</b>			
<b>16:30 – 17:30</b>	<p><b>Session 2: National and Regional Initiatives (NRIs) - Moderated by:</b> Makane Faye, African IGF Secretariat</p> <p>Round Table: Tarik Merghani, Sudan, Paschaline N. Maimo, Cameroon, Cade Zvavanjanja, Zimbabwe, Barrack Otieno, Kenya, Segun Olugbile, Nigeria, Moses, South Africa, Daniel Mwesiga, Uganda, Tanzania, Kossi Amessinou, Benin, Makane Faye, West African IGF</p> <p><b>Rapporteurs:</b> Avis Momeni, Cameroon, Patrick Mukonjo Byamungu, DRC</p> <p>Discussion</p>			
<b>Day 1 – 05 November 2018</b>				
<b>09:00 – 09:30</b>	<p><b>Opening Ceremony</b></p> <p>MC : Mohammed Yousif</p> <p><b>Speakers:</b></p> <p>1. United Nations– HQs New York – Through recorded Video</p>			

	<p>2. Moctar Yedaly, Head, Information Society Division, African Union</p> <p>3. H.E. Bushara Gumaa Arror, Minister of Information, Communications and Information Technology</p> <p><b>Rapporteur:</b> Ines Hfaiedh, Tunisia</p>
<b>09:30 – 10:00</b>	<b>Coffee break-Labda B &amp; Group Photo</b>
<b>10:00 – 10:20</b>	<p><b>Keynote:</b> Dr. Alexander Sceberras Trigona, Former Minister of Foreign Affairs, Malta</p> <p><b>Rapporteur:</b> Sandra Chimpala, Zambia</p>
<b>10:20 – 12:00</b>	<p><b>Session 3: Roundtable Policy Discussion: Unlocking the development of the Digital Economy and Emerging Technologies in Africa”,</b> Moderated by Moctar Yedaly, AUC</p> <p><b>Panelists:</b></p> <ol style="list-style-type: none"> <li>1. Dr. Ezzeldine Kamal, Sudan</li> <li>2. Anriette Esterhuysen, APC</li> <li>3. Prof. Clement Dzidonu, AIT</li> <li>4. Hossam Elgamal, AFICTA</li> <li>5. Dr. Alexander Sceberras Trigona, Malta</li> </ol> <p><b>Rapporteurs:</b> Gorfu Asefa, Ethiopia, Janet Kadu, Uganda</p> <p>Discussion</p>
<b>12:00 – 13:00</b>	<p><b>Report of the Parallel Sessions – Moderated by: Adil Sulieman, AU</b></p> <p><b>Rapporteurs:</b> Oumou Sanghare, Mali, Fred Mweeta, Zambia</p>
<b>13:00 – 14:00</b>	<b>Lunch break-Labda B</b>
<b>14:00 – 15:30</b>	<p><b>Session 4: Promoting Digital Africa: Fostering Digital Entrepreneurship and Innovation for a Digital Africa–</b> Moderated by Prof. Clement Dzidonu, AIT, Ghana</p> <ol style="list-style-type: none"> <li>1. Facts and Figures</li> <li>2. Legal &amp; Policy aspects</li> <li>3. Socio-economic aspects</li> <li>4. Challenges and opportunities</li> </ol> <p>Presentations by: 1. Lydienne Natalie Ntogue, Cameroon 2. Martha Chilongoshi, Zambia 3. Josephine Miliza, Kenya</p> <p><b>Rapporteurs:</b> Jean Paul Paul Nkurunziza, Burundi, Prudence Nyamishana, Uganda</p> <p>Discussion</p>
<b>15:30 – 17:00</b>	<p><b>Session 5: Africa’s Digital Economy: Access and infrastructure as fundamentals for Digital Economic growth,</b> Moderated by: Dr. Dawit Bekele, ISOC</p> <ol style="list-style-type: none"> <li>1. Legal &amp; policy aspects for promoting affordable and equitable access</li> <li>2. Building communities</li> <li>3. Alternative infrastructure</li> </ol>

	<p>Presentations by: 1. Caroline Owashaba, Uganda 2. Dr. Yahya Abdallah, Sudan 3. Alan Barret, AFRINIC 4. Tijani Ben Jemaa, Tunisia</p> <p><b>Rapporteurs:</b> Barrack Otieno, Kenya, Zina Brahim Mahamat, Chad</p> <p>Discussion</p>
<b>17:00 – 17:20</b>	<b>Coffee Break-Labda B</b>
<b>17:20 – 18:50</b>	<p><b>Session 6:</b> Empowering Digital Cooperation towards building trust - Moderated by Anriette Esterhuysen, APC</p> <p>1. Building confidence measures 2. Fighting Abuse 3. Legal Instruments &amp; policy coherence</p> <p>Presentations by: 1. Jovan Kurbalija, HLPDC through remote connection 2. Olusegun H. Olugbile, Nigeria 3. Markus Kummer, IGFSa 4. Ridha Guellouz, Tunisia</p> <p><b>Rapporteurs:</b> Evalyne Wanjiku, Kenya, Rabie Bouyahiaou, Algeria</p> <p>Discussion</p>
<b>Day 2 – 06 November 2018</b>	
<b>09:00 – 10:30</b>	<p><b>Session 7:</b> Emerging Technologies Part I (IoT &amp; Big data) – Moderated by Michael Ilishebo, Zambia</p> <p>1. Facts and Figures 2. Legal &amp; Policy aspects 3. Socio-economic aspects 4. Challenges and opportunities</p> <p>Presentation by: 1. Cade Zvavanjanja, Zimbabwe 2. Hafedh Gharbi Yahmadi, Tunisia 3. Dr. Kossi Amessinou, Benin</p> <p><b>Rapporteurs:</b> James Kaliisa, Uganda, Ade Agnide Bada, Benin</p> <p>Discussion</p>
<b>10:30 – 11:00</b>	<b>Coffee Break-Labda B</b>
<b>11:00 – 12:30</b>	<p><b>Session 8:</b> Emerging Technologies Part II (AI &amp; Blockchain) - Moderated by: Abdalmonem Tharwat Galila, Egypt</p> <p>1. Facts and Figures 2. Legal &amp; Policy aspects 3. Socio-economic aspects 4. Challenges and opportunities</p> <p>Presentations by: 1. UNDP expert through remote connection 2. Walid Hassan, Sudan 3. Bob Ochieng, ICANN</p> <p><b>Rapporteur:</b> Edwin Chrisantus Soko, Tanzania, Karabo Rajuili, South Africa</p>

	Discussion
<b>12:30 – 13:30</b>	<b>Lunch break-Labda B</b>
<b>13:30 – 15:00</b>	<p><b>Session 9:</b> The Digital Economy and the attainment of SDGs and AU Agenda 2063 - Moderated by: Luc Missidimbazi, Congo</p> <p>1. Interventions/goals &amp; their linkages to digitalization 2. Mobilizing of resources for digital programmes &amp; priority areas 3. Challenges and opportunities</p> <p>Presentation by: 1. Dr. Towela Jere Nyirinda 2. Mohammed Timoulali (Morocco) 3. Wisdom Donkor (Ghana) 4. Eng Jamal Amin, Sudan</p> <p><b>Rapporteurs:</b> Sarah Kaddu, Uganda, Oyindamola Gbemisola Sogunro, Nigeria</p> <p>Discussion</p>
<b>15:00 – 15:30</b>	<b>Coffee Break-Labda B</b>
<b>15:30 – 16:00</b>	<p><b>Session 10:</b> Announcement of the African IGF MAG members by Makane Faye, African IGF Secretariat</p> <p><b>Moderated by:</b> Mary Uduma, Chair, African IGF Charter Working Group</p> <p><b>Rapporteurs:</b> Mamadou Ndiaye, Senegal</p> <p>Discussion</p>
<b>16:00 – 17:00</b>	<p><b>Session 11:</b> Status of the Recommendations of AfIGF2017 &amp; Presentation of the Recommendations and Conclusions of AfIGF2018 by: Rapporteur General</p> <p><b>Moderated by:</b> Makane Faye, African IGF Secretariat</p> <p><b>Rapporteurs:</b> All rapporteurs</p>
<b>17:00 – 17:30</b>	<p><b>Closing Statements &amp; Vote of Thanks</b></p> <p>Vote of Thanks: Participant TBD</p> <p>Closing Remarks, AUC</p> <p>Closing Statement by H.E. Bushara Gumaa Arror, Minister of Information, Communications and Information Technology</p> <p><b>Rapporteur:</b> Chenai Chair, South Africa, Baboucarr Ceesay, The Gambia</p>

**Programme Director (Plenary Sessions):** Mohammed Yousif, Sudan

**Coordination:** Makane Faye, African IGF Secretariat

**Knowledge Facilitation:** Girma Dessalegn Mekonnen, ECA

**Rapporteur General:** Taiwo Peter Akinremi, ACSIS

**Rapporteurs:** Mamadou Ndiaye, Senegal, Avis Momeni, Cameroon, Fred Mweeta, Zambia, Ines Hfaiedh, Tunisia, Sandra Chimpala, Zambia, Gorfu Asefa, Ethiopia, Janet Kadu, Uganda, Jean Paul Paul Nkurunziza, Burundi, Prudence Nyamishana, Uganda, Barrack Otieno, Kenya, Zina Brahim Mahamat, Chad, Evalyne Wanjiku, Kenya, Rabie Bouyahiaou, Algeria, James Kaliisa, Uganda, Ade Agnide Bada, Benin, Edwin Chrisantus Soko, Tanzania, Karabo Rajuili, South Africa, Sarah Kaddu, Uganda, Oyindamola Gbemisola Sogunro, Nigeria, Chenai Chair, South Africa, Baboucarr Ceesay, The Gambia, Patrick Mukonjo Byamungu, DRC, Oumou Sanghare, Mali

## ANNEX II

### **Induction Session to New Comers, 04 November, 2018, 09:30hr – 10:30hr**

**Moderated by:** Makane Faye, African IGF Secretary, Senegal

**Rapporteur:** Mamadou Ndiaye, Sénégal

**Makane Faye** started by giving a description of the global Internet Governance Forum (IGF) process and the multi-stakeholder dialogue on public policy and key internet governance issues such as the Internet's sustainability, robustness, security, stability and development. He further said that IGF activities evolved around a secretariat and the Multistakeholder Advisory Group (MAG) composed of 55 Members from governments, the private sector, civil society, academia and technical community to advise the UN Secretary-General on the programme and the schedule of the IGF meetings. He indicated that everybody participates on an equal footing in IGF meetings with equal power and equal opportunity for all and that the national, regional and continental IGFs follow the same process. For more information he referred to the IGF website ([www.intgovforum.org](http://www.intgovforum.org)). He concluded by inviting participants to take part physically or remotely in the African Union Open Forum (IGF 2018 OF #4), which will be organized on 13 November 2018 from 15H00 to 16H00 in Room VIII at UNESCO, Paris. He then gave the floor to the panelists.

**Markus Kummer**, Internet Governance Support Association (IGFSA), informed that he was happy to see lots of old faces and new faces. He gave the historical perspectives of the Internet where the governments is one side and the technical community and civil society is on the other side. The Government wanted to extend national sovereignty into cyberspace while the other group wanted a distributed Internet with participation of all stakeholders and not controlled by government. This led to

the World Summit on the Information Society, which agreed on the continuation of discussions with all stakeholders, leading to a new process where everyone participates at equal footing. He further indicated that the IGF has created a sense of trust among communities but did not have decision making power, however, it has important roles such as advising, warning, bringing the attention of stakeholders on issues and shaping public opinions, can identify issues of concern, can draw the attention to an issue and can put an issue on the agenda of international cooperation. It also has a good methodology such as sharing of best practices, think globally, act locally, no one size fits all solution and has adapted to the need of each country. He spoke about the National and Regional Initiatives (NRIs) process, as one important output of the IGF, where the output can influence policy making at the national and regional levels. In this context, IGFSAs were set up in 2014 incorporated in Switzerland to support the global IGF and NRIs, to promote exchanges between NRIs and IGF and among NRIs. IGFSAs have contributed to IGF trust fund with \$260,000 and to national and regional IGF conferences with \$334,000; IGFSAs are still raising funds and will go for crowdfunding in order to step up its support to the IGF and NRIs process. He concluded by raising the debate on what type of Internet we want. Should it be open, global and interoperable based on innovation without permission? Or should it be secure and respect national borders only? He called upon participants to join IGFSAs with an annual membership fee of \$25 and indicated that candidatures were open to renew IGFSAs Board members at the global IGF to be held in Paris next week.

**Adil Sulieman**, African Union, Ethiopia welcome participants to his country, Sudan, he congratulated the local organizing committee for a well-organized African IGF. He noted that the African IGF process was multidimensional and of multistakeholder in nature, where several aspects are interlinked such as legal, technical, operational, capacity building, etc. He indicated that these are tackled in the IGF process in Africa where the annual conference makes recommendations. He highlighted the process, which starts with national priorities, goes to regional and continental levels and ends at the global level with African common outputs disseminated in the African Open Forum and in various platforms such as the NRIs collaborative sessions. He concluded by urging participants to actively participate in the African IGF process, to debate, discuss and consult in order not to miss the digital revolution.

**Mary Uduma**, Nigeria intervention focused on the national IGF initiatives and processes. She indicated that the national IGF process was a platform on policy issues that affects the local environment with involvement of government, academia, civil society, the technical community and business. She stressed the need to involve stakeholders on debates, discussions and consultations on thematic issues such as

cybersecurity where no one is certain of the security of his data while government could enforce measures aiming to clamp down these platforms. Hence need for intervention of all stakeholders at the national level to work on cybersecurity and make the Internet free of abuse and democratic. She recalled paragraph 80 of the WSIS Declaration where IGF derives its legitimacy for national, regional and global consultations including on the 17 Sustainable Development Goals. Through IG, we could measure the countries achievement of the SDGs and poverty alleviation, job creation or job loss and ensure that everyone is connected by allowing each stakeholder to play its role. She concluded by calling on national IGFs to be part of the NRIs network at the global level to exchange experiences and discuss collaboration. She underlined this year's IGF in Paris, where there will be several NRIs sessions to discuss several issues including access, cybersecurity, new technology, human rights, etc.

**Michel Tchouang Linze**, Cameroon based his intervention on the IGF process at the regional level underlining the role of government, private sector, civil society and academia, stressing that everyone has a role to play. He recalled the origin of the IGF process burnout of the Tunis Agenda of the WSIS second phase. He indicated that a process started in the Central African region to restructure the IG activities by bringing together all representatives into a multistakeholder advisory group to work with the regional IGF Secretariat. He said that such a scheme is functioning well at the level of the African IGF and will be replicated for Central Africa. Michel concluded by underlining the strength and weaknesses of the regional Internet Governance process and provided recommendations to governments and to regional and international organizations.

### **Key Issues Raised:**

The issue of relevance and appropriateness of the concept of multistakeholder of actors operate in different groups wearing different hats was raised and the reply was that it was sometimes difficult to know who was from which single stakeholder group due to specialization of a person operating in a different group from the one he originates from. The examples of an engineer working for a private company and a researcher working for civil society were provided. Also, Sudan was clarified to be in East Africa as categorized by the African Union to answer question of geographical location of Sudan. The participation of the private sector in the planning and use of the Universal service funds was found to be absent in most countries, hence making universal access impossible in Africa. On this, a question on the impact of the recommendations of the African IGF in the last 7 years on the African Union agenda was raised. The reaction was that there was real impact due to the fact that the process started with the Declaration of

African Union ICT ministers in 2012 putting emphasis on the need to organize an IGF at all levels (national, regional and continental), leading to the African Union Declaration on Internet Governance adopted in 2018 by the African Head of States.

### **ANNEX III**

#### **Report of the parallel session, 05 November, 2018, 12H00 – 13H00**

**Moderated by:** Adil Selieman, AU

**Rapporteur:** Oumou Sanghare, Mali

#### **Panelists:**

- Mohammed Elnor, Sudan
- Taiwo Peter Akinremi, ACSIS
- Terig Murgani, Sudan
- Mohamed Yousif, Sudan
- Grace Mutung'u , Associate, Kenya ICT Action Network
- Barrack Otieno, AFTLD

Adil Sulieman, AU, moderated the session and invited the panelists to share the summary outcome of their side session. As soon as the panelists were done, Adil then opened the floor for intervention. The reaction of the participants leads to the following recommendation.

#### **Recommended Actions**

- African Court towards online conflict resolutions should be at the top agenda of the African Internet Governance discussion.
- Child Online protection should be given a top priority during the AfIGF and AU should come up with a framework for that.
- Internet Governance should be part of the school curriculum.

## ANNEX IV

### **Non Discriminatory Internet Access, 04 November, 2018, 11H00 - 13:00**

**Moderated by:** Mohammed Yousif, Sudan

**Rapporteur:** Mohammed Yousif,

**Panelists:**

- Prof Nawari
- Eng. Mohammed Hafe
- Eng. Babocaur

**Prof Nawari**, presentation focused on the impact of sanctions on states, and the different resolutions and agreements with international organizations regarding the non-discriminatory Internet access. He talked about the weak basis upon which sanctions are based, and the effect that discriminatory access to the ICT-related information or equipment might have on innocent Internet users who have no relations with the political issues between states.

**Eng. Ali** gave an historical overview of how the Internet evolved, and the current status of the Internet. Network neutrality, the adoption of Network neutrality principle by FCC. 2018 FCC repealed Net Neutrality and the motion for net neutrality.

**Eng. Mohammed Hafe** gave a brief introduction to cyber security and cyber-attacks. The effect of discriminatory access on using technologies (examples: installing and updating software). The inability to mitigate attacks like DDOS and DNS abuse.

**Eng. Babocaur** informed the participant that there is intentional discrimination against the Internet, the monitoring of the Internet. Keep farmers as they are by not allowing them to access the Internet. The Government doesn't allow the use of ICT and holds information from people so that they won't know what is around them and what is taking place in the rest of the world. The IGF has made recommendations to the government. He further concluded that ISPs should not give priority to users based on how much they pay.

## **Key Issues Raised:**

- Net Neutrality
- Internet access (including physical access, and access to content)
- The weak basis on which discriminatory access is based
- The Internet should be considered a human right
- The right to Internet access is a must
- Even though we are net neutrality advocates, health care should have dedicated internet services
- Rural areas should be covered with Internet access if we are to enhance the economy and reduce costs.
- Ensuring that states are not to control the Internet.
- Not enough return on investment is preventing Internet companies from investing in rural areas.

## **Recommended Actions:**

Governments, Regulators, Internet Service Providers, and Civil Society Organizations should take action as pertain net neutrality, connecting the unconnected areas, ensure fair Internet access with emphasis on education and healthcare and raise awareness on the benefit of connecting rural areas (ex. remote health services)

## **ANNEX V**

### **Community Network, 04 November, 2018, 09H30 – 10H30**

**Moderated by:** Josephine Miliza

**Rapporteur:** Grace Mutung'u , Associate, Kenya ICT Action Network

#### **Panelists**

- Carlos Rey-Moreno from Zenzeleni Networks (South Africa)
- Fred Mweeta, Machaworks
- Patrick , Pamojanet (DRC)

**Carlos Rey-Moreno** from Zenzeleni Networks (South Africa) narrated the inception of the network which begun in rural South Africa. Zenzeleni had grown to a small ISP supplying internet at cost to local villages. Zenzeleni also provides training, legal and regulatory support, maintenance support as well as wholesale

negotiation for the smaller networks. He described Zenzeleni's infrastructure which includes a data center in the closest city, long distance wifi links and two towers which were serving 10 business clients and 35 public hotspots. This was contributing to the digital economy where for instance, in last 28 months, about USD 128,000 were spent in operations and another USD 36,000 in capital. There were more than 20 direct employees while indirectly, equipment vendors, upstream ISPs, transport companies benefited from the economy. Clients contribute 85% of expenses with the rest coming from donors and government. All operational expenses paid by clients. This was achieved through ownership of infrastructure which enabled Zenzeleni to charge for costs only. In addition to cost savings, Zenzeleni improved digital literacy as the local community own the internet and learn about it. The network was also reliable and, for example, during the community networks summit in South Africa, there was a storm. Other networks were down for about 20 hours but Zenzeleni was up as it was created for the area.

**Fred Mweeta**, Machaworks serves a community in rural Zambia. It is 75 kilometers from nearest town of Choma. He described running a community network as a vocation which required a paradigm shift where instead of "waiting for the internet, the community makes the internet". Machaworks strategy was first to engage the community through local leadership known as chiefs. Activities are in line with the local culture, community processes and methods. Once the community warmed up to the idea of the internet, they constructed the infrastructure and deployed the network. The network could however not sustain itself solely through internet provision. It had other streams such as schools and training centers, a restaurant and other small businesses in the community. An important part of Machaworks is the development of the community. This happens through the local digital skills school. Interestingly, the school attracts a lot of school leavers, especially those who did not do well in mathematics and sciences, thereby providing skills to those not absorbed by the public education system. In addition, Machaworks develops local thought leadership in order for the community to fully own not only the network, but also the methods and processes around it.

**Patrick**, (DRC) begun by explaining how Pamojanet addressed the financing problem. He showed a picture of working with the community to provide labour services such as transporting pillars, digging holes for the pillars. He also explained that the terrain was challenging, so the signal was sourced from neighboring Rwanda. This was then connected to infrastructure close to the lake and then distributed through antenna set up by Pamojanet. They supplied internet to local companies such as library, hotels and hospital. Access to the internet is free for local community through public hotspots. 60% of the costs

paid by businesses while 40% are paid by the community. He narrated findings of a research carried out among women using Pamojanet. The majority of the community now uses the internet to connect with friends and family, research for studies, keep up with current events and save money. In his view, for a community network to succeed, three important ingredients are community ownership, adapted infrastructure and collaborative design.

### **Key Issues Raised:**

- Creation of awareness on alternative models for connecting the unconnected, including community networks
- More training and support for community networks so as to use money more efficiently
- Allocation of dormant resources, e.g. GSM, mobile broadband, towers of national broadcasters, fiber for community networks
- Expansion of licensing frameworks to accommodate noncommercial models of the internet.
- More efficient use of universal service/access funds. For example, instead of incentivizing MNOs to provide services in rural areas, why not incentivize rural areas to set up their own areas
- Vocational training – so as to sensitive communities on importance of internet.
- Tax incentives to support importation of equipment for community networks
- To the donor community, networks would benefit from more flexible funds to allow communities respond to their authentic needs as opposed to fitting donor requirements
- Improve access to end user devices such as smartphones

### **Recommended Actions:**

- Creation of more awareness on community networks- all
- Policy changes towards community network
- Accommodation for community networks in licensing frameworks- AUC to create awareness among ICT Ministers
- Other incentives for community networks e.g. tax breaks for community network equipment- AUC to sensitize ICT Ministers
- Allocation of resources for community networks- AFRINIC to consider discounts for community networks
- Vocational training should be embrace by all

## Other Discussion Points:

- Whether community networks are a viable business model
- How community networks in near borders could benefit from resources in neighboring countries

## ANNEX VI

### Connecting the Unconnected, 04 November, 2018, 09H30 – 10H30

**Moderated by:** Adil Sulieman, African Union

**Rapporteur:** Sogunro, Ministry of Communications, Nigeria

#### Panelists

- Dr. Tarik Marghani
- Ms. Chenai Chair
- Mr. Abdalmonem Galila

Africa is lagging behind in the number of people connected to the internet. The internet needs to be affordable, available and meaningful for its proliferation in Africa to move to an exponential level. While content might be available, it is not available in the local language and this poses a great barrier to reaching the underserved areas. Concerns of digital literacy and how it affects ICT acceptance were raised. The need to bring services that are fit for purpose and not just being connected to tick a box that we have a number of people connected without lives being changed for the better.

**Dr. Tarik Marghani** had a presentation on Internationalized Domain Names (IDN) and he informed the participant that bringing more people to be connected on the internet in Africa can be achieved by delivering content in local languages. Previously, domain names used to be only in English language, but now domains can be in other languages. Role of generational panels in IDN projects: generation panels generate proposals for script specific label generation rules (LGR) based on community expertise and requirements. LGRs do not focus on the languages as it is focused on the script. The growth for African

on the IDN world map is poor as some African languages are not in the UNICODE chart. IDN is an opportunity to preserve the African languages and cultures which seem to be dying.

**Ms. Chenai Chair** informed the participant that the greatest barrier of the unconnected in Africa is power infrastructure. Urban poverty also affects the spending power of the people, the ability to purchase smart phone and the internet access is expensive in most African countries. The unavailability of the right smart devices can be a barrier to getting connected as most people access the internet via mobile devices. The lack of awareness of what the Internet is especially with parents not understanding technology makes them want to prevent their children from having access.

**Mr. Abdalmonem Galila** started by answering whether he has the right to access the internet in my language?" Ten years ago, 75% of websites were in English and the other 25% was in other languages, but now the divide is more 50-50 as more websites are going up in other languages. This shows there is an increased diversity in the people accessing data online. IDNs in local languages will help customers remember a domain name more easily, increase the reach of businesses. Even going as far as using email addresses in our local languages will increase local content online. Using the maxim from Nelson Mandela that "If you talk to a man in a language he understands, that goes to his head. If you talk to him in his own language that goes to his heart" the importance of getting more African content and languages online can be simply explained.

### **Key Issues Raised:**

- Getting the older generation to understand the internet so they will not stifle exposure and the use of the internet for children.
- Providing applications and services that are useful for people in rural areas that will affect their lives positively. A program setup for farmers in Cameroun which provided the an avenue to sell their goods at competitive prices and teach best farming practices to increase yield was a good use case for the farmers to make use of the internet.

### **Recommended Actions:**

- Seeking African governments to support efforts to close the connectivity gap by addressing issues around the quality of internet connectivity available.

- Removing excise duties on importation of smart devices and stopping social media taxation
- Governments should encourage free public Wi-Fi
- Policies solutions should look at ensuring Africans are both producers and consumers of information on the internet instead of just consumers
- Governments need to start applying the dig once policy, such that as road infrastructure goes up, power and ICT infrastructure is also being provided as this will speed up connecting the unconnected.
- To prevent the loss of the various African cultures, governments must invest in getting archives moved from paper based to digital.

## ANNEX VII

### **African Court towards Online Conflict Resolutions, 4 November, 2018, 09H30 – 10H30**

#### **Moderated by:**

- Taiwo Peter Akinremi, West Africa Regional Coordinator, ACSIS
- Prudence Nyamishana Uganda, a blogger and member of ACSIS
- Ade BADA, lawyer I.T consultant

#### **Rapporteur:** Evelyne Wanjiku

**Taiwo Peter Akinremi** raised the issues on what should be addressed by the African court for online conflict resolution. He suggested that the issues be divided into civil and criminal matters. He also suggested a classification of cases. That is to say, governments conflicts with its citizens as well as conflicts between individuals and business entities. He expressed a need for a united African court where such issues can be addressed and an e-court system where people can attend remotely. He was also concerned with issues of compliance, observing that sometimes when the judiciary makes judgements the government fails comply with some matters even when the judiciary has ruled the interference to be unlawful. On this, he was supported by Richard Mulonga from Zambia bloggers association. Richard pointed to a running conflict in Zambia where government seems to clamp down on the freedom of speech and association affecting bloggers. It was thus said that where a government fails to comply with the law especially as it affects human rights, citizens and organizations should have an e-court where they can be heard.

**Prudence Nyamishana** raised a concern about government violations against its people. She was concerned that citizens should have a court where they can take internet related conflicts. She pointed out a case of her country Uganda, where the government has imposed a social media tax. She saw this as a violation against making the internet affordable and accessible for all. Given that only 22% of the population are connected, she observed that this was comparable to a shutdown or censorship as it makes it hard for people to stay connected. She said that having a court that has influence to change such decisions or hear citizens' complaints on such issues would help to resolve them. She was also concerned that specific issues of internet conflict are bundled in with other court cases making their resolution difficult. She said it would be necessary for countries to set up courts that specifically listen to issues of Internet conflict. She observed that cases such as gender based violence in online spaces when taken to the main courts tend to take a very long time to get resolved due to the backlog in the judicial system. She was supported by Michael Ilishebo from Zambia police force who gave an example of Zambia that has set up special courts to listen to specific offenses that require fast judgments like traffic offenses. Michael suggested that the nature of the internet which allows crimes to be executed fast, thus online crimes should not be made to wait along with other offline cases. Prudence was also concerned about the lack of a higher court where people can appeal judgements made by their judicial officers especially where government fails to comply. She suggested that the African court for online conflict be made part of the African court on human rights.

**Ade Bada** was concerned that the general population seems not to be aware of the laws and their rights as regards their rights on the internet. This has led to conflicts between government and the people where activists and individuals getting arrested for violating laws and rights that they may not have been aware of. He was also concerned with how offences are framed. He questioned whether suicide as a result of cyber bullying should be classified as criminal. He also observed that justice for online crimes seems to be far from the people. Some countries have only one cyber-crime unit where cyber-crimes can be reported. This means people have to travel far to make reports and this may be expensive for most.

### **Key Issues Raised:**

There is a need for an online African court where e-conflicts can be resolved. This is as to enable citizens and governments have a place to resolve internet related disputes between individuals in different jurisdictions or between a state and its citizens.

The issue of an aged judiciary and a law enforcement system that doesn't understand new technology also came up. It was observed that the laws and the judicial system has not kept up with the changing times brought about by the internet, and thus trying to use offline laws for online crimes becomes difficult.

The panelists were also concerned with the backlog in the courts, which make it hard for online issues to get a priority. This means that justice is delayed and cases and files get lost. Karabo Rajoouili, a journalist from South Africa who was in the audience was concerned that cases and judgements are also not available to the general public and files are often lost in the current court systems. She observed that an e-court system would help with these issues. She saw the e-court is a good idea but one that might face challenges due to the current system where people believe that parties must be physically present in a court hearing.

### **Recommended Actions:**

- It was recommended that all judicial officers and law officers receive capacity training to keep up with the changing nature of the internet. Equally laws must be amended to take digital issues into consideration. – Governments, judiciary
- It was also recommended that the digital policies being developed by various countries take a bottom up approach, including all stakeholders and making people aware of the law and their digital rights.
- The IGF needs to draft a document of online conflict resolution in Africa
- The African court for online court resolution can learn and model good practices from the regional courts within Africa
- Sensitization of the public around issues of internet violations and the relevant laws was also recommended. (multistakeholders)

## ANNEX VIII

### **Human Rights, Child Protection and Youth Rights, 04 November, 2018, 09H30 – 10H30**

**Moderated by:** Prudence Nyamishana

**Rapporteur:** Caroline Owashaba

**Panelists:**

- Caroline Owashaba Team Leader Action for Youth Development Uganda,
- Oumou SANGARE Youth IGF Ambassador Mali and
- Mohamed Yousif TPRA and Chairman IGF Sudan Committee

The Human Rights, Children Protection and Youth Rights (Youth) session started on a good note, the moderator asked the panel to share their experiences about internet and social media usage in their respective countries.

**Caroline Owashaba** from Uganda rightfully talked about the Ugandan experience of Internet and Human rights. The Internet is used by many youth to access information on social media and other platforms. Digital technology builds literacy skills every day, the more it is used the more it enhances one's skills. It is a safer space for youth to share experiences. It also builds networks for them and bridges the communication gap, however, some youth share information for the sake of sharing information. The youth lacks capacity on internet usage on what to share and not to share. The Ugandan Youth and general public are being affected by the social media tax OTT which affects the development agenda. The information shared sometimes leads to shutdowns which is against the human rights of a person. There are no regulations for children and protection for internet online protection, which must be addressed. She concluded that mobile money tax has led to shut down of businesses that was started up by the youth

**Mohamed Yousif** from Sudan Internet Governance Forum said that the internet taxation is a big challenge, the poor infrastructure in the rural areas and the accessibility by the rural youth. Youths are disconnected from the connected and fixing it takes most of the time. The youth lack access to the internet, and faced with numbers of challenges such as poor electricity connection, high tariffs, expensive and good gadgets are not affordable by majority of the youth thus leading to the big number of them disconnected. He further informed that participants that they have carried out awareness in various schools to reach more people along awareness on online school child protection.

**Oumou Sangare** from Mali said that the youth uses the internet every day, it's a right to share with peers, and however, the low coverage affects them a lot and the fact that the internet is centered in the urban and not rural affects the youth which further leads to information gap. When we talk about internet usage, we mean gadget/digital usage, literacy, knowledge is actually limited to a very many especially the rural Mali youth. And in most cases when the government doesn't like what the Youth share on the social media; twitter, Facebook especially during election time they shut down those services. The government shouldn't have any specific law restricting the Internet usage, and if there is, thus leads to poor internet usage by youth. And sometimes they think the Internet is Facebook only. Furthermore, she said, she can't imagine living without internet, so everyone must have access to it.

### **Key Issues Raised:**

- The Internet is a fundamental Human Right for everyone which include the children, youth and adult must have access. It's no longer for fun, but a right.
- Internet amplifies the youth voices on different advocacy issues on social media like WhatsApp, twitter, and blog.
- In Uganda it has been used by bloggers to demand for social justices by women demanding government accountabilities about the women killings using different Hashtags, Blogs and mobilization of numbers in advocacy all over the country. Mobilization tool seeking for justice in respective communities and Awareness campaigns have been done in Uganda, Sudan and Mali
- Digital human rights and social media rights is to make governments accountable. Parent's child literacy in Sudan schools is a best practice that should be adopted by other states.
- OTT and Taxation on mobile money through transfers and withdraws affecting Africa's internet usage and this must be addressed but unfortunately it's being adopted by other countries. Security awareness on internet usage be done everywhere, including schools
- Intimidation from top leadership to youth, and lack of local content development facilities.

### **Recommended actions:**

- There is a need for creation of private sector, business, government partnerships and collaborations to provide capacity building to less knowledgeable communities.
- We must develop Children protection on internet usage laws, policies and regulations should be clear through the African Union and other stakeholders, including the African Internet Governance Forum and the Internet Society.

- The Youth Internet Governance Forum should be inclusive. Mobilization should be done beyond the YIGF including Africa Youth Commission, National Youth Networks to create more awareness about internet usage.
- We must all advocate for affordable and accessible internet for everyone, whether urban and rural, we all must access cheap, affordable internet leaving No One behind
- Internet must go beyond cities, towns, urban centers, it's not for a few thus connectivity to rural communities is a must.
- Internet Usage goes beyond gadget usage, access to televisions, radios and but to other communication channels and that's when digital becomes digital for youth and information flows from one person to another.
- The governments have a key role to play in developing policies and regulations that enable firms to leverage digital technology for youth to compete, create and innovate.
- There is a need for financial support and capacity building for youth to grow the digital business from the mother government's and business sector.
- There is a need to improve digital skills and literacy for youth using digital gadgets and business. Need to strengthen digital infrastructure in the communities, including community networks.
- The youth should have access to financial digital platforms through mobile phones and online platforms thus reducing on the costs and serving the most hard to reach population through FinTech, Beyonic, Mobile etc. The ability to transact online places youth in better position in the digital economy.

## ANNEX IX

### **Internet Shutdown, 04 November, 2018, 09H30 – 10H30**

**Moderated by:** Adil Sulaiman, AU, Taiwo Peter Akinremi, ACSIS

**Rapporteur:** Uganda Sarah Kaddu, Makerere University, Uganda

Internet shut down is bad for the continent because it affects the economy. Some of the countries where Internet shut down has been experienced include but not limited to: Uganda, Ethiopia, the Gambia, and Kenya where Internet cables were cut down

## **Why Africa government shut down the Internet?**

The African government shutdown the internet, throttle access and other digital services in order to exercise power. It boils down to the fact that government has inadequate trust of the people, lack integrity and refused to be open and truthful.

### **Key Issues Raised:**

- In Africa, internet advocate are not proactive in dealing with the Internet shutdowns.
- In an economically driven society, if the Internet is shut down, it will economically affect the people because it drives the economies e.g. a lot of businesses are conducted online and once shutdown occurs, all businesses/transactions are all affected.
- On the issues of fake news, which is a current concern, the governments are not using the same platforms to denounce fake news
- There is currently no free flow of information from the African governments
- Internet User awareness is inadequate
- Transparency and good governance are still issues of concern which has leads to the issue of public not trusting the government.
- There are currently no national and or Africa legislation against certain actions taken on the Internet shut down
- Many of the Africa governments are not moving at the same pace like the people/public
- Many of the African political leaders are not using the Internet and subsequently do not know the benefits

### **Recommended Actions:**

- To Invest in Digital literacy by raising awareness to the citizenry of their roles and protection from cyber attacks
- Governments should refer to existing legislations before taking Internet shut down decisions (because they are multi-stakeholder).
- African governments should make the Internet the heart of the economy
- To promote good governance in Africa
- There is a need for a consistent technical solution to the existing laws by adopting the bottom up approach

- There is a need to raise awareness to the political leaders to be able to appreciate the benefits of the Internet
- Reliability based on the legislations
- Enhance trust in ICTs and in particular in the Internet
- Provide skills for the African citizenry
- To move away from being consumers to developing infrastructure

### **Other Discussion Points:**

- Need for Africa strategy on OTT
- To have Africa legislations governing electronic media

## **ANNEX X**

### **Critical African Internet Institution, 04 November, 2018, 14H00 – 16H00**

**Moderated by:** Moctar Yedaly Africa Union Commission

**Rapporteur:** Barrack Otieno AFTLD

#### **Panelists**

- Dr. Alex Corenthin, (AFTLD)
- Mr. Alan Barret, AFRINIC
- Mr. Michuki Mwangi, ISOC

**Moctar Yedaly**, Head of Infrastructure, AU welcomed participants and the panelists to the session. He thereafter invited Dr. Alex Corenthin, the Manager of Senegal Network Information Centre and President of Africa Top Level Domains Organization (AFTLD), the Regional Association of Country Code Top Level Domain Registries in Africa to share the successes and failures of Africa Top Level Domains Organization.

**Dr. Corenthin** informed participants that AFTLD had just concluded the process of developing a new strategic plan that would guide the organization for the next five years. He informed the audience that the plan had been arrived at after a review of the organizations Strengths and weakness as well as its opportunities and threats. Notable successes included automation of more than 58 % of African Registries in the last ten years. He also informed the audience that AFTLD had conducted 22 events in 17 different

countries in the last ten years, enabling it to build the capacity of 1,890 registry staff and community members drawn from the 55 African Countries. He noted that the capacity building programs had enhanced the visibility of African Country Code Top Level Domain Registries. Dr. Corenthin noted the fact that despite the progress made, a number of African Registries are yet to become fully sustainable, hence they could not pay adequate membership fees needed to sustain the organization. Other notable weaknesses include poor visibility of Country Code Top Level Domain Registries among consumers, business communities and governments in Africa, wide financial gaps between country code top level domain registries as well as pricing and marketing challenges.

**Alan Barret**, Chief Executive Officer of the Africa Network Information Centre (AFRINIC) noted from the onset that AFRINIC vision was to be recognized by the African and global Internet Community as the Regional Internet Registry. The other objective was to ensure that the organization was financially sustainable which had already been achieved through payment of membership fees. AFRINIC has 1,700 members on the African continent whom it allocates Internet Protocol addresses. 120 million Internet protocol addresses have been allocated to its members. AFRINIC has also trained 700 engineers in different countries on the African continent on management of Internet Protocol addresses. AFRINIC runs an active Policy Development Process (PDP) and sponsors select network operator groups and Internet Governance Fora on the continent. He, however, noted the fact that there was limited participation in AFRINICs Policy Development processes. He noted the need to shift from personality based debates to issue based debates as a way of enriching the Policy Development Process. He called upon participants to join the policy development mailing lists and contribute to the debates since they had an effect on how Internet Protocol addresses were managed on the continent. Mr. Barret also cited the language barrier as a major challenge. Africa has four major languages used in different countries. Mr. Barret cited the fact that African countries had been slow in adopting Internet Protocol version 6 yet Internet Protocol version 4 addresses were running out. There are 6 million Internet Protocol version 4 addresses remaining which cannot be adequate for the growing African population that is currently estimated to be 1.2 billion. Mr. Barret cited a shortage of volunteers to serve on various policy development processes as well as the AFRINIC board. He also noted that there was need to review a number of AFRINIC bylaws and legal frameworks as well as Internet Protocol addressing policies. In conclusion, he reiterated the fact that there is room for growth on the African continent. Deployment of Internet exchange points has improved the performance of various networks which will eventually translate to lower Internet connectivity charges. This will encourage more citizens to come online.

**Michuki Mwangi** shared insights into the achievements of various capacity building initiatives conducted by network operator groups led by the Africa Network Operators Group. Mwangi who started as an AFNOG Student and later on became an Instructor noted the role played by African Internet Institutions such as the Africa Network Operators Group, Africa Top Level Domains Organization, Africa Cert with the support of partners such as the Network Startup Resource Centre in developing training content that had been used in Capacity building across the continent. Delivery of the content has been through face to face training. Capacity building for network engineers has been going on for 19 years on the African continent. He also noted the fact that through the capacity building programs, a pool of trainers has been established through various trains the trainer programs and the continent does not rely on International expertise as was the case in the beginning.

The moderator invited Africa CERT to give its intervention. Africa CERT noted little attention was paid to Cyber Security issues when the African continent was being connected since the major issue was access. It was however noted that Cyber Security is now a major issue and that there are 28 structured Computer Incidence Response Teams in 15 countries on the African continent. Out of the 28, 14 are internationally recognized. Africa CERT noted the importance of distinguishing between the security of networks and the security of data and the importance of raising awareness of the issues to Internet users.

Mr. Yedaly invited the Sudan Network Operators Group to share some of the achievements they had made and lessons that had been learnt while establishing the network operator group.

Sudan Network Operators Groups are made up of University graduates and new network engineers. The group has supported the establishment of the Sudan Internet Exchange point and the local Internet Community.

Moctar Yedally thereafter invited participants to contribute to the debate and ask the panelists questions. He noted the fact that there was a need for the African Community to rethink its approach to Internet Governance. He further said that the Internet Governance landscape in Africa differs significantly from the rest of the world since Government is a major player in industry and academia. True multistakeholder processes require the participation of governments. He noted the need to strengthen collaboration between various African governments and the Internet Community on the continent. He

also noted the fact that the policy development processes on the African continent had become challenging due to lack of coordination among the Africa Internet Organizations.

Markus Kummer Chairman of the Internet Governance Forum Support Association noted that after the World Summit on the Information Society, Country Code Top Level Domain Organizations that were neither Government entities, academia nor Civil Society sought recognition to enable them participate in Internet Governance processes. This resulted in the establishment of the Technical Community in the Internet Governance Forum.

Tijani Ben Jamaa from the Africa Regional At Large Organization highlighted the fact that AFRINIC policy development processes were facing challenges due to hostile exchanges between stakeholders. The hostilities contributed to community members shying away from critical policy development processes. He called on the African Internet community members to ensure that the hostile exchanges are brought to an end. Community members need capacity building on multistakeholder engagement. He reiterated the fact that community members should not be afraid of contradictory positions since this was a critical aspect of the multistakeholder engagement process instead community members have to be taught that solutions will always be found if engagement is done well.. He reiterated low participation of African Governments in AFRINIC policy development processes which needed to be addressed. Grace Mutun'gu a participant of the Africa School of Internet Governance noted that the conversation only focused on business and technical aspects and proposed the inclusion of public interest issues in the AFRINIC debates. Carlos Rey Moreno from Association of Progressive Communications and Zenzeleni Networks a Community based network in Southern Africa noted that there was a need to review AFRINIC policies on how Internet policies are managed to ensure Community based networks are accommodated. He cited the need for a review of the AFRINIC fee structure to include discounts for Community Networks.

Martha Chilongoshi from Zambia enquired ways in which more African Community members would be encouraged to participate in the AFRINIC Policy Development processes in light of the issues that had been raised.

In reaction to the issues raised by the participants Dr. Alex Corenthin noted that AFTLD had been able to fulfill its mandate through the support of various partners such as the Internet Society (ISOC), the Internet Corporation for Assigned Names and numbers (ICANN), African Network Operators Group (AFNOG), AFNIC – the French ccTLD, Francophone (OIF) and the Africa Union. He noted the fact that African

ccTLDs are yet to become fully sustainable and called on the partners to continue to offer the organization support since the efforts are bearing fruit. Alan Barret noted that since the establishment of AFRINIC, the Internet had grown tremendously. He said that players who did not pay attention when the Internet was being invented such as governments had started paying keen interest in the Internet. He noted the fact that AFRINIC had set up a government engagement working group that facilitates government engagement efforts. And Michuki Mwangi noted that there was need for Africa Internet Institutions to review their strategies and have a clear vision of tackling present challenges. There is also need for identification of gaps. Africa Internet Institutions need to open themselves up to other stakeholders such as government and the business community.

### **Key Issues Raised:**

- Scaling of Capacity Building Programs to address growing demands. Face to face training programs are no longer adequate for the continent's needs.
- The impact of the training programs needs to be measured to ascertain how they have contributed to the growth and development of the Internet on the continent.
- There is a need for better coordination among African Internet Organizations to avoid duplication of efforts.
- African Internet Organizations should interact more with the Business Community and Internet users to encourage as a way of growing the Internet Community.

### **Recommended Actions:**

- The Africa Union Commission recognizes the critical role the African Internet Organizations are playing and will support them in any way without interfering with their operations to ensure they achieve their objectives.
- There is a need for Africa Internet Institutions to develop codes of conduct that ensures they remain focused on their core business. The code of conduct should be adhered to by Community members.
- Community members need to actively involved in policy development processes established by African Internet Organizations
- There is the need to build trust in African Internet organizations. Community members require capacity building on ensuring debates are issue based and do not degenerate into personality attacks.
- There is a need to engage governments in Internet Policy Development processes

## ANNEX XI

### **Cybersecurity Enhancement for the use and harnessing of ICT, 04 November, 2018, 14H00 – 16H00**

**Moderated by:** Mohamed Elnour Abdelhafez, Sudan Internet Society

**Rapporteur:** Mohammed Ahmed, Sudan

#### **Panelists**

- Mohammed Ahmed, Sudan
- Ali Abdelgadir, TPRA
- Olusegun Olugbile, CPAA

This Session was composed of three panelists.

The first Panelist was Mr. Mohammed Ahmed from Sudan Police. The e-crime police presentation focus was on the low of e-crime in Sudan and integration between the different authorities. The second Panelist was Mr. Ali Abdelgadir, ICT consultant at Telecommunication and Post Regulatory Authority (TPRA). His presentation tackled the security issue that faces the emerging technologies like IoT and Blockchain and the impact of these technologies on the continent.

Olusegun Olugbile, CEO of Continental Project Affairs Associates made an intervention around the CERTs in the government showing this by taking Nigeria as a Case study. A huge part of the discussion was about the misuse of the national security as reason to restrain the user's right on the internet.

#### **Key Issues Raised:**

- Safe, stable, transparent and sustainable internet.
- The misuse of cybersecurity by the governments.
- The impact of recent technologies such as IoT and Blockchain in the cybersecurity

#### **Recommended Actions:**

Governments, Regulatory, Internet Service Providers and Civil Society Organization should take action as to:

- National Cooperation between stakeholders
- Regional cooperation within the continent
- Enhance cybersecurity framework and strategies by copying the success stories of other states
- Raise the awareness among stakeholders
- Adopt the emergent technologies like the IoT and Blockchain

## ANNEX XII

# KEYWORDS

