13th World Telecommunication/ICT Indicators Symposium (Hiroshima, 2015)

Policy Statements

Colloque de l'UIT sur les Indicateurs des Télécommunications/TIC dans le Monde (WTIS)

Hiroshima, Japon, du 30 novembre au 2 décembre 2015

Déclaration de politique du numérique

Le Gabon est un territoire de 267 667 km^2 situé dans le golfe de Guinée et est enrobé dans le bassin du Congo, limité par des frontières, Nord-Ouest de 350 km avec la Guinée Equatoriale, Nord de 298 km avec le Cameroun et Est de 1903 km avec le Congo et ouvert sur l'océan Atlantique à l'ouest sur 800 km de côtes. La superficie totale du pays est portée à 517 997 km^2 avec les limites de la Zone Economique Exclusive de sa zone maritime qui représente donc 49% de cette superficie. Le reste est constitué de 23 millions d'hectares de forêt équatoriale soit 88% du territoire national qui constitue un atout mondial pour la conservation de la biodiversité.

Son climat est de type équatorial chaud et humide, caractérisé par une chaleur constante, une hydrométrie élevée, des précipitations abondantes et fréquentes. La pluviométrie varie de 1600 à 3000 mm d'eau par an et la température moyenne varie entre 22° et 32° Celsius.

Le Gabon compte 1 802 728 habitants dont 45% a moins de 25 ans pour une densité moyenne de 6,5hab/ km^2. L'éducation de base atteint un taux de scolarisation estimé à 97,50%. La politique de la santé au profit de la mère et de l'enfant a permis le recul de la mortalité maternelle de -39%. De même, la tendance à la propagation du VIH/SIDA est renversée avant la date butoir.

Le Gabon fait face à plusieurs défis majeurs au nombre desquels la pauvreté qui représente 30% des foyers et le chômage élevé qui atteint en moyenne 27% de la population active mais surtout les jeunes.

Le Gabon s'est engagé dans une démarche de gestion durable de ses ressources naturelles entre la conservation pour les générations futures et la qualité de vie d'une part et l'exploitation pour résoudre les défis majeurs de pauvreté et du chômage d'autre part.

Cette démarche est matérialisée par la loi d'orientation sur le développement durable, la loi portant code de l'environnement et le plan national d'affectation du territoire ainsi que par la mise en service de l'Agence Gabonaise d'Etudes et d'Observations Spatiales (AGEOS).

C'est à ce titre que le Gabon a réaffirmé son engagement dans le processus d'élaboration du nouveau programme de développement durable post-2015, en mobilisant plus de 2000 participants pour la consultation nationale.

Cette consultation nationale a dégagé 11 priorités, pour le Gabon, convergentes avec les 17 Objectifs de Développement Durable (ODD) ainsi qu'un certain nombre d'enjeux qui conditionnent la réalisation des ODD dont les deux premiers sont la nécessité de disposer d'indicateurs en tous genres bien élaborés et de statistiques fiables, notamment pour le suivi des ODD. L'ambition de l'Agence Nationale de la Statistique, des Etudes Démographiques, Economiques et Sociales (ANSEDES) qui vient d'être créée est de répondre à ces besoins.

En cohérence avec la position commune de l'Union Africaine, le Gabon mise sur la croissance d'une économie engagée dans une diversification tirée par trois pôles: l'industrialisation à travers une transformation locale, grandissante des matières premières, l'économie verte à travers la conservation de la biodiversité et l'économie des services notamment avec le rôle moteur attendu de l'accélération du développement des TICs.

Le secteur des TIC , qui est le socle du pilier Gabon des services, un des 3 moteurs de croissance du Plan Stratégique Gabon Émergent qui est la déclinaison opérationnelle du projet de société "l'Avenir en confiance" de **son Excellence le Président Ali BONGO ONDIMBA,** a connu ces six dernières années un essor important marqué par l'apparition de plusieurs opérateurs et la mise en œuvre du Plan Gabon Numérique fondé sur le développement d'infrastructures numériques large bande de rang mondial soutenu, avec l'adhésion au câble ACE, par la multiplication par 8 de la connectivité internationale qui est passée de 800 gigabit/s à 6400gigabits/s et le lancement de la construction d'un réseau national en fibre optique interconnecté aux autres pays d'Afrique centrale qui devrait couvrir l'ensemble du pays en un maillage de 6000km.

En 2014, la part de l'économie numérique représentait 5% du PIB. Ce secteur en se développant, offre de plus en plus d'emplois directs et indirects et son chiffre d'affaires s'élève à près de 300 milliards de FCFA. Le taux de pénétration du mobile est de 193 % pour près de 3 000 000 d'abonnés, le taux de pénétration de l'internet est de 86% pour un parc de 1.150 000 abonnés avec une prédominance des abonnés de l'internet.

Grâce au passage à la 3G/4G, les opérateurs mobiles et la Poste développent des offres à destinations des populations telles que le mobile money et le mobile banking et bientôt le e-commerce qui permettent leur inclusion financière et numérique en rendant possible les transferts d'argent et les paiements en ligne notamment des factures d'eau et d'électricité. Avec les projets e Éducation en phase expérimentale et e Santé en phase d'études, les populations mêmes dans les zones rurales vont avoir accès à des offres de formation et de santé de qualité sans qu'elles aient besoin de se déplacer. C'est également l'ambition du projet de villages numériques qui vise à doter grâce aux TIC les 2700 villages du Gabon d'un accès à l'image, au téléphone et à l'internet.

La numérisation de tous les services administratifs des fichiers de l'état civil (acte de naissance, données personnelles, passeport, fichier électoraux), et la mise en place d'un data center administratif augmentent la transparence et la qualité de service rendu aux clients de l'administration. C'est également dans ce cadre qu'il faut situer la mise en œuvre des projets eTaxe ou e Visa.

Le Plan Gabon Numérique, composante du Plan Stratégique Gabon Emergent (PSGE), offre d'importantes potentialités pour l'innovation grâce notamment à la mise en place d'un guichet unique de création d'entreprises, à la création des technopoles, la mise en place d'un réseau d'incubateur, qui constitue un cadre idéal pour préparer les futures générations connectées.

Ces potentialités concernent aussi à la promotion des Petites et Moyennes Entreprises (PME), la mise en place d'un environnement propice à l'innovation, le développement du partenariat public- privé et de la coopération internationale. C'est ainsi que la mise en place de l'**Agence de Promotion des Investissements et des Exportations(APIE),** la mise en place d'un guichet unique, constituent une des actions qui permet d'améliorer le climat des affaires et favoriser l'investissement direct étranger.

Comme on le voit, **le Président Ali BONGO ONDIMBA** considère les TIC comme un puissant levier de croissance mais aussi de transformation sociale; d'ores et déjà, elles participent au Gabon de manière significative à l'amélioration des principaux indicateurs macroéconomiques et au développement de l'activité économique et sociale.

C'est donc avec un intérêt particulier que le Gabon participe à ce 13ième symposium; il y voit une occasion de renforcer ses capacités permettant de saisir les tendances futures du secteur et de bâtir un système de mesures capables de rendre compte de son évolution et d'asseoir des politiques efficaces de développement du secteur.

Pastor NGOUA N'NEME

Ministre de l'Economie Numérique et de la Poste.

Policy Statement

by

Dato' Sri Dr. Sharifah Zarah Syed Ahmad

Secretary General

Ministry of Communications and Multimedia Malaysia

Your Excellency, Mr. Houlin Zhao, Secretary-General of ITU,

Honorable Ministers, Heads of Agencies,

Distinguished delegates, ladies and gentlemen;

It is a pleasure and an honor for me to be here with you today at the 13th World Telecommunication/ICT Indicator Symposium.

1. Sustainable development has been on the global agenda since 1992. Its mutually reinforcing pillars i.e. Economic Development, Social Development and Environmental Protection remain relevant and has been a subject of tireless debate at all levels and in all sectors.

2. With regard to the theme we are discussing today, I believe that the relationship between ICT and the achievement of Sustainable Development goals cannot be under estimated. Thanks to the great job done by statisticians, data collectors and researchers. Your contributions have been very significant in establishing ICT Development Index – IDI.

3. If sustainable development goals are to be achieved, it will require a transformation of the way we do things. Rapid development of ICT based services and systems offer the possibilities for this kind of transformation. Allow me to share with you, Malaysia's experience in leveraging ICT as a driving force to continue our journey towards achieving our vision to be a high income, inclusive and sustainable nation. In the context of our discussion today and based on Malaysian experience, I would like to stress that citizen-centric approach is indeed a prerequisite in bringing about shared outcome of any development project. Collaboration, engagement, consultation and conversation between all related parties in the process of planning, implementing and monitoring are essential in determining the success of any programs undertaken.

4. Fostering citizen-centric approach through:

Connecting the Unconnected

Part of the initiatives that has been planned in Malaysia is programs like Connecting the Unconnected. This is to enable every citizen to have access to basic necessities including the Internet in rural areas. Despite the fact that the broadband penetration rate has achieved 72.2%, there are still gaps in accessing the facilities. To address the gap, the Government has engaged the citizens through various reach out programs to identify the needs. The engagement with the grass roots provides value add inputs that reflect the concern, interest and needs of the locality. We also leverage on the indigenous and tacit knowledge of the grass roots that helped us to strategically plan on the initiatives to be taken. The outcome is awesome. Their need has been satisfactorily fulfilled. Now they get access to information through radios, mobile phones and Internet. Through the connectivity provided, it opens windows of endless possibilities.

MINDA

Another example is a project called MINDA or MIND that is Malaysia Inclusive Digital Nation. The approach that we use for this initiative is Public Private Partnership and also citizenry participation. This program that involved the local operators is to provide the amenities for the Internet. Through this, the local operators gain more users while the citizens get access to all the facilities provided. Another distinct outcome is the increased of both mobile fixed and broadband penetration rates for the country.

e-Rezeki

Crowd sourcing is a process of obtaining needed services, ideas, or content, soliciting contributions from a large group of people, and especially from an online community. Crowd sourcing is powered by the digital technologies that will enable connected communities in the form of employment. From this, we come out with a program called e-Rezeki to connect the B40 communities to digital income opportunities. The strategic location that has been identified to implement the e-Rezeki program will be equipped with ICT facilities and dedicated personnel to assist B40 communities to qualify as digital workers. Again the outcome is amazing. In just a few months, the B40 communities can improve the household income to additional RM500/month.

e-Usahawan

It is a program that mainstream digital entrepreneurship into vocational schools and institutions. Currently this program has a captive community of mainstream grass roots that include 270,000 full-time students, 300,000

part-time community members, 15 public TVET agencies and 463 centers nationwide. Among the success stories are, a young lecturer who created her own website and Facebook product page managed to earned an extra income of RM700/month while an 18 years old student earned RM94,000 in three months after advertised his air conditioning repair services online.

Get Malaysian Business Online
Under a specific grant scheme, a seaweed collector in Sabah has drastically become an entrepreneur by promoting seaweeds online. This success story reflects the role of ICT in changing people's life.

Big Data Analytics: Data driven digital economy.
Malaysia aims to be a leading regional BDA solution hub. We are creating a national BDA ecosystem to enable the proliferation of use of BDA as a catalyst for further economic growth through galvanizing mindset, developing people and talent, establishing data governance and policy and promoting industry driven open innovation. In achieving this, Malaysia focuses on 3 strategic imperatives i.e. development of data scientist, unlocking the value of government's open data. Some of BDA solutions developed are extreme weather projection and visualization, sustainable budget and optimization of the nations financial health, dengue hotspot prediction, smart manufacturing, increased bank revenue via customer spending behavior analysis and increased retail revenue.

Internet of Things or IoT: Solving problems and capturing value.
The potential global impact of IoT will rise up to USD11 trillion. Malaysia has announced the National IoT Strategic Roadmap aimed at creating a national IoT ecosystem. Our short-term strategies include the transformation of SMEs and alignment with existing initiative. While the game changing strategies include the establishment of IoT Malaysia, open innovation framework and open community data framework.

Flood Management System
Malaysia has mobilized integrated database for the purpose of developing flood management system by gathering and involving all stakeholders from various ministries, departments, NGOs and the flood victims. The Blue Ocean Strategy has been used to derive the data from various sources. The outcome is high impact, low cost and rapid execution. The development of this database has assisted the communities and the authorities to be more proactive in flood management.

The above stories are undoubtedly present great challenge as well as opportunity facing statistical sciences/statistical fraternity. It introduces a new set of issue that should be taken seriously including a problem of scale, time pressure, different kinds of data, privacy and confidentiality, reinventing the wheel, quality of data and emerging of data scientist.

Therefore, statisticians need not only to chart a new course of action, but also need to reach out to communities and the target groups at all levels. They should be able to tap the tacit knowledge of the communities, co-create and co-produce to ensure the reliability, accuracy and the optimum use of the data. This multiple helix approach that brings every group together will help to ensure an informed decision-making and a sense of ownership.

In conclusion, ICT and digital development must be given a human face because ICT is about people. Social inclusion and social innovation will help to improve people's life and create a sense of ownership and belongings. This will in turn ease the implementation of any projects and programs for the communities. Digital gap goes hand in hand with the phenomenon of poverty, vulnerability and insecurity. The opportunities provided by ICT and digital world must not continue to be in the hands of the privileged ones. Gender digital divide must be addressed because ICT empowers more women to gain new economic and social opportunities.

Finally, I would like to take this opportunity to congratulate the Ministry for ICT Japan and Ministry for Internal Affairs and Communication Japan for hosting this WTIS-15.

I would also like to congratulate the ITU on its 150th birthday this year.

Thank you.

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POLICY STATEMENT: TOPIC: ICT AS A DRIVER OF SUSTAINABLE DEVELOPMENT
HONOURABLE TJEKERO TWEYA: MINISTER OF INFORMATION AND COMMUNICATION TECHNOLOGY

What is the role of ICT in achieving sustainable development goals including in areas such as poverty reduction, education, economic growth or inclusive societies?

ICT plays a very important role in achieving sustainable economic development goals through the availability and accessibility of many essential ICT services. Through the use of ICT many rural people are now able to access important information and are informed on important issues affecting their everyday activities on agriculture, social welfare , health and education among others through the use of ICT .

With the introduction of e – governance, significant strides has been made in many areas of government service delivery such as the enhancement of the Integrated Financial Management System , speedy processing of passports and Visas and real time border control among others.

The Namibian Government with its 2, 3 million population continues to bear testimony of integrating ICTs into the lives of many of its citizens by introducing , the use of

Electronic Voting Machine (EVM) system . With the just ended elections, voters used the EVMs for the second time.
The usage of EVMs allows a country to have a reliable data base of voters, minimises long queues and speeds up the process of counting votes and with no human interference.

How can ICT drive innovation and entrepreneurship? What are the requirements and preconditions for unlocking the potential of ICT for innovation, and what is the role of businesses and the public sector?

ICT has been declared a priority by the Government of the Republic of Namibia and that has been cemented by the creation of the Ministry of Information and Communication Technology (MICT) in 2008 to lay the foundation for the accelerated use and development of ICT in Namibia, and coordinate information management within Government.

In the past and present National Development Plans (NDPs) appropriate programs and projects have been developed and implemented that ensure that Namibia benefits from advances made in ICT. Namibia's Fourth National Development Plan (NDP4) 2017, commits that adequate ICT infrastructure will be in place to facilitate economic development and competitiveness through innovation, research and development. To this end the ICT Sector developed its Five year Sectoral Plan which is cascaded into Annual Sectoral Plans.

The Namibian Government established the National Commission on Research, Science and Technology (NCRST) to co-ordinate, monitoring and supervise research, science and technology in Namibia. Once in every three years, NCRST develops a National Programme on Research, Science, Technology and Innovation (RSTI) addressing challenges in the national innovation system (NIS) by devising appropriate interventions to improve on the RSTI enabling framework in the policy areas, human resources and institutional framework, as essential tools for addressing needs in the basic enablers and economic priority set out in the NDP4.

The Namibian government in its Fourth National Development Plan (NDP4) commits to increase Research and Development spending to at least 0.3% of the GDP which roughly translates into N$ 300million annually.

What data are required to monitor sustainable development, growth and innovation?

Namibia is at an advanced stage of implementing the Scan-ICT programme aimed at identify ICT indicators and build capacity to measure Information Communication for Development (ICT4). The programme is implemented with a view of harnessing ICTs for development in order to measure the impact of ICTs on various sectors of the economy and the people at large. The central scan-ICT portal /database in place will support the policy development and implementation process, with ICTs forming an integral part of the country's vision.

ICT statistical data are critical for identifying areas where governments can use ICT to improve and implement their development strategies. Quality data can help them define strategies for E-government and e-business. They also help governments monitor their own policies and draw comparisons with other countries.

WTIS-2015: MINISTERIAL ROUNDTABLE POLICY STATEMENT

Dr Win B.J. Mlambo, Zimbabwean Deputy Minister of ICT, Postal and Courier Services
The Prince Grand Hotel, Hiroshima, Japan
30 Nov-2 Dec 2015

1. Introduction

On many occasions, people think about complicated ICT solutions where simple ones are the answer, at least for the beginning. Speakers come up with intricate theories which end up confusing those who are searching for answers to their socio-economic challenges in their respective countries. As the cycle repeats, a state of resignation sets in the minds of solution seekers. A lot of valuable time is lost as a result, and target beneficiaries of ICT innovations like marginalised communities, people with disabilities, entrepreneurs, Small and Medium Enterprises (SMEs) and big businesses suffer delays in getting reprieve.

The same observation is made in cases of research, where delays in conducting research in an identified ICT field causes loss of valuable time with consequent loss of market position, competitiveness and intellectual right. Some solution providers do not seem to seek an understanding of the needs of the communities for whom the solutions are being designed, or the appropriateness of the ICT solutions to the communities' socio-economic challenges. In the end, the ICT solutions become a misfit. Thinking big but acting small and timely at the beginning is the answer.

In addressing the three discussion topics below, my comments shall lean heavily on circumstances prevailing in Developing Countries like Zimbabwe, whose conditions are obviously different from those in Developed Economies.

A lot of information has already been collected about the role of ICT in sustainable development and its prowess to provoke the subtle innovative potential into new inventions that lead to wealth creation. While more information is always welcome, we need to synthesise what we already have into applicable and implementable knowledge and wisdom. This entails conducting research that lead to new inventions now than later. Timing is of essence in commercialising patentable innovations. It is advisable not to continuously chase the illusive hope that better information to build enough confidence to start implementation will come from the next conference or seminar. What comes out of the next symposium is more information and confusion rather than incentive to commence implementation.

2. Discussion Topics

(a) What is the role of ICT in achieving sustainable development goals including in areas such as poverty reduction, education, economic growth or inclusive societies?

The world has already witnessed ICTs and the Internet having a major impact on economic and social development. The Internet, in particular, has become a critical enabler of economic and social change, transforming how Government, business and citizens interact and offer new ways of addressing development challenges. ICTs, therefore, can support the delivery of the SDGs. Since the Sustainable Development Goals (SDGs) have now been formally agreed and translated into practical measures (Targets) that will support their implementation, the UN Agencies (UNCTAD, UNESCO

and ITU) have already begun identifying synergies between SDGs and WSIS Action Lines. In this context therefore, ICTs are enablers to achieving SDG1 (Poverty Reduction); SGD4 (Quality Education); SG8 (Decent Education and Economic Growth) and SDG10 (Reduced Inequalities).

ICTs enable the design of solutions that can be employed to save money and time and alleviate poverty. For example, in Zimbabwe, pensioners travel to town and urban centres to collect their monthly pay-outs. In some cases, after subtracting the amount of money each one of them requires for the round trip like $12, leaves a small take home amount like $3.00. If the pensioner tries to have some food during the day, he takes home nothing, or has to borrow more money in order for him/her to return home! There are cases where the transport expense is more that the pension pay-outs. The same is observed in re-charging electricity, where the re-charge amount is very small compared to the transport cost to travel to a re-charge point. Consequently, some people decide to abandon the pension pay-outs or in the case of electricity, resign to stay in darkness.

A simple ICT solution of creating an agency in each locality which is accessible on foot by the households in that locality is the simple answer. But more importantly, such an ICT solution is sustainable because it does not require other interventions that may lead to the collapse of the arrangement and disadvantage the communities.

In Zimbabwe the greatest collective contributor to the staple food are communal farmers, who after harvesting their maize, deliver it to the Grain Marketing Board and then wait for payment from the same organisations, with depots at specific locations around the country. The farmers can be paid through mobile money systems to prevent them from travelling to set payment centres, thereby increasing their profit margins.

A number of people who need services do not have money to buy mobile phones, and yet they also require mobile money services like receiving money from relatives in urban centres and abroad in the diaspora. This gap be can be addressed by setting up *"virtual mobile phones"*, for the purposes of receiving money, where one phone can have a database of unique numbers identified with the households in the community. The receiving agent can then arrange to *"deliver"* the money received by the agent to the relevant unique number in that community.

In summary therefore, in Zimbabwe, in order to adapt ICTs to avert the risk of exacerbating existing digital divides, it is pertinent to interrogate cost drivers for network expansion so as to facilitate faster and cheaper service roll-out to all areas. This may be possible with increased injection of funds into, and utilization of, the Universal Services Fund to assist network expansion in rural areas. Use of satellite technology, particularly the KA band, where it would take long to 'bury fiber', will be considered. Here is where innovation comes up with solutions to improve on inclusion. However, caution should be taken not to introduce inappropriate technologies, as some communication devices may not appropriate to certain communities.

(b) (i) How can ICT drive innovation and entrepreneurship?

As mentioned in the introductory paragraph that ICT solution providers must endeavour to understand ICT solutions needed by communities rather than think for them and impose on them unworkable and confusing ones. If this basic guideline is followed, the

new business opportunities that can be unlocked by the resultant innovations are immense. For example, the young people spend most of their time on the mobile phones on social media. They enjoy the multiplicity and complexity of the APPS on the mobile. Young people have plenty of time in their lives to do that. Besides, they use the gadgets to play and learn at the same time.

By comparison, the old rural folk need a simple and robust mobile phone that can withstand the rough environment and handling it can be subjected to by its old handlers. For this to be more meaningful, not many APPs are required but just only one or two to avoid confusion in their use. In general, the old rural folk who are the bread winners do not need smart phones, but simple phones that can receive and send money; receive and send calls. In this vein, an innovator can come up with a small mobile handset with one APP on it, but one that is waterproof and can withstand hot weather and dusty environments. Because of its simplicity, the small phone can be priced low, hence affordable and available to the rural folk. This can yield immense downstream benefits through inclusion of the rural folk in the mainstream economy of the country. At the same time, the innovator of the small phone stands to benefit from the small phone innovation.

The same concept can be proffered to health delivery in the rural areas where the doctor to patient ratio is very low. A workable and practical ICT solution in this case may entail providing clinics and hospitals with simple mobile phones loaded with medical databases and only one APP suitable for nurses. The nurse can consult the mobile phone when attending to patients, including complicated medical cases which require a doctor. Through this way, health delivery services could be enhanced and mortality rates improved, and yet the solution adopted is simple. It is after such rudimentary strategies have worked that better, expensive, more elaborate versions of tele-medicine can be implemented in extending the boundary of medicine or health care.

In rural areas where electricity is unavailable or erratic, some innovative ideas of re-charging phones using solar power and any mechanical device can be invented, leading to more generation of wealth by the inventors. In the same vein, ICT gadgets suitable for use by the deaf, dumb and blind can be invented if people are given the motivation, incentives and funding.

The above examples revolve around the concept of taking service to the people rather than people visiting service centres, as is currently the prevalent practice. The approach is people-centric, simple and easy to implement with observable impact in terms of service accessibility, affordability and the inclusion of marginalised communities in the mainstream economy. This can go a long way in bridging the digital divide between gap between the urban dwellers and the rural folk.

On the eve of travelling to Hiroshima for the WTIS-15, the writer of this paper asked a guy called Tafadzwa Nyamuzihwa, what his expectations were from the ICT industry and the Ministry. *His response, which is appended to the end of this statement, captured the views expressed herein, also captured the wrong assumptions about the target users of new equipment or innovations which are generally made by solution designers.*

(ii) What are the requirements and preconditions for unlocking the potential of ICT for innovation, and what is the role of businesses and the public sector?

There is a correlation between the level of ICT access and use and its potential in driving development. Low ICT access and use is linked to the reduction of the extent to which people can use the Internet to achieve the SDGs. It is not enough, however, to place ICTs onto the Development Agenda without also addressing other critical elements of the development equation. A nation's regulatory environment in particular can have a profound impact on ICT utilization and ICT industry growth. There is need for periodic and active engagement between policymakers and ICT users and the industry on a range of ICT policy issues that affect users and the industry, including such issues as property rights, international trade and investment, competition, publicly funded research, online security and privacy, technology standards, e-Government, education and digital literacy, ICT skills development, affordable financing, incentives for private-sector ICT investment, and telecommunication infrastructure and access.

It is of paramount importance to overcome the inertia of commencing new research and driving out the fear that the research may lead to failure in order to delve meaningfully and confidently into ICT research. Creation of incentives and rewards, relaxation of prohibitive legal *"irritants"* are additional pre-requisites for ICT innovations. After all this has been satisfied, availability of funds to break new grounds is a must.

But perhaps the strongest driver in unlocking the ICT potential is the researcher's mental disposition towards innovation. This requires a paradigm shift in approaching creation of knowledge and wealth for humanity. An idea must be geminated small at a microcosmic level. Consistent with *Peter Drucker's* advice, *"Big thoughts are fun to romanticize, but it's many small insights coming together that bring big ideas into the world."* Indeed, better and more information will emerge from the subsequent seminars. But a wise researcher uses such new information which is subsumed from attending many subsequent workshops, conferences and symposia, to panel beat a research already underway. The approach will hasten the creation of the new ICT invention, patent it ahead of competitors, use it to create wealth for the entrepreneur, use it to bring services and conveniences to communities and develop society. The ICT creation must be one that has observable impact by the target societal groups.

Businesses can create funds for Research and Development for Innovation and Commercialisation. For example, in Zimbabwe, a fund for Young Innovators is being set up to support young people, technical institutions and universities in coming up with new ICT inventions. Injections into the fund will come from a partnership of willing businesses, network operators and Government through Public Private Partnerships.

(c) *What data are required to monitor sustainable development, growth and innovation?*

Assumptions behind global indicators and indices currently reflect the political economy of mature economies and democracies of the North. Very different access and use trajectories in the Global South make some standard indicators meaningless and others very difficult to gather. In the Post-2015 period, there should be a deliberate effort to address the appropriateness and relevance of indicators to take into account the different levels of development. Focus should also be directed at statistics pertaining to society as a whole i.e. Development indicators relating to the rate of population change, standard of living, investment and technology development.

Currently, the UN Statistics Division is surveying National Statistical Offices to ascertain the availability of data for possible SDG indicators. Both existing and new data systems will require continuous strengthening over coming years, and many aspects of a comprehensive SDG monitoring system can only be implemented over several years. However, important decisions will need to be taken soon as the world is to start implementing the Goals in 2016. Different levels of review have been suggested - Indicators will be the backbone of monitoring the SDGs at local, national, regional and global levels. They will serve as a management tools for governments to develop, strategies, allocate resources and monitor progress effectively and efficiently as well as ensure the accountability of Governments and other stakeholders for achieving the SDGs.

Regarding Zimbabwe, and to approach the matter in a more practical and simple manner, the specific barometers that can be used to measure the impact of ICTs solutions can include

- proportion of population below USD1.25 per day
- proportion of population living below national poverty line
- differentiated by urban and rural
- proportion of population below minimum level of dietary energy consumption
- maternal mortality ratio
- neonatal, infant, and under-five years mortality rates
- primary school completion rates for girls and boys
- new socio-economic activities
- reduced mortality rates
- increased connectivity
- monetary movements and number of mobile phones
- new services and infrastructures

3. Conclusion

ICTs have brought new opportunities to people of all ages and in all countries including Zimbabwe, enabling them to achieve more in less time and to discover new ways of communicating and relaxing. The use of ICTs has fuelled astounding productivity and economic growth and has truly transformed the way people work, learn, and socialize. To date, however, the benefits of ICTs have not been spread as equally as one would have hoped. This has led some to question whether ICTs have a meaningful role to play in bridging the divide between developed and developing countries. While it is unrealistic to believe that ICTs alone can provide the solution that will solve the challenges facing the international development community, we firmly believe that ICTs hold tremendous untapped potential as an enabler of development. We also recognize that addressing the needs of underserved populations will require commitment and determination by both the public and private sectors. We are convinced that by working together, governments, industry, and the populations they serve can create new opportunities and leverage the power of ICTs to help people everywhere realize their full potential.

ANNEX 1

WHAT THE ICT SECTOR NEEDS TO DO FOR PEOPLE WITH DISABILITIES

(From the eyes of a blind man ……. Tafadzwa Nyamuzihwa)
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ICT is the key to accessibility and independence. ICT is the key to accessibility of information and therefore empowerment of individuals and corporates. The world today has been taken over by technology which is a great thing to all people. Now when you look at the ICT sector, people with disabilities are a disadvantaged group within the society. If you look at the first world countries people with disabilities have access to different technologies appropriate to people with disabilities because new innovations were created because of the availability of funding from government grants and sponsorship from different stakeholders. So the pupils in the developed world literary have access to 95% of different ICT resources.

We look at the developing world and access to ICT. Technology is being released to the market every day with different models. These products are either not disability friendly to different groups with disabilities or they are beyond the reach of many disabled pupils. E.g. the blind would use the Nokia E72, E5, E63, not because it was user friendly since the features in it were not accessible but because then handsets would enable the blind to install a voice over. That aspect could assist a blind person to navigate the phone. But alas, those phones have been withdrawn from the market and replaced by smart phones with advanced features and APPs, including touch screen phone capabilities.

The best phone a blind person can use is an i-phone. But how many blind people can afford one? The world has become digital, a great development indeed because it enables one to be able to communicate like compiling this document and subsequently sending it to you. But I'm totally blind. Therefore technology gives access to information, privacy and empowerment. How many deaf, blind, physical disabled people have been denied access to information, education, independence and privacy due to lack to access of technology.

ICT policies need to be put in place and then implemented. At country level, policies need to be put in place in order for disabilities to access information using appropriate ICTs. E.g, every Internet café in the country needs to have a computer for people with disabilities in order for them to get a license to operate. By 2018 all learning institutions should have 5 computers for people with disabilities in order for such people to enroll. Companies around the world who design technology need to be told that any new product must have features that can be used by people with disabilities before it goes onto the market.

This allows the people with disabilities to make choices. Infrastructure like hotels need to have voice in escalators with buttons giving a voice output. In addition, they shouldn't be too high that one in a wheelchair is not able to reach the access buttons. The same can be said about conveniences for people with other forms of disabilities like without legs and arms.

Governments need to also have duty free on all ICT products purchased by pupils with disabilities this is to enable them to have access to these resources ICT has become the backbone to an independent living. Access to information and privacy but this can be only achieved if we all come together to draft clear policies that enable ICT and pupils with

disabilities. When drafting these policies the pupils themselves with disabilities need to be involved to ensure clear policies are drafted!