THE REPUBLIC OF UGANDA

MINISTRY OF INFORMATION, COMMUNICATIONS TECHNOLOGY & NATIONAL GUIDANCE

THE NATIONAL BROADBAND POLICY

September 2018

FOREWORD

The Government of Uganda recognizes Information Communication Technologies (ICTs) as important drivers of Socio-economic transformation. The ICT Sector is also identified in the National Development Plan II as one of the Job creation sectors.

In order to support and scale up ICT services from both the demand and supply side, government and private operators must coordinate in the development and deployment of broadband infrastructure so as to enable connectivity for all, digital inclusion and affordability. This Policy places the development of broadband infrastructure among the core priorities of developing any public utility goods like water, transport, railways etc. When Broadband infrastructure is jointly developed and shared, costs of ICT services become affordable.

This Policy also identifies other forms of Broadband Infrastructure in addition to the most commonly preferred – the optic fibre. Identification of the correct technology mix for broadband infrastructure helps complementarily and achieving of last mile connectivity. When optic fibre can't be deployed, satellite or microwave will be deployed and hence guaranteeing universal connectivity and reliability.

The Policy once implemented will significantly contribute to job creation, new business opportunities, house hold incomes and general welfare.

I therefore, urge all stakeholders to embrace its implementation.

Frank K. Tumwebaze

MINISTER OF ICT & NATIONAL GUIDANCE

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

ACRONYMS

AIMS	Academic Information Management System
BB	BroadBand
BPO	Business Process Outsourcing
BTS	Base Transceiver Station
CCTLD	Country Code Top Level Domain
CDNs	Content Delivery Networks
CDR	Call Detail Records
CEMAS	Computerized Education Management and Accounting System
CMSA	Capital Markets and Securities Authority
DCIC	Directorate of Citizenship and Immigration Control
DRC	Democratic Republic of Congo
E-GP	Electronic Government Procurement
FTTH/FTTX	Fibre to the home/premises
GDP	Gross Domestic Product
HCM	Human Capital Management System
IBS	in-building solutions
ICT	Information and Communications Technology
IFMS	Integrated Financial Management System
IPOs	Initial Public Offering
ISP	Internet Service Provider
IT	Information Technology
ITU	International Telecommunications Union
IXP	Internet Exchange Point
JLOS	Justice, Law and Order
KCCA	Kampala Capital City Authority
LGs	Local Governments
MDAs	Ministries Departments Agencies
MoFPED	Ministry of Finance, Planning and Economic Development
MSCI	Morgan Stanley Capital International
NBI	National Backbone Infrastructure
NCA	National Communications Authority
NDP	National Development Plan

RCDF	Rural Community Development Fund
OFC	Optic Fiber Cable
TCO	Total Cost of Ownership
UCC	Uganda Communications Commission
UETCL	Uganda Electricity Transmission Company Limited

1.0 INTRODUCTION

1.1 BACKGROUND TO THE POLICY FORMULATION

The Broadband Policy seeks to achieve the aspirations of the Uganda Vision 2040 by supporting the objectives of the National Development Plan (NDP II) whose theme is "Strengthening Uganda's Competitiveness for Sustainable wealth creation, employment and inclusive growth". The policy emphasizes the role of broadband internet in the socio-economic transformation process as a critical enabler.

In recent past, the increasing adoption of digitisation in every sector as a way of conducting business has necessitated having a high-speed, reliable (robust), and universal internet connectivity. At the onset of the Internet revolution, governments did not envisage the critical role that internet would play as a factor of production. It was only seen as another form of technology for advanced communications and therefore not much attention and priority was given to the planning and development of its infrastructure. Today, broadband Internet is a key enabler just like transport, electricity, water and other public utilities. ***This, therefore, calls for high speed internet (Broadband) infrastructure to be defined and planned for, like any other public good (roads, railways, oil pipeline, power lines).***

However, development and deployment of Broadband infrastructure across the country has become a major challenge to the ICT sector for lack of a policy framework that guides planning, development and deployment, by both government and private sector. As a result, this has led to duplication of infrastructure; translating into high cost of broadband internet, and therefore denying access to e-government service to most citizens. Like electricity and other basic utilities, broadband will be the foundation for economic growth, job creation, global competitiveness and a better way of life as the need for digital transformation in every sector becomes the stimulus for growth. As the country aspires to advance its science/ technological innovations and take all its services online (digitalisation), to improve efficiency, eliminate corruption and reduce the cost of doing business for the citizens, a reliable and affordable broadband connectivity becomes a critical enabler. Thus the need to plan and invest in the right broadband infrastructure becomes critical. Additionally, the growth of handheld computing devices like smartphones, along with

improvements in mobile infrastructure, will assist the growth of e-commerce. It is, therefore, necessary to prioritize broadband infrastructure among other public utility infrastructure plans (water, transport and energy), and mainstream it into all sectors of the economy.

When there is full and reliable connectivity, citizens will no longer waste time and money to travel long distances for accessing government services. Citizens will be accessing these services over their electronic and internet enabled devices irrespective of their geographical location.

1.2   SITUATION ANALYSIS

The National Development Plan (NDP) II whose theme is "*Strengthening Uganda's Competitiveness for Sustainable wealth creation, Employment and inclusive growth*" emphasizes the role of Information and Communication Technology (ICT) sector in the national development process. ICT is recognised as both an opportunity and an enabler. The following targets and objectives are outlined in the NDPII for the ICT sector:

- Increase ICT contribution to Government revenue from 8.1 percent in 2012/13 to 10 percent in 2020.
- Increase employment in the ICT sector from 1 million to 3 million people in 2020.
- Improve Uganda's ICT development index by increasing access to ICT infrastructure from 1.96 (2012 Index) to 3.5 (2020 Index); Improving usage of ICT from 0.75 (2012 Index) to 2.5 (2020 Index); and enhance ICT skills development from 3.69 (2012 Index) to 5.5 (2020 Index).
- Increase access to ICT infrastructure to facilitate exploitation of the development priorities.
- Enhance the usage and application of ICT services in business and service delivery.
- Increase job creation through ICT research and development.
- Increase the stock of ICT skilled and industry ready workforce.
- Improve the information security system to be secure, reliable, resilient and capable of responding to cyber security threats.
- Improve the legal and regulatory frameworks to respond to the industry needs.

Uganda Vision 2040 underscores the need for Uganda to re-orient itself to make ICT as the main driver of economic growth. For these targets to be realised, the sector must formulate enabling policies that will guide not only the development of ICTs but also the foundations on which ICTs stand. That foundation is **'Connectivity for all'** to bring about affordability and digital inclusion.

When there is full and reliable connectivity, citizens will no longer waste time and money to travel long distances for accessing government services. They will be accessing these services over their mobile devices, irrespective of their geographical location. E-governance is also evolving as technology advances. Each sector of the government needs to have digital milestones to achieve. For example, the Ministry of Education must adopt e-learning (e-education) and come up with innovative ways of packing and delivering, learning and instruction materials/content to the pupils/students and teachers across all barriers of physical space (rural/urban divide). The judiciary, in the dispensation of justice, must adopt e-courts to enable e-filing and scheduling of cases/hearings. The financial sector must adopt e-commerce and move towards a cashless economy (mobile money, m-banking, e-wallets etc.). The health sector must adopt e-health (tele-medicine, online prescription and consultations etc.) Similarly, other sectors like transport and agriculture must adopt e-transport and e-agriculture respectively.

Mobile e-commerce is also one of the sunrise areas today and the industry is offering more digital channels for e-retailers to reach varied audiences. The growth of smartphones, along with improvements in mobile infrastructure, will assist the growth of e-commerce. The enabling foundation, for all these services is Broadband connectivity and the infrastructure on which it can be universally delivered. Like telephony and broadcasting, Broadband connectivity expands our ability to transact, innovate solutions for the market, communicate, inform and entertain. It is an all-round enabler for all sectors. The eco-system of the Broad Band is driven by high speed networks; services; applications and users as depicted in figure 1.1 below:
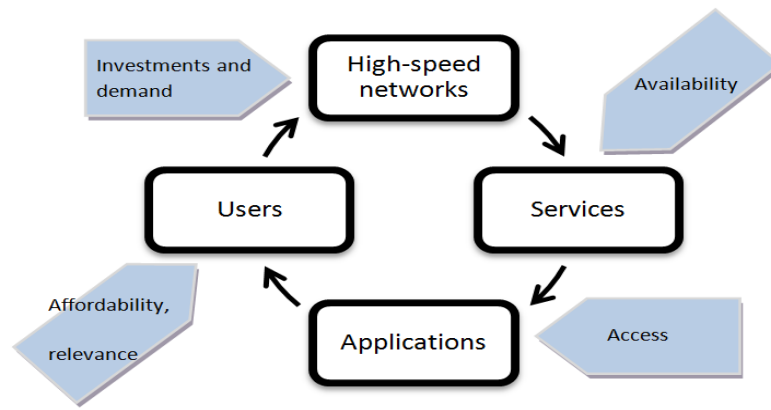
Figure 1.1: Eco-system of Broadband

1.2.1 Current Broadband Status

E-Services

The Government of Uganda is making progress in ensuring automation of service delivery for Ministries, Departments and Agencies (MDAs) and Local Governments. ICTs have enabled MDA/LGs to accelerate the use of websites as tools for dissemination of information and service provision. To date, **two hundred forty eight (248) websites** have been developed across Government MDA/LGs. Relatedly, approximately two hundred ninety seven **(297) systems/ applications** are in use across MDAs/LGs to promote internal efficiencies and support provision of Services to the public.

Table 1.1 below provides the ranking of the top twenty MDA/LG services accessed via the e-Citizens Portal. (www.ecitizen.go.ug). It can be seen that though 297 application services are on-line there is no substantial usage of any of these services except for Uganda Revenue Authority. This is on account of 'No' and or poor/unreliable broadband connectivity.

Table 1.1: List of 20 most used e-services on the Citizen's Portal

	MDA E-SERVICES USAGE RANKING	
	MDA Service	**Total Traffic**
1	E-services (Uganda Revenue Authority)	24,689
2	National Supplier Database (Petroleum-authority-Uganda)	1,947
3	Self-Service (NSSF)	1,705
4	Uganda System Electronic Open data records (KCCA and OPM)	976
5	E-immigration-system (DCIC)	909
6	E-services (Uganda Registration Services Bureau)	904
7	E-services (Uganda National Education Board)	348
8	Voter-locator (Electoral Commission)	274
9	eciti-online-payment-platform (Kampala Capital City Authority)	251
10	Employee Supplier-E-Registration (MOFPED)	251
11	Student Loan Scheme (Higher-education-students'-financing-board)	190
12	E-services (National Water-and Sewerage Corporation)	179
13	online-licensing services (Insurance Regulatory Authority)	173
16	Mortgages and property search (national-housing-and-construction-company-ltd)	104
14	E-Services (Uganda Police Force)	102
15	E-Services (Judiciary)	97
17	E-Services (UMEME)	84
18	Online Services (Public Procurement and Disposal Authority)	77
19	Business Registration and search (URSB)	73
20	E-Biz (Uganda Investment Authority)	69

Some of the key management systems that are currently in use in the government are shown in table 1.2 below:-

Table 1.2: Key management systems used in government supported by broadband connectivity.

FUNCTION	CENTRALIZED SYSTEM	DESCRIPTION
Financial Management (Public Funds)	**The Integrated Financial Management System (IFMS)** implemented by the Ministry of Finance, Planning and Economic Development (MoFPED)	This has been rolled out to 102 LG sites, 75 central government sites, 12 referral hospitals, 12 Public Universities and Self Accounting Tertiary Institutions (PUSATIs) and 35 missions.

Budget Management (Public Funds)	Program Budgeting System (PBS) implemented by the Ministry of Finance, Planning and Economic Development (MoFPED)	PBS has been rolled out to 142 central Government votes (MDAs) and 160 Local Government votes.
Human Resource Management	The Human Capital Management System (HCM) being developed by Ministry of Public Service	The HCM which is still under development is envisaged to be piloted in sixty (60) MDA/LGs by December 2018 and rolled out to the whole of Government.
Academic Information Management	The Academic Information Management System (AIMS) being developed under the Ministry of ICT &National Guidance	Recommended by the Ministry of ICT and National Guidance as the preferred education management system for PUSATIs replacing CEMAS. It has been rolled out in Kyambogo University, Mbarara University, Makerere University and Makerere University Business School. It will be rolled out in all PUSATIs by the end of FY 18/19.
Distribution of Agro Input Subsidies	Electronic Voucher System (E-Voucher) being developed by the Ministry of Agriculture.	E-Voucher is currently being implemented by the Ministry of Agriculture and can also be reused across other sectors such as Health, JLOS, and Education etc. This projcet is targeted to reach 450,000 farm households and will provide farmers with access to subsdised agro-inputs of maize and beans seeds, cassava cuttings, rice and coffee seedlings, fertilizers, pest control chemicals and post-harvest handling materials.
Project Performance Monitoring	Prime Minister's Integrated Management Information System (PIMIS) developed by Office of the Prime Minister	PIMIS will monitor performance of money provided for Gov't projects and their outcomes. It has been rolled out in OPM, Ministry of Energy and the Ministry of Health
Shared Services Platforms	Online Government Procurement (E-GP)	This system will automate the entire End to End procurement process in Government. It will be piloted in 10 entities in the pilot phase.
	Unified Messaging and Communications (UMCS)	This service will offer email, instant messaging, VOIP functionalities and other communication services for Government MDA/LGs. It is currently being piloted for 3,000 users and will be rolled out across the whole of Government.
	National Payment Gateway	This will enable seamless, affordable payment for Government services using multiple channels. The payment gateway will be operational before end of FY 17/18.
	National SMS Gateway	The SMS gateway will offer cheaper USSD services, SMS broadcasts and other SMS services for Government services.

Internet Connections

Towards the end of September 2017, there were 162,850 fixed narrowband (internet) connections, which had grown from 35,000 connections in December 2010 (see Figure 2.2) (Source: UCC). The wired internet adoption in Uganda has increased steadily over the past few years and this can be attributed to increased deployment of optic fibre by both the government and the private sector. This however, is still far below the global average in terms of fixed internet penetration. Uganda currently, ranks 153rd in the world[1] for fixed internet penetration with only 3 per 1000 inhabitants having access to fixed internet.

Yet, for most, if not all business outfits, industries, research/ academic institutions, IT/Innovation hubs (BPO), ICT and industrial parks require dedicated fixed internet. The shared mobile (wireless) internet has also increased from just 605,000 in Dec 2010 to 14.8 million in Aug 2017 (see Figure 2.2) (Source: UCC). The shared mobile internet grew as the number of mobile subscriptions increased, which can offer low internet speeds. While shared mobile internet can easily be accessed by anybody with a mobile device/subscriber, it can only serve limited personal use (domestic) like communication, social networking and video access. It cannot power commercial high bandwidth applications, which are the most desired ones for economic growth.
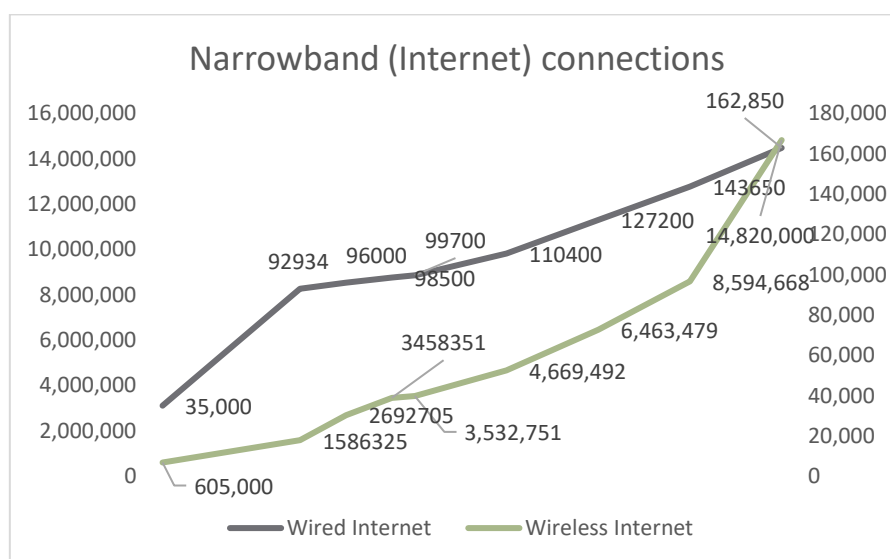

Figure 1.2: Internet Growth in Uganda

[1] ITU Report 2017

Hence, dedicated internet accessed through fixed or wireless connections (FTTH, FTTx, Satellite etc.) is the required option for commercial establishments. Even if mobile internet, which is widely used by most mobile phone users / subscribers was to be heavily subsidised and sold cheaply by the service providers for purposes of expanding their market share, as they are currently doing, because of competition, it would not translate into cheaper broadband for commercial establishments and could largely provide narrowband or low speed internets to customers. Hence, for reliable cost effective high speed internet access, wired internet is more acceptable for commercial establishments. Also, in order to achieve broadband access speeds of 30Mbps per household in urban areas (as envisaged in NDPII), extensive fibre network not only in the backhaul but also in the last mile (Fibre-to-the Home) are required to be built, which will be used by various business establishments. As per the State of the Broadband[2] report of Broadband Commission, ITU, of September 2016, Uganda has 18.31 per cent Internet user penetration and is ranked 135th.

Uganda's ICT sector has considerably been liberalized from a few state monopolies, which were struggling to deliver services to the nation, to several private sector service providers in a very dynamic and competitive environment. The sector provides two broad functions, ICT Infrastructure and ICT services, under the following subsectors; Telecommunications, Postal & courier services, Broadcasting, Information Technology and value added services like Mobile financial services. Private Telecom Network Operators and ISPs are the primary service providers. In addition to the Private sector, Government has also substantially invested in the development of the National Backbone Infrastructure (NBI) Optic Fiber network and also extended ICT services through various interventions like Rural Communications Development Fund (RCDF) in community schools.

The sector has registered impressive growth in the recent past, with many more citizens getting access to ICT services like Telephony, Internet, Radio,

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[2] State of the Broadband Report – Sep 2016 by Broadband Commission, ITU

Television and mobile based services. The ICT sector's contribution to economic growth in terms of share of GDP stood at 2.5% in 2015. It is estimated that the sector employs over 2 million people (with direct employment of about 1 million) and particularly the sector has a significant number of the youth engaged in activities like ICT hubs, resale of value added services, and ICT innovation that are providing youth employment. Revenue collection (VAT, PAYE and Excise Duty) from telecom companies amounted to UGX 523,121 million in FY 2016/17 when compared to UGX 214,841 million in 2009/2010. However, with the acquisition of the Intelligent Network Monitoring System that followed the guidance by H.E the president on the need for government to independently monitor Call Detail Records (CDR) of Telecom operators, the revenues are expected to grow exponentially. However, for these revenues to sustainably grow, more citizens have to be connected to both voice and data so as to stimulate demand and increase the tax base. The witnessed growth in the sector notwithstanding, the following constraints need to be addressed, which this Policy seeks to do:

1.2.2 Unregulated ICT Infrastructure Development and deployment

While Government has to date invested over USD 105 Million in the National Backbone Infrastructure (NBI), Uganda Electricity Transmission Company (UETCL) and Private telecom operators also continue to rollout similar optic fibre networks in an uncoordinated and unregulated manner. Unfortunately, when government started investing in the development of the ICT backbone, in 2006/7, there was no policy framework to regulate and guide other public and private entities on the development and deployment of similar infrastructure so as to avoid overlaps and duplication. As a result these networks mostly run parallel to each other and are concentrated in the greater Kampala. The combined length of the optic fibre network in the country is about 12,000 Km, yet the effective reach is less than 2100 Km because of the duplication in covered segments. As a result of this duplication, the sector continues to see underutilisation of the optic fibre capacity on all the OFC networks, case in point is the government owned NBI whose utilisation remains at less than 30% of its full capacity. The underutilisation is on account of other telecom operators having their own infrastructure. This duplication translates into high Total Cost of Ownership (TCO) for all ICT

infrastructure operators, which is reflected in the high cost of bandwidth and therefore ICT services.

There is therefore, need to have a comprehensive framework to coordinate all Government interventions in the development of broadband Infrastructure; and also regulate the private sector to ensure sharing and complementarity of their broadband networks to avoid duplication in deployment of the infrastructure.

Lack of a regulated and coordinated framework for broadband infrastructure has hindered universal connectivity thus leaving a big part of rural Uganda under/unserved. Investments in broadband infrastructure are also a push factor for voice and data costs and thus the need for a shared infrastructure. If each operator develops its own independent infrastructure, it would have to recoup its investments by pricing its ICT services (voice and data) highly.

1.2.3 Cross-sector infrastructure sharing

Government has prioritised development of public infrastructure specifically Transport, energy, water and ICTs. However, the planning and development of the public utility infrastructure (Physical and Technological) continues to happen in silos, resulting in high cost of infrastructure development. Potential common costs (such as way-leave compensations, civil works, designs, supervision and security) which form the substantial share of the cost of infrastructure development are not shared and works not done simultaneously. In addition, the current silo approach to development of utility infrastructure leads to the destruction of already completed infrastructure. Many countries have adopted the "**dig and burry once"** policy along shared infrastructure utility corridors that are catered for in their planning.

It is important to note that where one utility service is needed, all the others too are needed and therefore a coordinated rollout approach dramatically lowers the TCO of the entire four utility infrastructure. Developing ICT infrastructure along the other utilities further provides a mechanism for efficient monitoring and control of the utility networks, enhancing their performance and sustainability. Case in point, the broadband plan should leverage the infrastructure development projects in other sectors such as: the Crude Oil Pipeline (Hoima to Tanga); Standard Gauge Railway (Mombasa –

Kampala – Kigali – Juba and in DRC); Industrial parks; and leveraging the river Nile for OFC through Port Sudan to Egypt and the Mediterranean Sea.

1.2.4 Appropriate Broadband infrastructure Technology MIX

Government investment in broadband Infrastructure has largely leaned towards deployment of OFC networks, which are a point-to-point high speed networks mostly along highways and not suitable for delivery of broadband to remote and terrain constrained geographical parts of the country. In addition, OFC are prone to vandalism, and natural disasters thus the need for other complimentary wireless technologies to reach areas that can't be connected by fibre. To reach these rural, NOT/underserved parts of the country, including those that are hard to reach due to terrain, there is need for a comprehensive broadband roll-out plan that integrates the right mix of technologies including Satellite, Microwaves, TV-white spaces, Fibre to the premises, copper cables and any other emerging broadband technologies. With emerging technologies and innovation, satellite connectivity that hitherto proved very expensive is now affordable and compares well with OFC and can cover all communities irrespective of geographical terrain.

1.2.5 Internet exchange Point (IXP) and Country code Top Level Domain (CCTLD)

An Internet exchange point (IXP) is the physical infrastructure through which Internet service providers (ISPs) and Content Delivery Networks (CDNs) exchange Internet traffic between their networks (autonomous systems). These exchanges will help in retaining the local internet traffic within the country.

Country code top-level domain (CCTLD) is an Internet top-level domain generally used or reserved for a country, sovereign state, or dependent territory identified with a country code, the case of Uganda, it is (**.ug**) as used in the domain names www.ura.go.ug, www.defence.ug. This is the same as the telephone county code (+256) for Uganda in telephony. Currently, both these critical broadband infrastructures are under the management of private entities and there is no supervision by Government. This was on account of the delay to establish ICT institutions of Government (Ministry of ICT) early enough, to own and regulate these ICT resources in accordance with global

internet governance protocols. Private actors took advantage, to apply for and own these critical ICT infrastructure that have a direct impact on both price and cyber security of the country.

This policy seeks to streamline the ownership, management and regulation of this critical Infrastructure.

1.2.6 Licensing framework for communication services

The major service providers in the sector were licensed 20 years ago and since then the ICT sector has witnessed tremendous technological and business advancements like convergence of technology and evolution of value added services. The existing licencing framework is designed in such a way that the licensee can run the infrastructure; network services and content/ applications under the same license (vertical integration). This has resulted in lack of transparency in the cost of services delivered; revenues declared and also making it hard for other service providers to ride on their infrastructure. This results in market entry barriers for new entrants and leads to unfair and non-competitive environment because service providers compete on infrastructure. This has also resulted in capital flights and outsourcing services that would otherwise be provided by Ugandans.

The current licensing regime for Telecommunication service providers falls short of critical regulatory issues that operators need to adhere to as part of their quality of service obligations and for enabling of broadband penetration. Therefore, this policy proposes that the following will form part of the licensing framework:

i. National coverage – An operator who seeks a national operator license must be able to cover the entire geographical area of Uganda so as to enable universal access, promote effective competition and quality of service.

ii. Spectrum management- The spectrum being a scarce and finite national resource, it needs to be managed and utilised efficiently, optimally and rationally. These resources should not be owned by the private telecom service providers. This will also aim to outlaw hoarding of spectrum and enable realisation of true economic value of the spectrum through spectrum re-farming. The principle for all operators will be 'use it or lose it' and no operator when selling its

stake through 'Mergers & Acquisitions' should have a claim on spectrum. The policy also aims for unbundling of spectrum allocation and license.

iii. National roaming - Roaming refers to the ability of a customer to automatically make and receive voice calls, send and receive data, or access other services, even when travelling outside the geographical coverage area of his service provider, by means of using the service of the other service provider's network. Currently within the country, customers of one service provider cannot access the ICT services of the other service providers. The policy aims to enable customers to have seamless access and coverage irrespective of their network. This will ensure universal access to ICT services.

iv. Number portability –refers to the possibility for subscribers to retain their telephone number when changing network operator or when changing geographic location. Currently the customers cannot switch from one service provider to another service provider, without changing the telephone numbers. The policy aims to empower the customers to choose their service provider without the challenge of changing telephone numbers.

v. Structured renewal of license – Currently there is no clear policy for renewal of all licensee's and some licenses stipulate automatic renewal on expiry of the current license. This policy aims to provide for a structured renewal framework for the licensees taking into the consideration of roll out obligations, quality of service and technological developments.

vi. Listing of all telecom operators, on the local stock market, as a licencing condition will help on mitigation of capital flight among other benefits of local content development opportunities that come along. (details at Annexure – A)

1.3   JUSTIFICATION FOR BROADBAND POLICY

The overall objective of this policy is to harmonize and regulate the planning and development of Broadband infrastructure, define the appropriate technology MIX that will enable universal connectivity and reform the licencing frame work to improve quality of service in the industry and meet the overall national policy goals and aspirations. Where the government has

developed fiber or any other Broadband infrastructure like satellite, terrestrial microwave, etc. the private operators will be regulated to use the same.

The resultant effects of not having regulated/coordinated infrastructure development and a correct technology MIX are:

a. Lack of connectivity for all (limited connectivity), as operators have mostly focused on optic fiber without exploring other forms of connectivity and only choose to develop and deploy infrastructure where it is commercially viable;

b. High cost of internet services, as operators' pricing is influenced by investments in infrastructure;

c. Poor last Mile Connectivity/Underutilisation of National Backbone Infrastructure, which only connects government establishments and therefore cannot effectively influence the market;

d. Poor or slow internet speeds occasioned by infrastructure bottlenecks resulting in poor quality of service.

1.3.1. Lack of connectivity for all (limited connectivity)

Currently, the Broadband connectivity in the country is very limited. In the mobile sector, just 45% of the country has 3G coverage. There are 3517 mobile towers[3] in the country, serving little over 4,000 BTS with an average tenancy ratio of just under 1.14 BTS per tower, which is very low as per industry standards. Out of these base stations, only around 1,600 are 3G enabled. Other than sharing of towers, other ICT infrastructure sharing like in-building solutions (IBS) are yet to be embraced in the country. A report from Towerxchange, projects a requirement of at least 3500 additional towers to cater for full connectivity.

On the fiber front, though there are around 12000 km of fiber in the country, most of the fiber routes are duplicated, thus effectively reducing the net fiber coverage to less than 2100 km as shown in figure 1.3 below. Out of the 612 sub counties with 3G coverage, 384 of them do not have any fibre to support data backhaul, implying limited or constrained access speeds. The penetration of fiber optic network in rural areas is also relatively poor. More than 60 districts do not have fibre on their land, in contrast, the Kampala's metro fibre network has around 282 km of fiber cable laid.
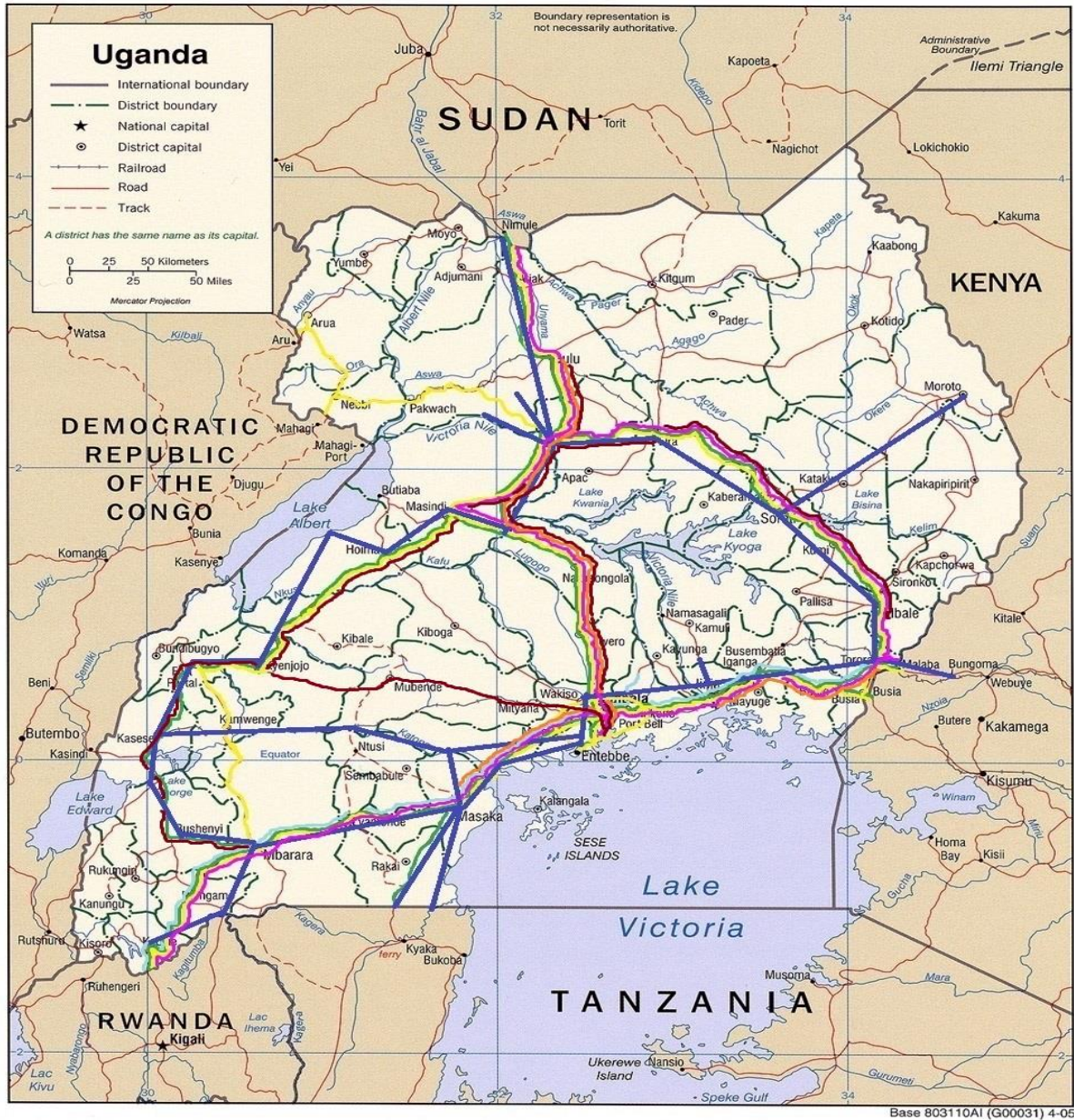
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[3] Towerxchange report 2017

Figure 1.3: Current Status of Broadband OFC Coverage

No	Network Owner	Key Sections
1.	Uganda Telecom	Kampala – Katuna, Kampala – Tororo, Kampala – Entebbe and Kampala – Mpondwe Earth Station
2.	MTN Uganda	Kampala – Katuna, Kampala – Malaba, Kampala – Arua, Masindi – Mbarara via Kamwege, Masindi – Tororo
3.	National Backbone(GoU – NITA)	Kampala – Katuna, Kampala – Busia/Malaba, Masaka – Mutukula, Kampala – Nimule, Mbarara – Masindi and Masindi – Tororo
4.	UETCL OPGW	Kampala – Malaba, Kampala – Mbarara, Mbarara – Kagitumba, Kabulasoke – Nkenda, Kasese, Nkenda – Kafu (Scoped), Kampala – Nimule (scoped), Karuma – Arua/Ayago, Tororo – Lira, Lira – Gulu/Karuma
5.	Liquid Telecom	Kampala – Malaba, Kampala – Katuna, Kampala – Nimule and Masindi - Tororo
6.	Airtel Uganda	Kampala – Fort Portal, Fort Portal – Masindi, Masindi – Mbale, Fort Portal - Marara
7.	BCS Uganda[i]	Masindi – Mbale, Fort Portal – Mbarara
8	Africell	Kampala – Kafu, Kampala – Masaka, Jinja - Malaba

15

Also as shown in table 1.3 below, only 35% of universities have access to internet, of which only 40% have broadband connection. Less than 5% of primary schools and 10% for secondary schools have internet. Also, less than 2% of health centres are connected to the internet. Though efforts have been made to connect government ministries and parastatals under the e-government project, connection still remains low at district and local administration level.

Table 1.3: %Basic Access and Fiber connection

Sector	Institutions	% basic Access	% Fiber connection speed
Education	Universities	35	40
	NTCs, TCs, Mgmt Institutes etc.	15	5
	Primary Schools	5	2
	Secondary Schools	10	2
Health	Hospitals	10	1
	Health Centre IV- II	2	0
Agriculture	National Research center	10	2
	Extension offices	1	0
Government	District Administrations	15	2
	Sub county Administrations	1	0
	Govt Ministries &parastatals	60	50
Private sector	ICT related business institutions	25	10
	Multi nationals and Corporate institutions	50	30
	Registered business and SMEs	10	5
	Public Access points	25	10
Households	Households	<3%	<1%

## 1.3.2 . High cost of internet services

It has been acknowledged worldwide, that affordability remains as one of the main reasons why people do not use Broadband services even where they are available. Various components, affect the cost of Broadband, including installation and ongoing service fees, as well as the prices of broadband capable devices to access and use ICT services. All these factors have

combined to make the cost of accessing internet services very high and out of reach for many citizens.

The costs of the bandwidth is also very high in the country, when compared to neighbouring countries. Despite many economic benefits, the average monthly access to broadband without a data cap (but with limited speeds) on a shared link costs an average of UGX 300,000, around 84 USD. Comparatively, Broadband Internet access costs around $5.37 per month in Iran, compared to $37 per month in India and $12 per month in Syria.

The Figure 1.4, below shows the costs of fixed line broadband internet for some of the other African countries.
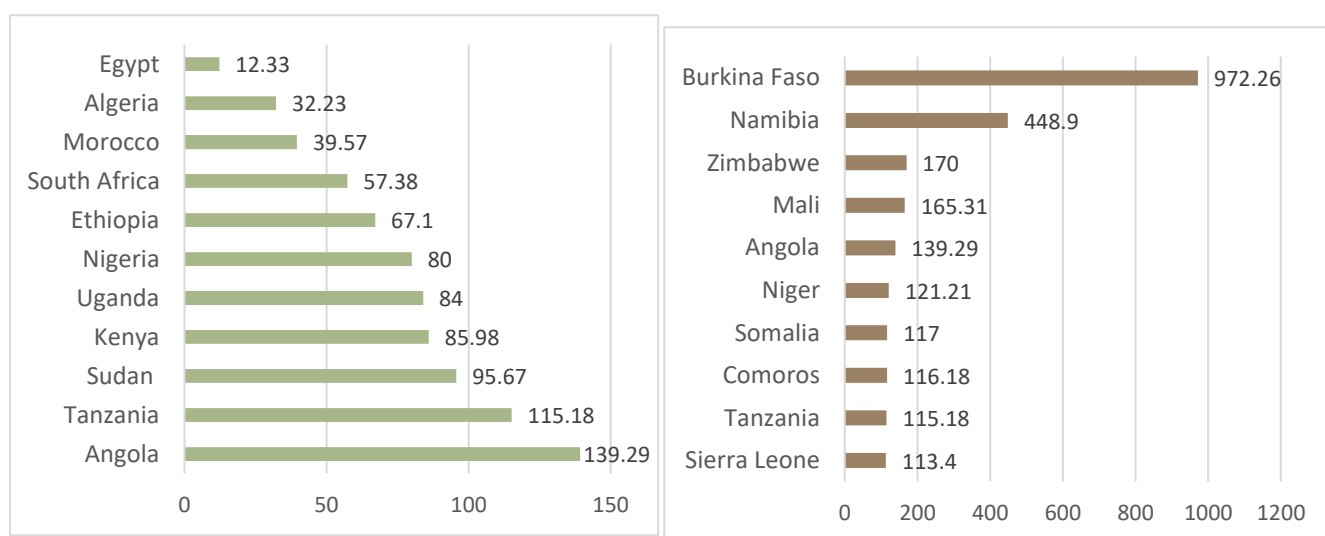
Figure 1:4 Price of broadband internet (Average monthly cost in US Dollars [Oct 2017]) in some African economies[4]

An analysis of the broadband costs show that the cost to get to the east coast of Africa from Uganda, is higher than the cost to get to Europe or USA from the African coast. The optic fibre infrastructure along the coast of Africa is also grossly underutilised. The prices of fixed-broadband in the country are exorbitant and Uganda currently ranks third highest amongst the list of countries offering fixed-broadband network in the world. Even in the shared access mobile (wireless) internet, the costs are still very high when compared to its neighbours. While competition has helped drive down ICT service costs, the costs are still high for Ugandans especially in low income brackets.

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[4] ATLAS| Data: Broadband pricing league table by cable.co.uk

1.3.3 . Last Mile Connectivity and Full Utilisation of NBI

The current utilisation of NBI is 30% of the 10 Gigabytes capacity procured. This underutilisation is on account of lack of coordination between private sector and government and also between government bodies themselves in the development and deployment of broadband infrastructure. While NBI is a step forward in bridging the urban-rural divide in broadband penetration, last mile access is critical to realizing the policy objectives of inclusion and universal access. The efficient and timely delivery of public services requires extending connectivity through the last mile. This would also require collaboration between the government and private sector enterprises to devise strategies that make the proposition viable for all stakeholders.

The NBI needs to be integrated with other broadband technologies so as to complete the broadband connectivity cycle. The following will help in the last mile roll-out of broadband:

a) Exploring various technological mix (Satellite as most viable) to ensure efficient BB deployment across the country especially in the last mile;

b) Ensure continuous connectivity and backup capacity (redundancy) using ring architecture;

c) Design open networks that are scalable;

d) Harmonise existing fibers available with other government agencies and in the private sector;

e) Enable and coordinate infrastructure development with private sector participation; and

f) Develop proper business models that promote efficient fibre utilization.

1.3.4 Poor internet speeds occasioned by poor quality of service.

Speed is one of the key factors that attract potential users to become Broadband subscribers. Speeds must be above a certain threshold to enable use of desired applications such as video viewing, real-time services or gaming. A variety of tariff offerings with different speeds provides choice to the userst also expands the size of the subscriber base. A study by Ericsson Company, found that doubling of Broadband speed increases national GDP by nearly 0.3 per cent.

But unfortunately, the internet speeds across the country, except for

Kampala[5] (where speeds of 2Mbps were achieved), are very low, reaching only a few kbps. Even around Entebbe[6], it is around 500 kbps. An international comparison of the 'average broadband speed' for some of the regional countries are shown in Figure 1.5 below. As could be seen from the figure, the global average is 7 Mbps. Hence the ambition must be at least to deliver at least 4 Mbps download speed to users on mobile broadband, with speeds of 100 Mbps or more available on demand. Even in mean download speeds, Uganda currently ranks 116th in the global rankings, even assuming the Kampala's download speed is averaged across the nation.

Global Rank	Country / Region	Q1 2017 Avg. Mbps
32	Qatar	13.7
33	Israel	13.7
43	Kenya	12.2
65	United Arab Emirates	8.6
71	Kuwait	7.9
75	Turkey	7.6
82	South Africa	6.7
84	Saudi Arabia	6.7
104	Morocco	5.2
107	Iran	4.7
114	Nigeria	3.9
130	Namibia	2.9
143	Egypt	2

Figure 1.5: Average Connection Speed of some countries.[7]

All these have resulted in poor rollout and uptake of e-government services, innovations and other Broadband services. The traffic usage of the top twenty MDA/LG services accessed via the e-Citizens Portal (which houses around 74 services), shows except for Uganda Revenue Authority e-services, there are no substantial usage in any of other MDA/LG services. This relatively low usage is because of poor connectivity and high costs of internet services. The low penetration and high costs of internet have also adversely affected the innovations in the country. Uganda currently ranks 102nd in the Global innovation index, 2107.

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[5] http://www.bandwidthplace.com/location/uganda/
[6] http://testmy.net/country/ug
[7] https://www.akamai.com/uk/en/multimedia/documents/state-of-the-internet/q1-2017-state-of-the-internet-connectivity-report.pdf

2.0 THE BROADBAND POLICY

2.1 Broadband Target for Uganda

Broadband is *a measure of the capacity of Internet connectivity that is reliable and permits real-time delivery of voice, data and video to the end users and meets the increasing demand for internet applications and services. The target is to deliver a minimum of 4 Mbps to end users for internet access.*

2.2 Policy Statement

To recognise Broadband infrastructure as a Public Utility (like water, transport and energy) and coordinate its planning, development and management for all actors to avert duplication, review the licensing regime in order to achieve universal access and service of communications.

2.3 Guiding principles

The following principles will guide the implementation of the broadband policy:

1. Open and Universal access to broadband infrastructure;
2. E-government service delivery;
3. Cross-sector infrastructure sharing;
4. Right mix of Technology & Network Neutrality;
5. Promotion of research and innovation;
6. Regional Integration; and
7. Environmental consideration.

2.4 Objectives of the Policy

The key objectives of this policy are:

i.   Avert duplication and therefore wastage of resources in the provision of broadband among the key stakeholders in the ICT sector
ii. Optimize usage and increase the efficiency of broadband infrastructure utilization in the country.
iii. Ensure that all parts of the country are connected to broadband and not only the urban areas as it is the case today.
iv. Review the licensing regime for the telecom and broadcast operators to ensure that their operations are in line with the ICT sector strategic objectives.

2.5 Policy Strategies

Policy objective 1: Connectivity for All

Strategies:

a) Classify Broadband infrastructure as a public utility just like transport, energy and water in order to avert duplication;

b) Integrate broadband infrastructure in the planning and development of physical infrastructure such as roads, railways, energy and oil pipelines;

c) Regulate, coordinate and harmonize the development, deployment and sharing of all broadband Infrastructure (both private and public) among all stakeholders;

d) Establish Internet exchange points and ensure that all domestic traffic remains within the country;

e) Establish common international gateways in order to manage all international traffics originating and terminating in the country;

f) Ensure that all local broadband connectivity for all MDAs/ local entities are independent of international internet connectivity. It is critical for both security and affordability of broadband services;

g) Develop a one-stop center concept to streamline the licensing regime and fees payable for development and use of ICT infrastructure; this will ensure all stakeholders in the licensing process are under one roof (regulators, local councils, environmental issues, etc.)

h) Promote and implement the national postcode and addressing system, towards last mile delivery of services to facilitate e-commerce; and

i) Develop appropriate legal frameworks to implement the policy.

Policy objective 2: Affordability and Digital Inclusion through adoption of alternative broadband infrastructure technologies

Strategies:

a) Adopt the right technology mix (hybrid) to ensure efficient and complementary broadband Infrastructure deployment (optic fiber cable, Satellite, Terrestrial Microwave, and new and innovative technologies);

b) Promote and support digital literacy/education to equip all citizens irrespective of their education status (Literate or illiterate) with basic digital competencies on the use of ICT devices so as drive uptake and

stimulate demand for broadband powered services while guaranteeing consumer rights.

c) Promote and support local manufacturing and assembly of broadband enabled devices/equipment locally so as to make them affordable and of good quality.

d) Promote local content for citizens to competitively participate both locally and globally in the digital space.

e) Ensure all government sectors deliver their services online for efficient and sustainable service delivery.

f) Ensure interoperability of all e-government systems through open access principle and shared services;

g) Adopt the use of technologies to ensure the safety, reliability and efficiency in management of resources and trusted information solutions such as Public Key Infrastructure, Block-chain technology; and

h) Promote open source, and government ownership of the source code for all government information systems, software and e-solutions. This will ensure sustainability and promote innovation

Policy objective 3: Increased broadband rollout and quality of service improvement through Telecom licencing reform

Strategies:

Make the following parameters to form of the licencing conditions and assess quality of service obligations based on them as measurable performance indicators.

a. National coverage – Every operator that seeks a national operator license must be able to cover the entire geographical place of Uganda so as to enable universal access, promote effective competition and quality of service.

b. Spectrum management- The spectrum being a scarce and finite government resource, needs to be managed and utilised efficiently, optimally and rationally. These resources should not be owned by the private telecom service providers. This will also aim to outlaw hoarding of spectrum and enable realisation of economic value of the spectrum through spectrum refarming. The

principle for all operators will be 'use it or lose it' and no operator whenever selling its stake through 'Mergers & Acquisitions' should ever have a claim on spectrum. The policy also aims for unbundling of spectrum and license.

c. National roaming - Roaming refers to the ability of a customer to automatically make and receive voice calls, send and receive data, or access other services, even when travelling outside the geographical coverage area of his service provider, by means of using the service of the other service provider's network. Currently within the country, customers of one service provider cannot access the ICT services of the other service provider. The policy aims to enable customers to have a seamless access and coverage for the customers irrespective of their network. This will ensure universal access to ICT services.

d. Number portability –refers to the possibility for subscribers to retain their telephone number when changing network operator or when changing geographic location. Currently the customers cannot switch from one service provider to another service provider, without changing the telephone numbers. The policy aims to empower the customers to choose their service provider without the challenge of changing telephone numbers.

e. Structured renewal of license – Currently there is no clear policy for renewal of all licensee's and some licenses stipulate automatic renewal on expiry of the current license. This policy aims to provide for a structured renewal framework for the licensees taking into the consideration of roll out obligations, quality of service and technological developments.

f. Making Local Listing a licencing requirement for all telecom operators will help on mitigation of capital flight among other benefits of local content opportunities that come along.

2.6 Policy implementation mechanism

The successful achievement of the Broadband Policy will depend on an integrated approach during implementation supported by developing strategic synergies and partnerships.

The Ministry of Information, Communication Technology & National Guidance shall be responsible for providing policy guidance and oversight for implementation of the policy. It will lead and manage the development, adoption, implementation, monitoring and evaluation of the Broadband Policy. It will also coordinate with other MDAs to resolve inter-sectoral issues and harmonize the planning and development of ICT infrastructure in all sectors such as power; railway; roads; oil pipelines etc.

The Ministry of ICT & NG will also ensure that there is no duplicity of technological infrastructure in the country and wherever necessary, coordinate the review, development and implementation of relevant laws/ regulations in the ICT sector.

2.6.1 Role of different stakeholders

The Ministry recognises that a substantial amount of Broadband Infrastructure has already been deployed albeit in an uncoordinated manner. We are also aware that within Government and the private sector there is still a large scope for Broadband Infrastructure deployment to achieve universal access and service.

2.6.1 (A) the role of the Ministry of ICT and National Guidance

To cause harmonisation of Broadband Infrastructure deployment within Government itself and provide regulatory guidelines for the private sector to follow. To do this the Ministry shall carry out the following activities;

a) Putting in place an appropriate policy and regulatory frameworks necessary to avert duplication by operationalizing the relevant sections of the Uganda Communications Act 2013, among them is Section 5(1)(y) ***"to encourage and promote infrastructure sharing amongst licensees and to provide regulatory guidelines"***

b) Play an oversight role for the implementation of the policy

c) Create a platform where Broadband Infrastructure plans are shared across all actors

d) To streamline the management of the Internet Exchange Point and Country Code Top Level Domain Name.

e) To set up a Broadband Infrastructure implementation taskforce in view of the new dispensation.

2.6.1 (B) the role of Communications Operators

The operators will perform the following tasks in the implementation of the National Broadband Infrastructure Policy during the period of the policy;

a) Adhere to the new licensing regime as prescribed by the regulator. For emphasis they will not construct infrastructure where it already exists.

b) Holders of National Operator Licenses will be required to offer communication services in the entire Country without discrimination.

c) Guarantee good quality of service in terms of network coverage and accurate billing of users.

d) Collaborate with all parties involved in the Broadband Infrastructure ecosystem to maximize consumer reach.

2.6.1 (C) the role of the Regulator

The Policy by nature is designed to rationalize and operationalize the various Sections of the Uganda Communications Act, 2013. Broadband Infrastructure is a function of communications service providers as interpreted in the Uganda Communications Act, 2013 ***"communications services means services performed consisting of the dissemination or interchange of audio, visual or data content using postal, radio, or telecommunications media, data communication, and includes broadcasting".*** Without rewriting the functions of Uganda Communications Commission as stipulated in the Law, the specifications of Uganda Communications Commission shall be the following;

a) To enforce the licensing framework as amended by this Policy.

b) Prepare and issue detailed Broadband Infrastructure deployment guidelines with the aim of averting duplication.

c) To regularly update the Minister on implementation of the Policy.

2.6.1 (D) the role of the Public

The role of the public will be to highlight or point out areas without connectivity and also to point out weaknesses in implementation of the policy. In addition, the Public shall assist both Government and Private Sector in averting vandalism of the deployed infrastructure.

2.6.2 Consensus building, Consultations

This Policy was developed through a consultative process championed by the Ministry of ICT and National Guidance.

Within the scope of the digital Uganda Vision, the Ministry held consultative processes aimed at redefining ICT services and how they can be delivered to ordinary citizens. In this process, it became apparent that the constraints of ICT infrastructure was a major hindrance to absorption of ICT services. It was noted that there is a concentration of Infrastructure in urban areas with little in semi-urban and rural areas.

The consultations included the operators, Government agencies, private ICT practitioners, academia and civil society.

To reinforce our thoughts, Intel was invited to give us the global perspective on how ICT services and Infrastructure are being managed in the new age. Indeed, their inputs as well as the stakeholders' contributions reinforced the urgent need to harmonize Broadband Infrastructure deployment.

2.6.3 Implementation timeframe

Taking into consideration that Government is still investing in Broadband Infrastructure as witnessed in phase IV of the NBI roll-out that is yet to commence under NITA-U, it is imperative that within the next five (5) years the Country will get more dividend in Broadband investments both by Government and private sector.

The Policy therefore shall be implemented for a period of five (5) years before it is reviewed for realignment and/or continuation as is.

2.6.4 Communication and dissemination of the Policy

This policy was developed through a participatory process and as such, it is important that different stakeholders (public and private) are aware of the policy and their role in the implementation process. In order to ensure that

this policy is widely known, accepted and adhered to by all stakeholders, government shall print and disseminate the policy at all levels. The MoICT and other stakeholders at all levels shall engage in communicating and disseminating the policy among all stakeholders.

2.6.5 Monitoring Framework

A monitoring framework will be developed to monitor attainment of a harmonized Broadband Infrastructure ecosystem.

2.7 Financing of the Policy

The financial resources necessary to implement this policy are already resident with the various agencies. From the government perspective, NITA invested in NBI and the implementation of phase 4 has secured financing from the World Bank. The private sector investments in infrastructure is a matter of their board rooms and therefore, have no financial implications to government.

Overall the Minister will invoke section 7 (1) and (2) of the UCC Act 2013, to compel UCC to fund the implementation of the policy, in consistence with section 5 (1) y of the same Act.

2.8 Communication Strategy

The Ministry of ICT & NG will create awareness about this policy for all stakeholders first through the sector technical working group, ICT fora and through mass and digital media in accordance with the government communication strategy.

GLOSSARY

Bandwidth: The range of frequencies available to be occupied by signals

Broadband: A measure of the capacity of Internet connectivity that is reliable and permits real-time delivery of voice, data and video to the end users and meets the increasing demand for internet applications and services.

Communication Satellite: A device sent up into space used to relay telecommunications signals between two or more points.

Convergence: This is where advances in technology have made it possible to use different media (cable networks, terrestrial and satellite radio relay systems, computer terminals and television sets) to carry and process all kinds of information and services, including sound, images and data with no distinction between broadcasting and telecommunications data.

Frequency: The rate at which an electrical current alternates, usually measured in Hertz. It is also used to refer to a location on the radio frequency spectrum, such as 800, 900 or 1800 MHz.

ICT Infrastructure: Physical telecommunications systems, Data centres and networks (cellar, broadcast, cable, satellite, postal, Computers, servers, routers, switches) and the services that utilize them (Internet, voice, mail, radio, and television).

Information and Communication Technologies (ICT): Hardware, software, networks, and media for the collection, storage, processing, transmission and presentation of information (voice, data, text, images), as well as related services.

Information Technology (IT): is the use of computers to store, retrieve, transmit, and manipulate data or information

Interoperability: the ability of computer systems or software to exchange and make use of information.

Local Content: Expression and communication of a community's locally generated, owned and adapted knowledge and experience that is relevant to the community's situation.

Number Portability: Possibility for subscribers to retain their telephone number when changing network operator or when changing geographic location.

Spectrum Management: The planning, allocation, assignment and monitoring of radio frequencies including authorization use.

Spectrum Re-farming: Reassigning government-regulated electromagnetic spectrum for services with higher value. The users of the existing spectrum are forced out, although they may be compensated in some manner. The frequency bands are assigned to communications services that yield greater economic or social benefit.

Radio Spectrum: is the band of electromagnetic frequencies from 3 Hz up to around 300GHz used for communication.

Roaming: the ability for a cellular customer to access communication services, including home data services, when travelling outside the geographical coverage area of the home network.

ANNEXURE-A: WHY ALL TELECOM COMPANIES OPERATING IN UGANDA SHOULD BE PUBLICLY LISTED COMPANIES

Background

Mobile telephone companies commenced operations in Uganda with the licensing of Airtel in 1995, followed by MTN thereafter in 1998. Data from UCC's Postal, Broadcasting and Telecommunications Annual Market & Industry Report 2016/17 indicated that the total number of mobile phone subscriptions stood at 23,608,610 users at the end of June 2017. The report also states that mobile money services have grown to the extent that the ratio of mobile money subscribers to mobile subscribers is almost approaching 1:1. The value of mobile money transactions has increased from UGX 132.6 billion in FY 2008/09 to UGX 28.208 trillion in FY 2016/17; an annualized growth rate of 95%.

With the advent of mobile money and its latest developments (like MTN's Mo-Kash), telecom companies have increasingly become the leading deposit takers and money remitters. Suspicion is high that profits accruing from these new telecom innovations are not being fully declared to the tax authority[8].

Two of the top five tax payers in Uganda are telecom companies and they contribute over UGX 600 billion in tax revenues to the treasury. They also remit in excess of USD 250 million to their head offices every year for onward transmission to their global shareholders. Considering the contribution of Ugandans to the telecom companies' success, it is economically and politically beneficial to give Ugandans the opportunity to become shareholders in their Ugandan operations. This action has been taken in Ghana, Nigeria, Tanzania, and Zambia.

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[8] In October 2015, a joint investigation by the Observer and Finance Uncovered, a global investigative journalism network, unearthed how between 2003 and 2009 MTN Uganda had shifted 3% of its revenue every year to MTN International in Mauritius in the name of 'management services' even when the company itself (MTN) confirmed that the Mauritian company employs no staff at all.

Envisaged benefits of listing the telecom companies operating in Uganda

1. Increased tax collection due to the improved transparency in public financial reporting standards that are a prerequisite for listing on the bourse. Two of Uganda's top six taxpayers in 2015/16 were telecom firms so their contribution to the national treasury is very significant.

2. Listing of telecom company shares will reduce the downward pressure on the local shilling as demand for dollars (necessary for payment of dividends to foreign owners) reduces since part of the dividends will be paid to local shareholders, hence strengthening Uganda's current account position.

3. Growth of the stock markets in Uganda. More companies will follow suit given the benefits of listing and their expected use of capital markets financing will reduce on over-reliance of the banking sector's credit for economic growth.

4. Increased investment opportunities for the rapidly growing national savings held by individuals and institutions like pension funds and other retirement benefits schemes within the country.

5. More Ugandans (including mobile money agents, airtime dealers, telecom employees, and telecom subscribers) will hold shares in the newly listed telecom firms and benefit from the distribution of profits – improving wealth distribution and social welfare.

6. Listing of telecom companies' shares will impact positively on their liquidity. Listing will make it easier for potential investors to enter and exit the market as and when they please. Liquidity of company shares is vital to the process of price discovery and tradability.

7. The listing of telecom companies will ease the process of Uganda's inclusion in the frontier market category of the Morgan Stanley Capital International (MSCI) index, together with other African countries like Kenya, Morocco, Mauritius, Nigeria, and Tunisia. This action, which is one of the main goals of the Capital Markets Development Master Plan, has been known to increase foreign investor participation seven times. It should be noted that most foreign institutional investors do not invest in countries that are not in the MSCI index.

How to list the telecom companies on the stock exchange

There are three main methods of offering shares to the public:

1. **Private placement:** This method is for companies wishing to raise cash by issuing new shares through a private network of individuals or institutional investors. It is not an offer to the public. Private placements usually precede a listing by introduction. However, once listed, the shares become publically available for trading. Listing through placement normally requires a pre listing statement but not a prospectus. The process is relatively quick, subject to the amount of time it takes to find investors privately. This can be as little as 2-3 months.

2. **Public Offer.** This is another method used by companies to raise capital. The difference between a placement and a public offer is that a public offer is an offer made to the public and requires a prospectus. This process is generally longer and can be anywhere between 3-9 months depending on the complexity and the size of the offer (i.e. how much the company is looking to raise). Public offers are normally followed by Initial Public Offerings which entail listing the shares on a stock exchange.

3. A listing by "**introduction**": This method of listing is for companies who do not wish to raise additional funds from the listing. In this scenario, the company's securities are already widely held by a large number of shareholders prior to listing so that there will be no offer of securities to the public. The procedures for vetting and approving a new listing by introduction are usually identical to those for IPOs. However, a detailed prospectus is not required in this case and the process is relatively fast (can be 4-6 weeks if company accounts are in good order).

The listing options undertaken by telecom companies within Africa (as depicted in the annex) have been mainly centered on Initial Public Offerings (IPOs). An Initial Public Offering (IPO) entails an offer of a company's share to a diverse array of investors including institutions and individuals. Prior to an

IPO the company is considered private, with a relatively small number of shareholders made up primarily of early investors (such as the founders, their families and friends) and professional investors (such as venture capitalists or angel investors). The public, on the other hand, consists of everybody else – any individual or institutional investor who wasn't involved in the early days of the company and who is interested in buying shares of the company. Until a company's stock is offered for sale to the public, the public is unable to invest in it.

We recommend that telecom companies operating in Uganda should list their shares through the IPO route.

- As a first step, the telecom companies should get established as public companies
- The telecom companies should offer 30% of their shares to the public through a primary offer that is ring-fenced to Ugandan/East African nationals and institutions.
- In the unlikely event of an undersubscription, the telecom company can proceed to undertake a secondary offer after 2-3 years and this will be open to all categories of potential investors
- Listing will be done on the Uganda Securities Exchange.

Over 50,000 retail investors are expected to participate directly and indirectly in the IPO. These include contributors to the 57 occupational savings schemes licensed by the Uganda Retirement Benefits Regulatory Authority, contributors to umbrella schemes, mobile money agents, SACCOs (over 18,000 operating in Uganda), airtime dealers, NSSF contributors, etc.

The major advantage of the IPO route, as opposed to a private placement, is that it effectively achieves: increased investment opportunities for savers, increased wealth distribution, and greater liquidity in the market.

The timetable for listing, from the time the telecom company makes the decision to list to the actual listing will be influenced by a number of variables such as the vibrancy of the market conditions, the readiness of investors to invest in the telecom's shares, the complexity and size of the transaction, how quickly the listing documentation can be prepared and how quickly funds are received from investors. The time taken to list can range from three months to a year, with six months being typical.

Case Studies of Listing

<u>Mandatory listing of MTN in Ghana</u>

In November 2015, MTN Ghana successfully bid for a license from the National Communications Authority of Ghana (NCA), which took effect from 21 June 2016 and is valid for a renewable period of 15 years. The license was awarded on condition that MTN Ghana achieves 35% Ghanaian ownership by 30 June 2018 provided that the listing of the MTN Ghana Shares on the Ghana Stock Exchange would satisfy this condition.

The license, which allows MTN Ghana to offer 4G LTE mobile internet services to its customers, holds extensive benefits to its customers and is expected to improve the company's ability to offer its customers a high-speed data network and advance its competitive position in the market.

Pursuant to this and consistent with the MTN Ghana philosophy of making provision for substantial local stakeholder participation, MTN Ghana has made a public offering of up to 35% of its equity through an Initial Public Offering. This is in line with the vision of enabling Ghanaians to own part of and share in the success of the company and is also pursuant to the condition of the license.

The offer seeks to raise USD 754 million – a figure that is ten times larger than the West African nations' previous biggest-ever share sale. The offer kicked off on May 29 2018 and closes at the end of July 2018.

The MTN Ghana IPO is also unique in that it will allow shares to be purchased through mobile money. This is being facilitated through the MTN Momo Wallet, a mobile money platform popular in Ghana where telecom operators have been allowed to lead the mobile money revolution. Ugandan telecom companies should contemplate using the same concept and involve as many Ugandan individuals as possible in the listing process. Ugandan telecom companies could use their mobile money platforms to become Securities Central Depository Agents during the IPO process.

<u>Mandatory listing of telecom firms in Tanzania</u>

In Tanzania, the Electronic Postal and Communications Act (2016) requires all telecommunications licensees to offload 25% of their shares to the public through the stock market. Under the new Act, existing mobile phone firms are required by law to list their shares on the stock market within six months

from July 1, 2016. Similarly, companies that will be registered after July 1, 2016 will have to list on the stock market after two years of operating in the country. It is envisaged that the Act will make it possible for the government to ascertain telecommunication firms' actual revenues so that they could pay the right amount of taxes.

As a result, Vodacom Tanzania (the country's largest telecom by market share) issued an IPO in August 2017. The telecom raised USD 213 million from the sale of 560 million shares. Vodacom described the initial public offering (IPO), Tanzania's biggest ever, as "a significant landmark transaction for the country" having attracted more than 40,000 local investors, most of whom were first-time participants in the country's stock market.

The other telecom operators in Tanzania (including Tigo, Airtel, Tanzania Telecommunications Company Limited (TTCL), Zantel, Benson and Sasatel) have already submitted prospectuses to the regulator to that effect and have formally made some enquiries to the Capital Markets and Securities Authority (CMSA) on how to heed the law requirement.

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[i] BCS and other partners including Airtel, UMEME and UETCL have fibre shares and the coverage might therefore overlap.