

# THE STATE OF ICT IN UGANDA

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# EXECUTIVE SUMMARY

In line with global commitments to improve digital inclusion and to realise the Sustainable Development Goals for 2030, the Government of Uganda has committed the country to developing a digital vision for Uganda. It aims to build a digitally-enabled society that is “... secure, sustainable, innovative, transformative ... to create a positive social and economic impact through technology-based empowerment”.

The Digital Uganda Vision provides an overarching framework that responds to the national Vision 2040 by providing a unified ICT policy direction. It further provides the Government’s integrated policy and strategic framework to show how information and communication technologies (ICT) can empower Ugandan citizens and achieve the goals of universal inclusion, sustainable development, economic progress and poverty eradication through digital innovation.

## POOR INTERNET PENETRATION

The Vision aspires to deliver a variety of government and private services electronically in various fields – education, health, agriculture, social security, banking, justice and communication. The current draft of the Vision is constrained however by the fact that Uganda has one of the lowest (14%) Internet penetration rates of the 10 African countries surveyed by Research ICT Africa (RIA) as part of the Global South After Access Survey conducted between 2017 and 2018. Only Mozambique (10%) and Rwanda (9%) have lower penetration rates. The other countries in the Survey – Ghana, Kenya, Lesotho, Nigeria, Senegal, South Africa, and even Tanzania, another least developed country – have higher Internet penetration rates. Internet penetration is not the only area in which Uganda lags. Less than half of the population own a mobile phone, whereas this market is close to mobile phone saturation in countries such as South Africa (83%) and Kenya (87%).

Although data prices in Uganda appear competitive and relatively low compared to other African countries, data use remains constrained, even for those who have managed to overcome the price barrier of an Internet-enabled device. With the Broadband Commission’s

affordability level revised from five percent to two percent of average national income, 500MB of data should cost less than UGX 5 000 to fall within this affordability measure. The RIA African Mobile Pricing (RAMP) Index indicates that in Uganda in 2018 it would cost UGX 10 000; far above the means of a country with a GNI per capita of only USD 1 820, a per capita income level which the majority of the population live below. The 2018 RIA After Access Survey confirms that affordability of devices and services is the main constraint on uptake and use.

## SOCIAL NETWORK TAXES

A number of contradictory policy and fiscal interventions have compounded this problem undermining efforts to realise the Digital Uganda Vision. In 2018, the Ugandan Government introduced retrogressive social media and mobile money taxes. Mobile money users are charged 0.5 percent on the value of withdrawal transactions, in addition to excise tax levied on withdrawal fees. The social media tax of UGX 200 (USD 0.05) per day was introduced on the use of 60 mobile apps, including Facebook, Instagram, Twitter and WhatsApp. The 2018 After Access Surveys and data demonstrate that social media sites are the main drivers of Internet uptake in Uganda and across the continent. They are also a significant substitute for costly voice and text services – a central strategy for citizens trying to make communications more affordable. The social media tax has impacted negatively on social networking use, which has impacted negatively on mobile operator revenues at a time when they are making the hard transition from voice to data services. The impact on this is not only that the poor take the brunt of the tax (instead of the global platforms that are not impacted at all), but the Government does not actually generate the anticipated revenue from the social networking and mobile money taxes as people curtail their use or find ways to circumvent the taxes through virtual private networks. Moreover, it has a negative effect on productive taxes and operator profits that subsequently decrease as a result of reduced data usage.

These kinds of effects impact negatively on the Digital Uganda Vision in terms of digital and financial inclusion. The taxes are likely to reduce Internet penetration, but also the intensity of use, which is built into models that indicate that a critical mass of at least 20 percent is required for a country to enjoy the network effects associated with economic growth and development. Early evidence released by the Uganda Communications Commission (UCC) on Twitter, national revenue services reports, and operator revenue reports, indicates there was a significant drop in both data use and operator revenues between when the tax was introduced and November 2018 (when operators published their revenue reports).

Both taxes come on top of already high excise duties (12%) and VAT charges (18%) that constitute about 30 percent of retail prices, and which have already constrained uptake and use. Additionally, operator prices also reflect a universal service levy of 2 percent over and above relatively high company taxes.

## DIGITAL GAPS

The 2018 After Access Survey shows that Internet use, mobile phone penetration, and the Internet use divisions between genders as well as urban and rural dwellers are correlated with GNI per capita. Uganda is classified as one of the least developed countries – a list of developing countries that, according to the United Nations, possess the lowest indicators of socioeconomic development and the lowest Human Development Index ratings among all countries in the world. With a GNI per capita of USD 1 820, it is comparable to Rwanda (USD 1 811) and Mozambique (USD 1 093). Among the surveyed African countries, Uganda is the third least-connected country after Rwanda and Mozambique. Yet, it has higher Internet use than other countries with high GNI per capita compared in the Global South After Access Survey. In Bangladesh, a country with a GNI per capita almost double that of Uganda's (USD 3 677,) but a population three times the size, only 13 percent of the population have internet access; Uganda's Internet is also not far behind other populous nations Pakistan (17%) and India (19%), despite these countries having a high GNI

per capita of USD 5 311 and USD 6 026 respectively.

Uganda has a huge urban–rural gap in Internet use of 70 percent, where only nine percent of Ugandans living in rural areas have access to the Internet and about a third (30%) of urban area dwellers using it. Only two countries – Rwanda (77%) and Mozambique (87%) – have greater urban-rural Internet access gaps. South Africa has the lowest Internet urban–rural gap among African countries surveyed, at 36 percent, higher than Argentina (-6%), Colombia (23%), Nepal (22%), as well as Guatemala and Pakistan 13 percent. The gender gap in Uganda's Internet use is moderate, at 25 percent, larger than the gender gap in Argentina (1%), Colombia (-6%), South Africa (12%), Lesotho (14%) and Senegal (21%).

## INHIBITORS OF INTERNET USE

The lack of electricity and underdeveloped ICT infrastructure are the primary causes of huge discrepancies in urban–rural Internet use and mobile phone penetration rates in Uganda. Only 18 percent of households in Uganda have an electricity connection, with an urban–rural electricity gap of 85 percent. Half of those who do not use the Internet (86% of the total population) have no Internet-enabled devices such as computers and smartphones. Uganda has the second-lowest smartphone device ownership in the countries surveyed at 16 percent of the total number of mobile phone users, with only Rwanda's nine percent performing worse. Other than poor supply-side factors, human development factors are also a cause of concern in Uganda. Just over one-third (36%) of non-Internet users are digitally illiterate, 23 percent stating that they do not know how to use the Internet and 13 percent gave a negative assessment about their need of the Internet.

## MARKET STRUCTURE AND COMPETITION

While the Ugandan market is regarded as one of the most dynamic markets in Africa in terms of the number of operators, it remains highly concentrated, rendering competition suboptimal. Airtel and MTN together control about 82 percent of the Ugandan market, with the former's share standing at 45 percent and the latter controlling about 37 percent of total mobile

subscriptions<sup>1</sup>. Uganda Telecom, which provides both fixed and mobile services but has only eight percent mobile market share and Africell has only five percent. The failure of the regulator to deal with the dominance of MTN and Airtel, despite market reviews indicating market dominance, has resulted in some operators remaining marginal and others being forced to exit the market. Vodacom and K2 exited during 2018 for different reasons, having failed to make significant inroads into the market.

While voice services remain a significant segment of the market in Uganda, yet smartphone and Internet penetration remain relatively low. The more marginal operators, such as Uganda Telecom and Africell, use a low-data price strategy to attract customers to their networks. As such, the players in the mobile data market in Uganda face intense pricing pressure with operators undercutting each other as they shift their business models to data revenues. Yet, despite the low data prices in the data market, subscribers who can afford to, choose to pay a premium for quality which is more of a factor in data services that it was with voice. This has made it difficult for smaller operators to compete with larger operators and gain market share. The larger players are profitable enough to reinvest in their networks and to extend their coverage and improve quality of service, which in turn allows them to attract more customers seeking a higher quality of service.

The price wars have led to Uganda sitting in the top 20 out of 49 African countries on the 1GB RIA African Mobile Pricing Index. Without the latest social media tax, Uganda would be ranked in the top 10. Being amongst the least developed countries, with a very low GDP per capita, the affordability of services, even at these relatively low prices, is a major inhibitor of optimal use of the Internet.

## UGANDA'S PERFORMANCE ON GLOBAL INDICES

Uganda scores poorly on different global ICT indices. The primary reason for being ranked 152 out of 176 countries in the International Telecommunications

Union's IDI; 121 out of 139 countries in the Network Readiness Index; and 64 out of 75 countries in the latest Economist Intelligence Unit (EIU) Inclusive Internet Index (3i), is the poor information infrastructure and low levels of Internet penetration in the country. Although over half the population has access to mobile services, only a sixth has access to the Internet. With very low intensity of use, the country cannot enjoy the network effects associated with increased information flows and productivity gains that are reflected in economic growth and in opportunities for social upliftment. With most indices now accounting for the importance of human development in harnessing the Internet for national development, large human capital deficits contribute to the negative score for Uganda on the E-Government Development Index, which places Uganda at 128 out of 193 countries.

With only 60 of 121 districts in the country connected by early 2018, and 3G coverage of only half of the population, clearly the liberalisation of the market on its own has not delivered on national policy objectives of ubiquitous broadband. It is arguable to what degree this is a result of an absence of incentive regulation to drive network extension, or competition regulation that enables service providers cost-based access to dominant operator's facilities and networks. But managing the tension between providing incentives for operators to invest, such as forbearance on regulation, particularly in greenfield network roll out, while ensuring network access for market entrants to enhance competition, provides an example of the complexity of challenges facing regulators in low-income countries where network extension still needs to be promoted.

Nevertheless, perceived market failure stimulated the decision by the Government of Uganda to fund a state-owned and -operated national broadband infrastructure initiative in 2007, with a USD 160 million loan from the Chinese Government.

The entry of the National Backbone Infrastructure (NBI) into the market has enjoyed mixed success. In the context of expanding privately-owned broadband networks into underserved areas, the entry of the NBI

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1 GSMA Intelligence (2018). Data available upon request.

certainly drove down prices, from around USD 2 000 to less than USD 200 in what was previously an extremely concentrated fibre market with very limited coverage. The connection of over 60 public offices, primarily in Kampala and Entebbe, but also further afield, has led to a saving for the state of over UGX 9 billion annually (NBI, 2017). Extending the reach into unserved areas has been much less successful, as commercial operators have also followed the same stronger economic routes identified or stimulated by the NBI. As a result, large sections of the country were not reached in the first three phases of the project.

Like many state-owned national broadband backbones, the NBI has also been undercapitalised until recently when the World Bank-funded Regional Communications Infrastructure Programme (RCIP) came in to support broadband enhancement and expansion. There remain many unconnected areas in the country, especially in the underserved northern areas of the country. Rollout to some of these areas is planned for the fourth phase of the NBI rollout.

Getting all the district capitals connected will be critical, not only to the successful integration of the public sector to more efficiently deliver public services, for the broader Digital Uganda Vision project's success. It will also create opportunities for nascent access networks and Internet service providers in those regions, stimulating greater economic activity.

## COVERAGE AND REACH

Broadband coverage in Uganda is minimal, even compared to many other least developed African countries, with 65 percent of the population covered by 3G and only 17 percent covered by LTE/4G. Although Section 5(1)(y) of the Uganda Communications Act (2013) encourages infrastructure sharing, this has not been embraced with the exception of network towers. This is reflected in the in high costs of rolling out and maintaining infrastructure, the underutilisation of capacity and high Internet prices. However, the Ministry of ICT and National Guidance has recently developed a national broadband policy where cross-sector ICT infrastructure sharing among operators is a guiding principle and major policy objective. The policy, which aims to eliminate infrastructure duplication, calls on

the Ministry to develop appropriate policy and regulatory frameworks and a platform for operators to share broadband infrastructure plans, while the regulator is expected to issue guidelines to avert duplication and enforce the new policy. Operators with national licences are now required to offer communication services across the whole country without discrimination and not to build new infrastructure where it already exists.

## KEY RECOMMENDATIONS

It is evident that Uganda will need to do some things differently to ensure improved outcomes.

Addressing inconsistencies in policy that affect the sector is critical. Each policy that impacts the sector, regardless of the Ministry that develops it, should be evaluated before implementation within the overall context of the Digital Uganda Vision so that adverse effects can be mitigated.

Supply-side interventions on their own are insufficient. Demand stimulation is essential to driving Internet uptake. Affordability of devices is the primary challenge for policymakers, with even relatively low-cost devices being beyond the financial means of large numbers of citizens. Further, the price of data, even though relatively low, is simply beyond the means of many people for meaningful use. Shifting people from passive consumption of services to productive use represents a far greater challenge, however. This requires not only improving digital literacy in order to bring people online, but developing wider skillsets for the production of local content to stimulate demand, improving entrepreneurial application to create jobs and increasing the consumptive capacity of the economy more broadly to drive growth.

Uganda has the lowest percentage of people who have bank accounts among all the surveyed countries, at two percent, so the country benefits from mobile money. While these services allow large numbers of people to be financially included, the Government's decision to introduce a mobile money tax has undermined the impact of mobile money on financial inclusion in Uganda. The tax has not only led to a decline in the amount of value transacted (between 50% and 60%) but it seems also not to have met the intended fiscal objectives of the Government either. This needs to be re-evaluated.

As the country deliberates on the capitalisation of the fourth phase of the national backbone, it should evaluate alternative, cost-effective strategies to reach unserved areas. Consideration should be given to transferring the risk associated with long-term debt arrangements from the public to the private sector. Cross-continental and local commercial fibre companies could provide more competitive prices than incumbents. This competitive fibre rollout is happening elsewhere on the continent through fibre companies raising their own capital to open up new routes. The business model is inherently open access as fibre companies require as much traffic on their networks as possible to get a return on their investments as quickly as they can in order to capitalise further network extension to enhance the size and value of their networks.

It is clear that even if they were effectively regulated, current national licensing and GSM business models are not affordable for the majority of Ugandans. A regulatory transactional cost regime that enables lower-cost dynamic or secondary spectrum use in rural areas, where it is underutilised by national licensees and self-provisioned by community networks, micro-cells and wireless internet providers, needs to be investigated to make the Digital Uganda Vision a reality. Extensive free public Wi-Fi should be deployed through the RCDF at all public buildings to improve digital equality amongst citizens and enable those who have acquired smart devices to utilise Internet-based services more affordably.

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# LIST OF ABBREVIATIONS

<b>3G</b>	Third Generation	<b>MoICTNG</b>	Ministry of ICT and National Guidance
<b>3i</b>	Inclusive Internet Index	<b>MTR</b>	Mobile termination rate
<b>4G</b>	Fourth Generation	<b>NBI</b>	National Backbone Infrastructure
<b>BPO</b>	Business Process Outsourcing	<b>NBS</b>	National Broadband Strategy
<b>BTS</b>	Base Transceiver Station	<b>NDP</b>	National Development Plan
<b>DIRSI</b>	Diálogo Regional sobre Sociedad de la Información	<b>NITA-U</b>	National Information and Technology Authority-Uganda
<b>DUV</b>	Digital Uganda Vision	<b>NRI</b>	Network Readiness Index
<b>E-GIF</b>	E-Government Interoperability Framework	<b>OECD</b>	Organisation for Economic Co-operation and Development
<b>EIU</b>	Economist Intelligence Unit	<b>OTT</b>	Over-the-top
<b>FTA</b>	Free To Air	<b>RAMP</b>	RIA African Mobile Pricing
<b>GEA</b>	Government Enterprise Architecture	<b>RCDF</b>	Rural Communications Development Fund
<b>GDP</b>	Gross Domestic Product	<b>RIA</b>	Research ICT Africa
<b>GNI</b>	Gross National Income	<b>SDG</b>	Sustainable Development Goal
<b>GSM</b>	Global System for Mobile Communications	<b>SIM</b>	Subscriber Identity Module or Subscriber Identification Module
<b>GSMA</b>	GSM Association	<b>UCC</b>	Uganda Communications Commission
<b>HHI</b>	Herfindahl-Hirschman Index	<b>UGX</b>	Uganda Shillings
<b>ICT</b>	Information and Communication Technologies	<b>UICT</b>	Uganda Institute of Information and Communications Technology
<b>IDI</b>	ICT Development Index	<b>UNCDF</b>	United Nations Capital Development Fund
<b>IT</b>	Information Technology	<b>USD</b>	United States Dollars
<b>ITU</b>	International Telecommunications Union	<b>UTL</b>	Uganda Telecom Limited
<b>LG</b>	Local Government	<b>VAT</b>	Value Added Tax
<b>LTE</b>	Long Term Evolution	<b>WEF</b>	World Economic Forum
<b>MDAs</b>	Ministries, Departments and Agencies		
<b>MDG</b>	Millennium Development Goal		
<b>MoES</b>	Ministry of Education and Sports		

# 1

## STATUS OF THE ICT SECTOR

### 1.1 OVERVIEW

The Global South is undergoing rapid social and economic changes as a result of the confluence of mobile and Internet technologies, with the potential to contribute to employment and economic growth. Though broadband impact studies vary on the exact contribution that increases in broadband penetration make to economic growth, there is enough evidence that once it reaches a critical mass of about 20 percent, it correlates with increases in Gross Domestic Product, job creation, the broadening of educational opportunities, enhancing public service delivery and rural development.<sup>2</sup> In recognising the importance of information and communication technologies (ICTs) as a catalyst for economic growth and essential for achieving the sustainable development goals (SDGs), a number of countries, especially developing ones, have developed initiatives and policies aimed at improving connectivity.

The critical question always is: “To what extent are policies achieving the desired outcomes?” Several global indices have been developed by various agencies including the International Telecoms Union (ITU), the World Economic Forum (WEF), the World Bank, and others to guide comparative and progressive assessment. These

indices are able, to varying degrees, to track prices, cost drivers and how conducive the environment is to investment in order to identify ICT sector performance at country level. They are however generally not able to establish the cause of any identified problems, other than in the broadest terms.

To identify country-unique challenges with the aim of providing evidence-based policies for specific countries, in 2017–2018 Research ICT Africa (RIA) conducted nationally representative surveys in Uganda and nine other African countries during 2017 - 2018, as part of the 22 country surveys conducted with partners Diálogo Regional sobre Sociedad de la Información (DIRSI) in Latin America and LIRNEasia in South East Asia. This report is specific to Uganda, but it brings in comparatives from the other countries surveyed as summarised in Table 1.

### 1.2 VISION 2040

The Uganda Government recognises ICTs as critical to the delivery of its national Vision 2040.<sup>3</sup> Digital Uganda Vision (DUV) provides government’s integrated policy and strategic framework of how ICT shall support the delivery of the national Vision 2040 by striving to

**Table 1:** Countries that participated in the multi-partner survey

RESEARCH ICT AFRICA (AFRICA)	DIRSI (LATIN AMERICA)	LIRNEASIA (SOUTH EAST ASIA)
Ghana	Argentina	Bangladesh
Kenya	Colombia	Cambodia
Lesotho	Guatemala	India
Mozambique	Peru	Myanmar
Nigeria	Paraguay	Sri Lanka
Rwanda		Pakistan
Senegal		
South Africa		
Tanzania		
Uganda		

2 Roller, L.H. & Waverman, L. (2001). “Telecommunications infrastructure and economic development: A simultaneous approach”. *American Economic Review*, 91 (4): 909-923.

3 Uganda Vision 2040, <https://www.gou.go.ug/content/uganda-vision-2040>

empower citizens and achieving the goals of universal inclusion, sustainable development, economic progress and poverty eradication through digital innovation. The DUV aims to use ICTs to deliver various government and private services, including but not limited to education, health, agriculture, social security, banking, justice and communications.<sup>4</sup>

ICT and ICT-enabled services have been identified by the Government of Uganda as being crucial to transforming its economy and people's lives through job creation, accelerated economic growth and increased productivity. Vision 2040 clearly stipulates that there is potential to improve the availability of digital content and e-products; to provide automated government processes and inter-agency connectivity; to bridge the gap between industry and academia; and to enhance the commercialisation of research and development.

In a bid to improve ICT skills, digital literacy and knowledge, the Government has committed to develop, improve and retool its ICT knowledge base; build robust ultra-high-speed, pervasive, and intelligent ICT infrastructure all over the country, in line with changing technologies; foster and support business process outsourcing (BPO) business activities; and encourage innovation to harness the full potential of the digital economy and technological innovation.

### 1.3 NATIONAL DEVELOPMENT PLANNING

Vision 2040 identifies ICT access and utilisation not just as a crosscutting development enabler but also as a major business opportunity; and provides the foundation for the development of the five-year National Development Plans (NDPs). Currently implementing her second National Development Plan NDP II (2015/16–2019/20), Uganda aims to position itself as a regional power in Africa by improving the legal and regulatory frameworks to respond to industry needs; enhancing ICT expertise; promoting an informed and aware citizenry for socio-economic transformation; and enhancing the secure use and application of ICT services in business and service delivery.

Specifically, through the harnessing of knowledge and ICT, the Government commits itself to develop, improve and retool its ICT talent-building mechanism by adopting globally benchmarked, industry-rated skills assessment as well as training and certification standards.

Furthermore, the Government intends to: ensure effective interoperability of processes and/or systems across government, the private sector, civil society, other governments and development partners; promote the development of a hi-tech industry; review all legal and regulatory frameworks in the ICT sector to allow for efficient operationalisation, enforcement and improvement of cyber laws; and enhance information security.

Under the ongoing implementation of NDP II, four key ICT sector objectives were identified: improve the legal and regulatory frameworks to respond to industry needs; enhance ICT expertise; promote an informed and aware citizenry for socio-economic transformation; and enhance the secure use and application of ICT services in business and service delivery.

The identified challenges facing the sector include low levels of digital literacy and general apprehension with respect to ICTs; inadequate complementary infrastructure for effective roll out. of ICT facilities; vandalism of ICT infrastructure; onerous taxation regimes for the sector; and fragmented ICT initiatives across government due to disparate mandates. While there is still tension and unplanned overlap between some National Information and Technology Authority-Uganda (NITA-U) and Uganda Communication Commission (UCC) initiatives, efforts by the NITA-U to rationalise government ICT initiatives over the last four years have borne fruit.<sup>5</sup> In addition, NDP II explicitly stipulates some ways to address the access and affordability gaps through implementing last-mile connectivity countrywide and promoting production as well as the use of low-cost locally assembled devices in collaboration with the private sector.

The plan correctly identifies the broad challenges facing the country that need to be addressed to harness the opportunities arising from the development of the

4 Digital Uganda Vision, <https://ict.go.ug/initiatives/digital-vision/>

5 See NITA-U's rationalisation and harmonisation strategy at <https://www.nita.go.ug/sites/default/files/publications/Rationalisation%20and%20Harmonisation%20of%20IT%20Initiatives%20Services%20in%20MDAs.compressed.pdf>

sector. However, the role identified for ICTs in the plan needs to be clearly linked to policies, and particularly strategies for implementation, to realise these objectives on the ground.

As a blueprint for the country, the implementation of the Digital Uganda Vision would move Uganda a considerable way towards meeting the Sustainable Development Goals (SDGs), but a considerable gap still exists between this enabling role that ICT can play in a modernising economy and public sector, and the conditions that exist on the ground. The sections that follow identify the existing policy and legal instruments available for the implementation of Vision 2040 and the Digital Uganda Vision, and propose the review, consolidation and reformulation of policies, laws and regulations to meet the challenges arising from the gap analysis.

## 1.4 POLICY AND LEGAL ENVIRONMENT

The National ICT Policy (2014) is aimed at supporting realisation of Vision 2040 with broad objectives that include building a knowledge-based human capital, promoting innovation in economic and social systems, expanding ICT infrastructure and its integration, improving utilisation of ICT services, enhancing research and innovation in ICT and improving ICT governance in Uganda. While the policy was formulated based on the Millennium Development Goals (MDGs) as opposed to the SDs that are the focus in NDP II, the policy does provide sufficient context and guidance for derived documents like the ICT Sector Strategy and Investment Plan (ICT-SIP), the National Broadband Policy, and the National Broadband Strategy (NBS).<sup>6</sup>

The National Broadband Policy (2018) also builds on the objectives of Vision 2040 and NDP II by highlighting the role of broadband internet as an enabler for socio-economic development and calling for broadband infrastructure to be planned for like other public infrastructure (for example roads, railways, or power lines). It emphasises ICT infrastructure sharing among licensed providers, universal access to broadband internet across the country including rural and hard-to-reach areas and

directs regulators to review licensing regime to ensure that licensees adhere to ICT sector strategic objectives.

With only 60 of 121 districts in the country connected by early 2018, and 3G coverage over only half of the population, clearly the liberalisation of the market on its own has not delivered on national policy objectives of ubiquitous broadband.

The ICT-SIP (2015/16-2019/20) is a five-year plan to guide the development of the ICT sector in line with Vision 2040 and NDP II. The ICT-SIP covers the key pillars of infrastructure, human capacity, cyber-security, e-government, local content, and services. It aims to increase ICT access and broadband speeds to 4Mbps and 30Mbps for rural and urban households, respectively.

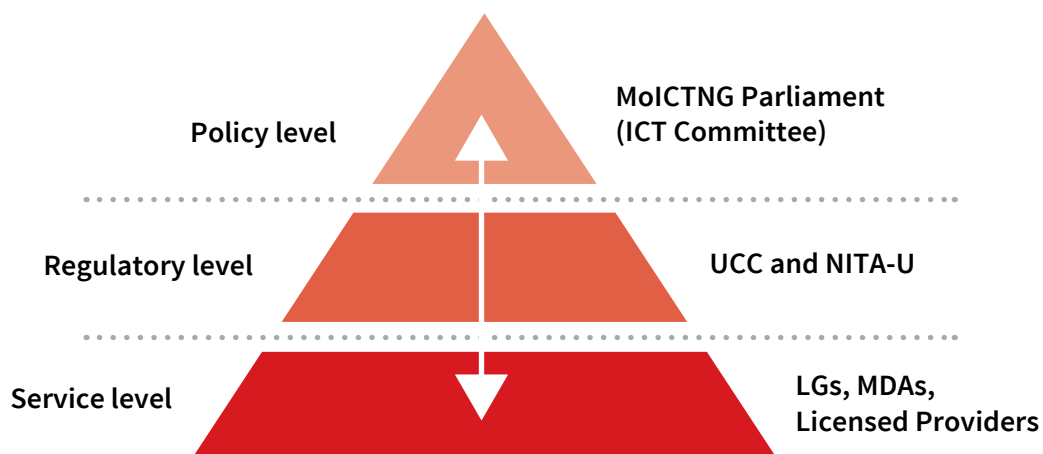
The National Broadband Strategy (NBS) details Uganda's path to socio-economic transformation on the back of affordable high-quality broadband internet. Both the ICT-SIP and NBS identify universal access to broadband as critical, with the NBS defining universal service as "access to ICTs within a radius of approximately 5km per household." The NBS also provides targets for 2020: broadband penetration of 50 percent and 100 percent for rural and urban areas, respectively; 100 percent of district and sub-county headquarters, health centres and secondary schools to have broadband connectivity; 50 percent of primary schools with broadband connectivity; the cost per Mbps of broadband in relation to average income reduced to 10 percent; and 40 percent of the population being digitally literate.

In addition to the policies and strategies outlined above, other ICT policies and strategies in place and operational include the e-Governance Framework Policy, the National Information Security Framework, spectrum policy, e-Waste Management Policy and IPv6 Transition Policy.

## 1.5 INSTITUTIONAL ARRANGEMENTS

The ICT sector is organised in three functional levels as highlighted in Figure 1. At the top or policy level, the Ministry of ICT and National Guidance (MoICTNG) oversees the sector and provides the necessary policy

<sup>6</sup> The National Broadband Strategy defines broadband as follows: "For the duration of this strategy (2016–2020), broadband for Uganda means a robust connectivity that is affordable, always on and delivers a minimum of 3Mbps to the user for applications, content and services." RCDF Operational Guidelines 2017/18–2021/22 (RCDF III) p.11.



**Figure 1:** Functional levels of the ICT sector in Uganda

framework to guide implementation. In the middle or regulatory level, the Ministry is supported by regulatory agencies that include the Uganda Communications Commission (UCC) – regulating the telecommunications sector and also responsible for management and implementation related to the Rural Communications Development Fund; and the National Information Technology Authority Uganda (NITA-U) – regulating the IT sector and also responsible for roll-out and operation of the National Backbone and e-Government Infrastructure. At the bottom or service provision level are the public and private players that provide services directly to citizens. Public sector players encompass Local Governments (LGs) as well as Ministries, Departments and Agencies (MDAs) while private sector players are licensed and supervised by the regulatory bodies.

The Parliament of Uganda provides an oversight role and facilitates the policy process for the work of the Government in the ICT sector through its sectoral Committee on Information, Communication Technology and National Guidance that oversees the Ministry.

Some structural challenges are very evident. Despite the reality of convergence, there is separation in regulatory functions related to IT and Telecommunications. In most countries, regulation has been placed in the hands of a converged regulator, and Uganda needs to recognise this reality. To persist otherwise is to create grounds for continuing conflict between the two agencies responsible for regulating in a converged technology and services environment, and maintain confusion among operators and practitioners in the ICT sector. In addition, regulators have also been given implementing

responsibility. UCC initially addressed this by placing RCDF implementation under a different and operationally independent board, but the lines have blurred over the years until RCDF falls directly under the regulatory arm. NITA-U also has its regulatory and operational functions under the same operational authority.

Added to these structural challenges has been the historical lack of coordination among MDAs, with most taking disparate ICT paths and projects. Government, through NITA-U, has now taken some major steps in addressing this through the rationalisation strategy, but a lot still needs to be done. The Digital Uganda Vision indeed The Vision identifies the lack of co-ordination by the state and between the various MDAs as a factor in Uganda’s poor performance on global indices.

All these challenges need to be addressed to enable the cross-cutting role of ICT in a digital economy as envisaged in the NDP II and the Digital Uganda Vision, with its focus on innovation and human development.

This next section highlights some of the primary institutions directly responsible for regulation and implementation in the communications sector.

### 1.5.1 Uganda Communications Commission

Uganda Communications Commission (UCC)’s mandate is to regulate communications, including telecommunications, broadcasting, the film industry (the Stage Play and Public Entertainments Act, theatres for public entertainment), and postal services in the country. In addition, UCC manages the Uganda Institute of Information and Communications Technology (UICT), the only government institutions

specialising in training ICT mid-level technicians. UCC also manages the Rural Communications Development Fund (RCDF) established to cater for underserved and unserved areas of the country under the Uganda Communications Act 1997 and the successor Act, the Uganda Communications Act 2013.

During the 1990s, Uganda was among the first African countries to separate policy, regulation, and operation of telecommunication networks and services by setting up an independent regulator (UCC) within the context of the General Agreement on Tariffs and Trade's (GATT) Basic Telecommunications Services that led the liberalisation of traditional monopoly telecommunications sectors across the world. UCC pioneered the implementation of regulatory reform on the continent, and was in its early years internationally recognised as one of the most well-established and effective regulators on the continent. Uganda's policy was particularly cognisant of the dearth of telecommunications services and set universal service obligations as a key component of the sector to achieve universal access.

## INSTITUTIONAL MISALIGNMENT

Some of the responsibilities of UCC are beyond the scope of economic regulation in the communications sector, such as the responsibilities for film and theatre intended for public entertainment that are not specifically for electronic distribution. UCC was also handed the former telecoms and postal training institute as part of the restructuring of the sector. Some years after it was built up and well-established as the Uganda Institute of Information and Communication Technology, it was, through a government directive based on consistency of mandate, handed to the Ministry responsible for education. The Ministry was however to fund it sufficiently, and it subsequently handed back to UCC.

As shown in the regulatory analysis below (see section 1.6), UCC has instituted several key interventions known to stimulate a more effective and competitive environment, with the associated benefits of positive coverage, pricing and quality outcomes such as setting a glide

path for mobile termination rates (MTRs), setting aside spectrum for auction, and carrying out market reviews<sup>7</sup> to determine any existing levels of dominance. Because of their centrality to creating a fair and competitive environment, there is concern among stakeholders that many of these have not been implemented. Some believe this is due to the regulator succumbing to commercial or political pressure or threats of legal review. Others attribute the increased political attention paid to the regulator to the incorporation of broadcasting into its mandate. Whatever the reasons, there is a view that this has eroded the authority of the UCC over time and created uncertainty in the sector for investors and consumers.<sup>8</sup>

In a similar vein, the changes in direct funding of the UCC, from a levy on operator revenues to the funds in future going to a consolidated fund and the UCC receiving a budget appropriation, are seen as potentially undermining the autonomy of the UCC. The consolidation of state revenues in a single fund subject to treasury controls is not uncommon and is often regarded as good practice. Although it does not seem clear yet exactly how budget allocations and distribution will occur, ways of safeguarding the regulator's autonomy and effectiveness should be considered. These could include medium-term (three-year) budgeting and annual distributions of the budget with some parliamentary oversight. This would provide the regulator with the certainty required for planning, and flexibility to shift priorities in a fast-changing environment.

## REGRESSIVE TAXATION

Stakeholders also highlighted the lack of understanding of the sector by decision-makers in parts of the Government that impacted directly on the sector. They noted the efforts by the UCC to bring down the cost of services with appeals to the Government to reduce taxes on airtime and mobile money services, which have been rejected by Treasury, despite the negative impact on national digital transformation objectives and the affordability gap. However, despite their own operator data showing the negative impact of social networking

7 "First Draft – Competition Report for the UCC – Part 1", <https://www.ucc.co.ug/files/downloads/Extract%20from%20Report%20on%20Competition%20and%20Dominance%202009.pdf>; "UCC Market Definition and Market Power Assessment: Final Project Report",

8 Stakeholder interviews. Kampala. February 2018.

taxes on the data revenues of mobile operators struggling to shift from a voice to a data environment, UCC has defended social networking taxation.<sup>9</sup>

### 1.5.2 Rural Communications Development Fund

UCC set up the RCDF during 2001 as provided for in the Uganda Communications Act, 1997. The Act has undergone revision since then, but the Fund remains a key feature of the law. The Act clearly stipulates that the RCDF is meant to establish and administer a fund for the development of rural communications and ICT in the country.

The RCDF was set up with the objective of ensuring that through targeted interventions, all those in Uganda that would otherwise not be reached through commercial interventions could still exploit ICT infrastructure and services for their own well-being and contribute to national economic development.

The purpose of the RCDF as spelled out in the Mission is: “To facilitate universal access to high level capacity broadband for all Ugandans through targeted interventions addressing location, physical inability, gender and cost barriers.”

Another key RCDF role is to set aside a fund to be used to contribute to ICT initiatives developed and owned by other MDAs as well as non-governmental organisations and the private sector. The availability of the fund has already attracted a number of initiatives among disadvantaged groups.

Currently, the RCDF is engaged in the provision of computers to schools and associated training in collaboration with the Ministry of Education and Sports (MoES) and other key players. Although there are mixed reviews on the success of this project, with questions around sustainability, maintenance and teacher training, these are essentially issues which fall under the mandate of the MoES and need to be addressed in the context of the national education system.<sup>10</sup>

The best use of the RCDF needs to be reviewed in the light of the fast-changing data environment and the demand-side challenges facing Uganda. The utility of the Fund needs to be assessed against the relatively high universal service obligations that exist for licensees, the benefits derived from its existence and more

effective and innovative ways of fulfilling its mandate of facilitating affordable access to broadband.

### 1.5.3 National Information Technology Authority Uganda

National Information Technology Authority Uganda (NITA-U) is responsible for the integration and operation of Information Technology (IT) systems across government, the harmonisation of IT standards within the public sector, and the rollout and operation of the National Backbone Infrastructure (NBI) across the country.

Currently, NITA-U is completing the design of a turnkey national integrated enterprise system to modernise the public sector, which includes a data warehouse and interfaces with key private sector institutions, including banks, through a dedicated cloud. NITA-U is also working on key public infrastructure to facilitate secure e-transactions and support BPO or IT-enabled services, including incubation and training. NITA-U has initiated steps to develop a Government Enterprise Architecture (GEA) and E-Government Interoperability Framework (E-GIF) to facilitate coordination and delivery of integrated services across government MDAs as identified in the Digital Vision Uganda by ensuring better interoperability and optimal use of ICT infrastructure.

Some stakeholders believe that locating the operational functions of the NBI in a regulatory and procurement agency is misplaced and has produced a conflict of interest for NITA-U, as both a national procurer of services and a competing operator. From a market perspective, the best quality and price of services for the public sector should be achieved through a transparent, competitive tender. However, NITA-U argues that its key objective is to enable e-government and ensure that there is infrastructure to do so to the lowest level of local government at a sustainable cost. It believes that leasing, outsourcing or owning are all decisions led by cost-effectiveness. NITA-U contends that there is no conflict of interest, as all MDAs are required to use the NBI wherever it is available. This in itself may be problematic in a competitive sector, where the government is one of the largest clients.

9 John Ivan Kisekka, “Do We Need the Social Media Tax? UCC ED Godfrey Mutabazi Explains”, 20 July 2018, <https://www.techjaja.com/do-we-need-the-social-media-tax-ucc-ed-godfrey-mutabazi-explains/>

10 Stakeholder interviews. March 2018.



## 1.6 SECTOR CHALLENGES

The UCC, which has historically enjoyed a high degree of autonomy, has failed to implement some critical regulatory interventions that would have improved competition in the market and increased uptake of digital technologies. Over the years, UCC has come under increasing commercial and government pressure, especially after the broadcasting sector fell under its ambit. Examples include :

- UCC's failure to act on findings of dominance arising from critical market reviews;
- implementation of Mobile Termination Rate (MTR) glide paths following costing studies; and
- assignment of high-demand spectrum and delays to digital migration.

These are all symptoms of institutional arrest that have created growing uncertainty in the sector, since the comprehensive liberalisation of the market in 2005.

The opportunities offered to citizens, small, medium and micro enterprises and the public sector by new technologies and platforms also present some dangers. Although these digital platforms and services operate across borders and are governed to some degree by global governance technical standards, and increasingly also legal conventions, they need to be implemented at a national level to have effect. A clear digital governance framework to deal with issues of cyber-security, privacy and data protection is needed to create a trusted environment to bring citizens safely online. The Ministry of ICT and National Guidance has formulated some legislation and regulations with the support of NITA-U and UCC to address some of these gaps like the Computer Misuse Act 2011, the Data Protection and Privacy Bill (published), the Electronic Signatures Act 2011, the Electronic Signatures Regulations 2013, the Electronic Transactions Act 2011 and the Electronic Transactions Regulations 2013.

The benefits of improved data flows and information sharing should be leveraged through an open data framework for the public and private sectors, with the potential of creating jobs, applications and local content

innovation more widely. If successfully implemented, this will provide a key pillar in the Digital Uganda Vision.

Despite the country's policy of using ICTs to enhance its social and economic performance, there is consensus in the global ICT indices that Uganda is not making sufficient progress towards the objectives in the NDP II and those proposed in the Digital Uganda Vision. Uganda's position has been undermined by lack of co-ordination across government and the actions of one arm of government pursuing its objectives without considering the negative impact on another arm. Although the various global indices are highly problematic for different reasons, they are indicative of Uganda's least developed country status and its relatively poor performance, which has been highlighted by the Government of Uganda in preparing for the Digital Uganda Vision. Uganda is ranked 152 out of 176 countries in the International Telecommunication Union (ITU)'s ICT Development Index (IDI).<sup>11</sup> In the Network Readiness Index (NRI), Uganda is ranked 121 out of 139 countries,<sup>12</sup> and 64 out of 75 countries by the Economist Intelligence Unit (EIU) in the Inclusive Internet Index (3i).<sup>13</sup>

The findings of the "After Access" nationally representative survey in the next section provide some demand-side insights and an accurate picture of ICT access and use in Uganda, and the factors contributing to the poor performance in the bench marking that follows.

This provides policy makers with precise points of policy intervention to address content specific problems, rather than relying on incomplete and patchy supply-side data and generalised best practice solutions.

11 ITU's Measuring the Information Society 2017, <http://www.itu.int/net4/itu-d/idi/2017/index.html>

12 World Economic Forum's NRI <http://reports.weforum.org/global-information-technology-report-2016/>

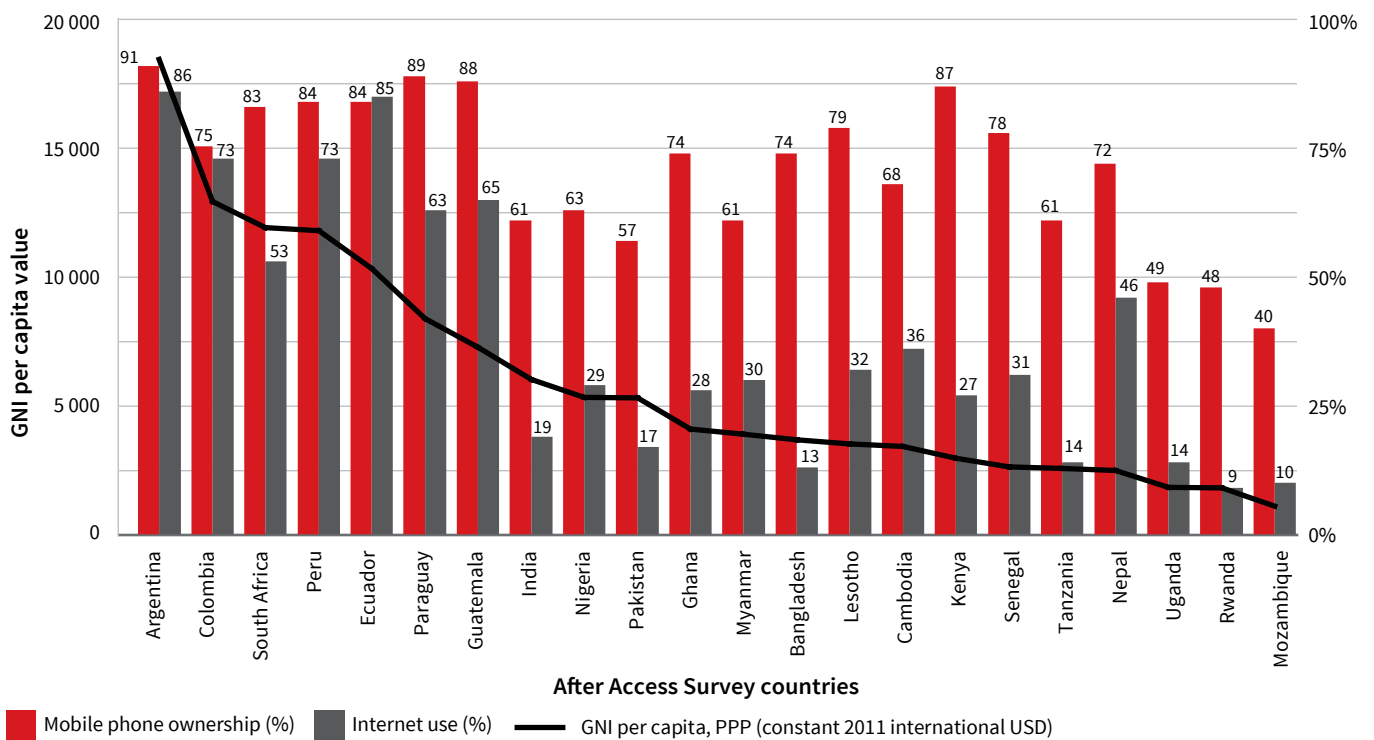
13 Economist Intelligence Unit's Inclusive Internet Index, <https://theinclusiveinternet.eiu.com/>

# 2

## DIGITAL DIVIDE IN UGANDA AND THE GLOBAL SOUTH

Evidence from the nationally representative surveys conducted across 20 countries (including Uganda) in 2017-2018 shows that mobile phone penetration and Internet use systematically correlate with Gross National Income (GNI) per capita. South Africa is the only African country in the survey with a similar GNI per capita to the wealthier Latin American countries, at USD 11 923. With a mobile penetration rate of 83 percent, South Africa compares relatively well to Argentina (91%), Paraguay (89%) and Guatemala (88%), which lead in terms of mobile phone penetration. However, despite having amongst the highest GNI per capita of all countries surveyed, below Argentina (USD 18 461) and Colombia (USD 12 938), only about half (53%) of the South African population use the Internet as compared to about eight in ten in Argentina, seven in ten in Colombia and Peru, and six in ten in Guatemala and Paraguay.

Uganda is the third poorest surveyed country in Africa, with a GNI per capita at USD 1 820, with only Rwanda (USD 1 811) and Mozambique (USD 1 093) being lower. These three are among the countries with the lowest mobile phone penetration and Internet use rates. While it is broadly true that Internet use and mobile phone penetration are broadly aligned with a country's economic status, there is evidence that among the cluster of poor countries, other factors are more important than economic status. Despite Tanzania (USD 2 557) being marginally better off than Uganda, both countries have similar Internet use rates, at 14 percent. However, Tanzania has a significantly higher mobile phone penetration rate, at 61 percent, as compared to 49 percent in Uganda. Rwanda (9%) and Mozambique (10%) have the lowest Internet use. Mozambique has the lowest mobile phone penetration rate, at 40 percent (see Figure 3).



**Figure 2:** Mobile phone and Internet penetration against GNI per capita

Source: RIA After Access Survey data, 2017/2018–2018

Note: Data for Myanmar and Sri Lanka could only be collated after this comparison was done, and could not be included here.

The Lesotho survey was done in 2016.

GNI per capita reflects 2017 data.

**Table 2:** Access to electricity in surveyed African countries

	NO ELECTRICITY %	MAIN ELECTRICITY GRID %	GENERATOR %	SOLAR %	OTHER %
Ghana	14	85			1
Kenya	34	42		16	8
Lesotho	53	34	1	11	<1
Mozambique	52	24		22	2
Nigeria	22	66	11		
Rwanda	68	29	3		1
Senegal	14	58	11	10	7
South Africa	6	89	1	1	3
Tanzania	53	33		13	1
Uganda	45	18		25	12

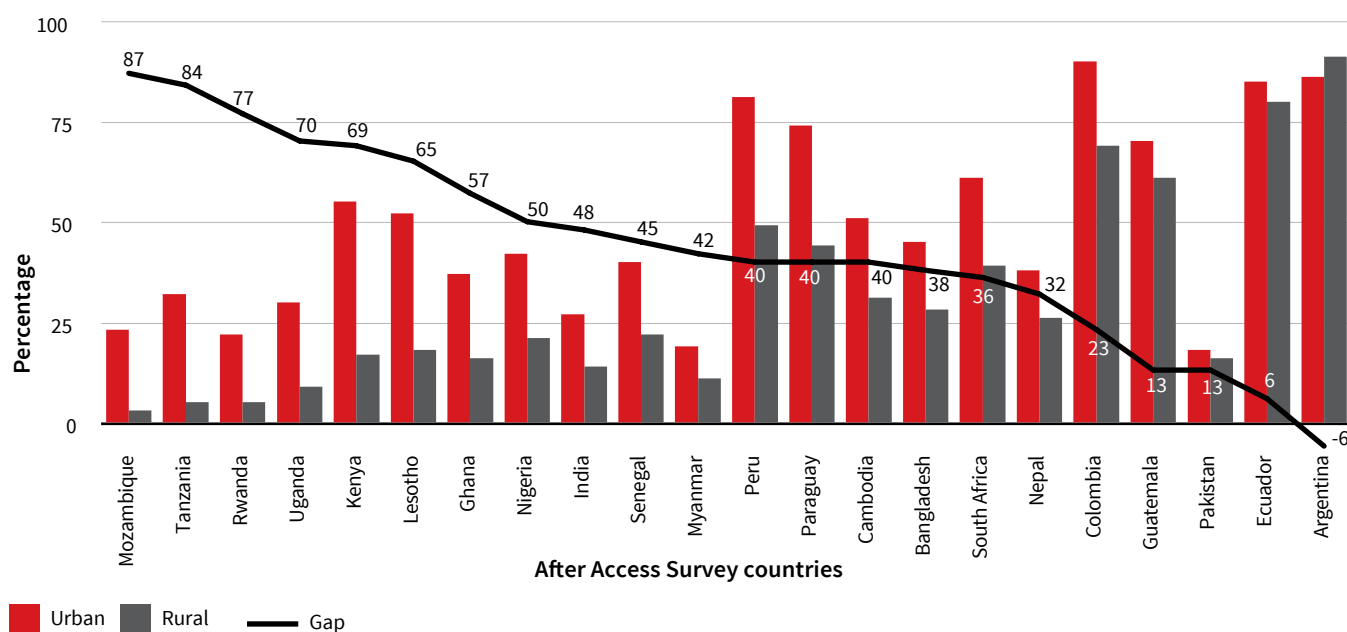
Source: RIA After Access Survey data, 2017/2018–2018

Notes: The Lesotho survey was done in 2016.

The preconditions for the digital take-off envisaged by the Digital Uganda Vision have not been met, with poor infrastructural development being the primary driver of low Internet use and mobile phone penetration in Uganda. Uganda has the lowest electricity consumption rate of the African countries surveyed, at an average of 71kWh/year,<sup>14</sup> and the 2017–2018 After Access survey shows that a smaller proportion (18%) of households in Uganda has access to the main electricity grid, only higher than Lesotho (11%) (see Table

2). The urban–rural electrification divide in Uganda is high, at 85 percent, with only 7 percent of households in rural areas connected to the main electricity grid, as compared to 48 percent in urban areas. The electrification gap between urban and rural areas has translated into a huge urban–rural gap in Internet use of 70 percent, with only 9 percent of Ugandans living in rural areas having access to the Internet and about a third (30%) of urban dwellers using the Internet.

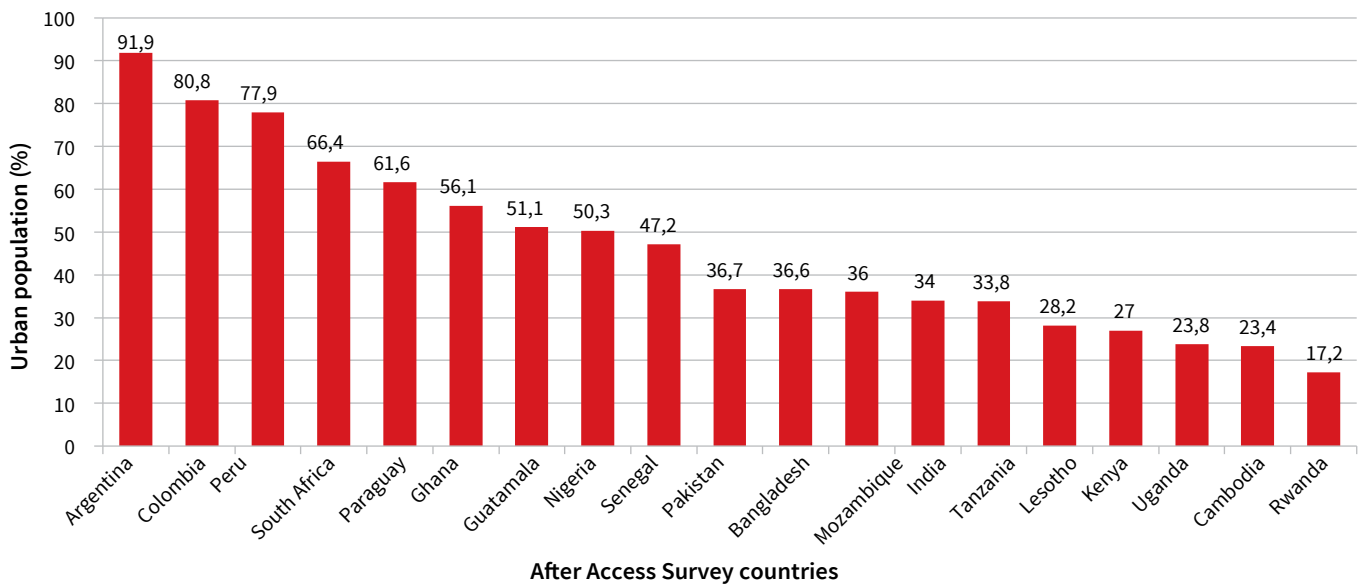
The urban–rural gap of 70 percent in Uganda is



**Figure 3:** Urban–rural disparity in Internet use in the Global South countries surveyed

Source: RIA After Access Survey data, 2017/2018

14 “Reality Check: Powering Uganda’s Transformation”, <https://cda.co.ug/wp-content/uploads/2018/08/ENERGY-REALITYCHECK-2018-COMPLETE.pdf>



**Figure 4:** Rate of Urbanisation among survey countries

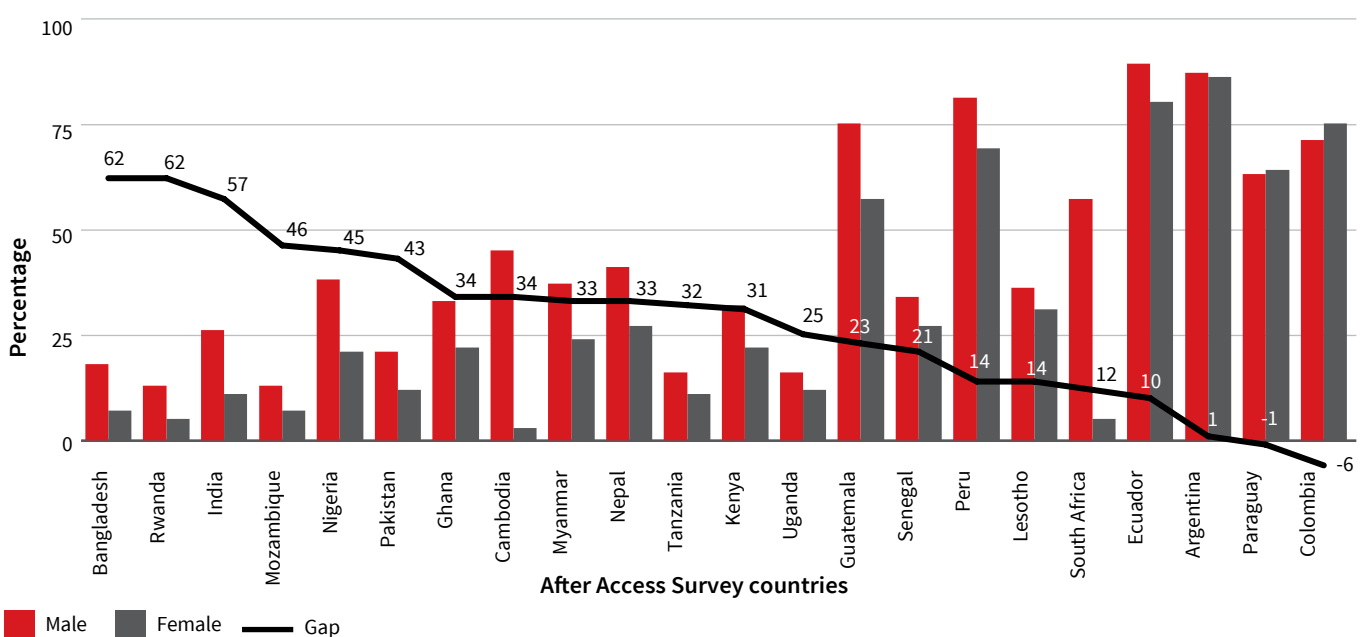
Source: CIA World Factbook with estimates from 2018

only lower than Rwanda (77%), Tanzania (84%) and Mozambique (87%). South Africa has the lowest Internet use urban-rural gap among African countries, at 36 percent, but it is higher than Argentina at -6 percent ( whose population is almost entirely urbanised) , Colombia (23%), Guatemala and Pakistan (13%) and Nepal (32%) (see Figure 2).

The urban-rural gap in Internet use is partly explained by the higher rate of urbanisation in Latin America and South East Asia as compared to Africa. In some countries like Argentina, the poor tend to live in cities or

urban towns while the rich are the large rural farmers, which explains why rural areas have better Internet use compared to urban areas. Figure 4 shows correlation between the degree of urbanisation and the urban-rural gap. Higher populations in urban areas are much easier for providers to serve compared to rural populations that tend to be more dispersed.

Despite Uganda having a high Internet use gap among urban and rural residents, the gender gap is amongst the lowest of the African countries surveyed, at 25 percent, with only Senegal (21%), Lesotho (14%) and South



**Figure 5:** Gender disparity in Internet use in Africa and the Global South

Source: RIA After Access Survey data, 2017/2018

Africa (12%) lower. Evidence suggests that mobile phone penetration and the gender gap are also broadly aligned with GNI per capita, but empirical research using the After Access data shows that income and educational level are more likely to explain differences in penetration levels. At an early stage of adoption, individuals with higher incomes are more likely to adopt and use the Internet than relatively poor individuals. The gap between men and women reflects that women are generally less educated and therefore have lower incomes (compounded by gender-based income discrimination where qualifications are the same). In countries where there are significant differences in income levels between males and females, as in Rwanda, which has the lowest Internet penetration rate and the highest gender gap, the gender gaps are larger (Figure 5). Populous countries such as Bangladesh, India and Nigeria seem to face particular challenges both in getting their populations online and in moving towards greater gender equity.

One may argue then that using the Gini index or Gini coefficient,<sup>15</sup> a statistical measure that indicates income distribution within the population of a given country may have been more suitable compared to using GNI per capita (see Figure 2). One shortcoming is that informal economic activity makes up a large proportion of the economic output of developing countries, but it is

difficult to capture, making GDP and income data from these countries very unreliable. In addition, a country Gini coefficient also masks the demographic variations across different groups within the population.

## 2.1 INHIBITORS OF INTERNET USE

The primary inhibitors of Internet use are linked to affordability of devices and services and digital illiteracy (see Figure 6). The survey shows that of those who do not use the Internet (86% of the population) roughly half have no Internet-enabled device, such as computers and smartphones. Uganda has the second lowest smartphone device penetration rate among mobile phone users, at 16 percent, after Rwanda's 9 percent (see Figure 7). About a third (36%) of non-Internet users are digitally illiterate, with 23 percent stating that they do not know how to use the Internet while 13 percent gave a negative assessment of the need for the Internet.

## 2.2 REGRESSIVE POLICIES INCREASING DIGITAL GAP

The Government of Uganda has implemented a number of regressive tax policies, which inhibit the majority of Ugandan residents from taking up digital technologies. In 2018, the Ugandan Government introduced social media and mobile money taxes. This put a serious

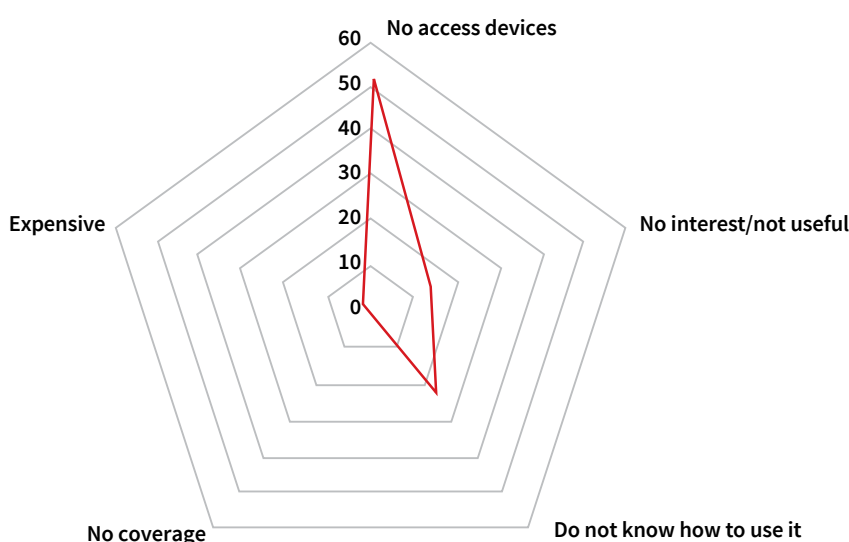


Figure 6: Reason for not using the Internet in Uganda

Source: RIA After Access Survey data, 2017/2018

15 World Bank Gini index estimates: <https://data.worldbank.org/indicator/SI.POV.GINI>

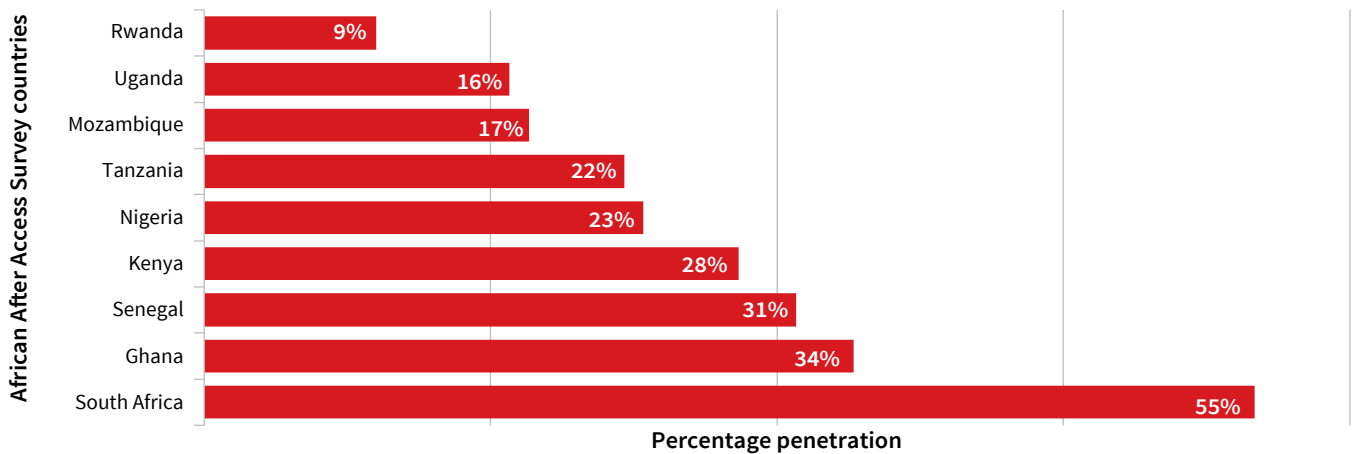


Figure 7: Mobile phone users with smartphone devices  
 Source: RIA After Access Survey data, 2017/2018  
 Note: Lesotho's smartphone penetration data is unavailable.

break on Internet access and particularly use. Social media drives Internet take-up. Of the mere 14 percent of the population that use the Internet, 99 percent are on social media (Facebook, Twitter, WhatsApp and Skype). The social media tax is UGX 200 (USD 0.05) per day for the use of 60 mobile apps, including Facebook, Instagram, Twitter and WhatsApp.<sup>16</sup> Mobile money users are charged 0.5 percent on the value of withdrawal transactions, in addition to excise tax levied

on withdrawal fees. While one can argue that having a mobile money tax will encourage people to keep mobile money in their wallets by discouraging withdrawals, helping to grow the circulation of digital money, it could also result in the decline of mobile money use as people use it less for fear of losing money during withdrawals.

While the social media tax was clearly intended to raise revenues, the stated intention when it was gazetted was to curtail “gossip”.<sup>17</sup> In this sense, the

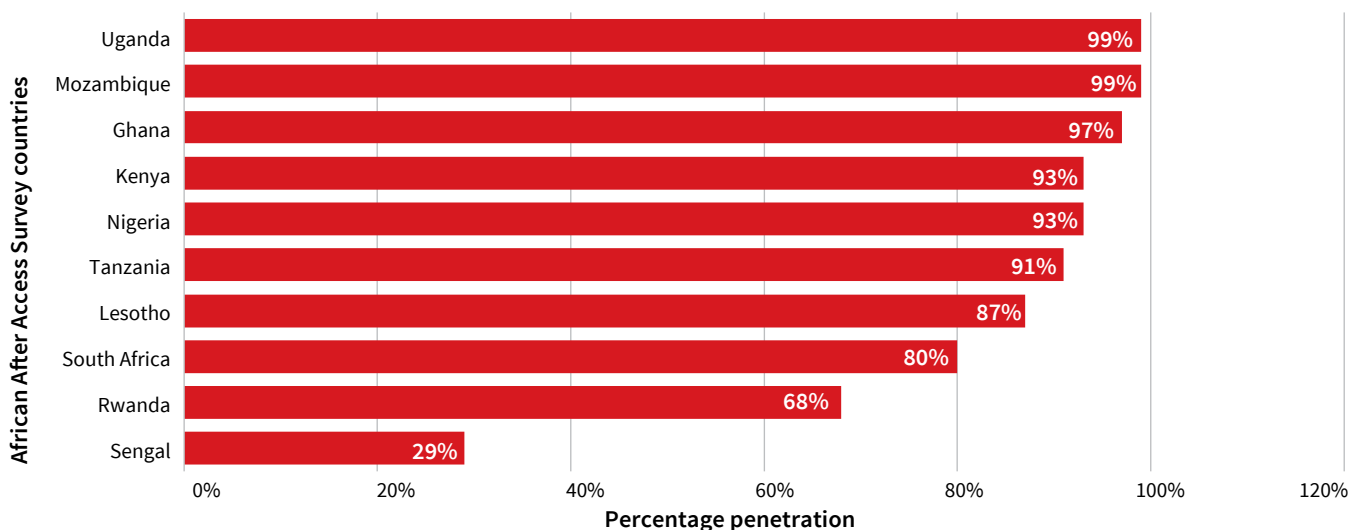
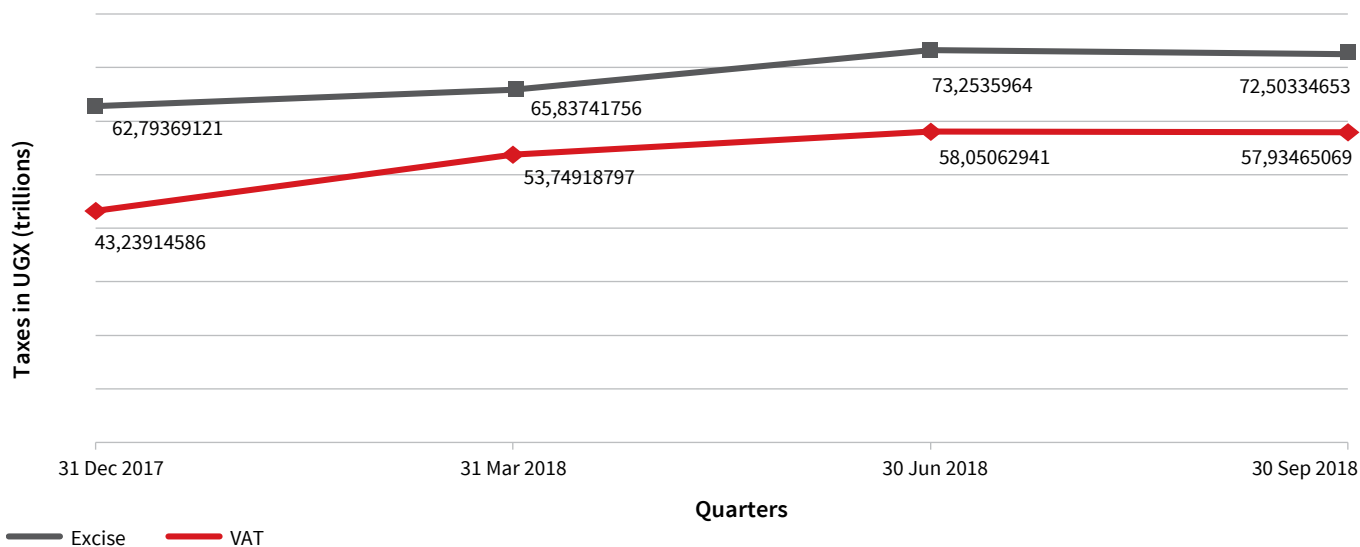


Figure 8: Social media use among Internet users  
 Source: RIA After Access Survey data, 2017/2018

16 Emily Dreyfuss, “Uganda’s Regressive Social Media Tax Stays, at Least for Now”, <https://www.wired.com/story/uganda-socialmedia-tax-stays-for-now/>

17 Amnesty International, “Uganda: Scrap Social Media Tax Curtailing Freedom of Expression”, <https://www.amnesty.org/en/latest/news/2018/07/uganda-scrap-social-media-tax-curtailing-freedom-of-expression/>



**Figure 9:** Quarterly taxes from the telecommunications sector  
*Source Uganda Revenue Authority, 2018*

social networking tax also serves as an instrument for limiting social and political discussion.

Internet use in Africa is mainly driven by the appetite for social media. The survey findings suggest that about 25 percent of people aged 15 years and above (which is 90 percent of people using the Internet) use social media (Twitter, Facebook and others). Ghana, Mozambique and Uganda have the highest number of social media users (+95% of Internet users). Rwanda has the lowest social media use, at 68 percent, and the lowest Internet penetration, followed by South Africa, with 80 percent of its Internet population using social media (see Figure 8).

Viewed from this perspective the tax makes far more sense as a “sin” tax. Taxes are generally levied as a means of ensuring that consumers pay the full social cost of a good or service. In most cases, policymakers levy a tax if the good has a negative externality and is being over-consumed. Despite this stated intention of the social networking tax, the dramatic drop in data use was clearly not envisaged. Rather, it was intended to serve the dual (though apparently contradictory) purpose of constraining social media use and raising revenue for the treasury. However, this has had a double negative effect on the treasury. Not only have the social media tax and the mobile money tax yielded far less

than the revenue forecasts, but the reduction in operators’ revenues means less revenue for the state from taxes. Tax figures for the telecommunications sector from Uganda Revenue Authority (URA) for Value Added Tax (VAT) at 18 percent and excise tax at 12 percent for the quarters ending June and September 2018, the period when the taxes came into effect, indicate a combined quarter-to-quarter decline of 0.7 percent for the two taxes (see Figure 9), despite positive growth for the previous two quarters, partly confirming fears of declining operator revenues. Combined, VAT (18%) and excise tax (12%) constitute 30 percent of operational costs.<sup>18</sup> Operator prices also reflect a universal service levy of 2 percent over and above<sup>19</sup> relatively high company taxes of 30 percent. This has long compounded affordability for those at the bottom of the pyramid.

Uganda has low Internet use and substantial digital inequalities. The Ugandan social media and mobile money taxes levied on consumers will further drive down Internet use in the country. The taxes are likely to have a greater effect on the poor and to widen the Internet gap between rich and poor, as the Internet becomes too expensive for the poor to afford, despite the fact that the cost of using the Internet is low (USD 2.68 before tax). The social media tax levied on the consumer will also have

18 pwc, “Uganda Corporate – Other Taxes”, <http://taxsummaries.pwc.com/ID/Uganda-Corporate-Other-taxes>

19 RCDF Operational Guidelines 2017/18–2021/22 (RCDF III) p.15.

a negative impact on mobile operators' revenues and profitability, affecting the ability of operators to reinvest in ICT infrastructure in the country and potentially the tax base as companies' profits decline.

Already, the ICT infrastructure roll out in Uganda is very low and needs to be upgraded and extended. Compared with Rwanda and South Africa, countries which have reached 100 percent 3G coverage and more than 90 percent of the population covered with 4G/LTE, in Uganda, 4G/LTE is only available in Kampala and other major towns while only half of the population is covered by 3G.

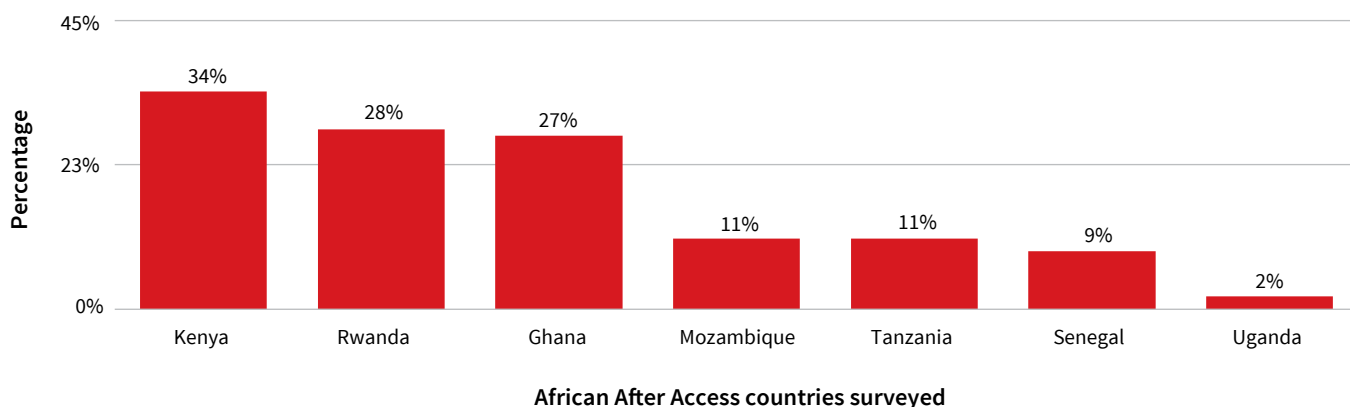
### 2.3 FINANCIAL INCLUSION AND MOBILE MONEY

Financial inclusion is a far-reaching challenge in developing countries. The 2017–2018 After Access survey conducted in 10 African countries indicates that while bank account ownership is almost universal in developed countries, less than a third (29%) of Africans living in the surveyed countries (Ghana, Kenya, Lesotho, Mozambique, Nigeria, Rwanda, Senegal, South Africa, Tanzania and Uganda) own a bank account. The low level of account ownership in developing countries is due to the inability of financial service providers to expand their services to the poor because of the high cost of setting up facilities in underserved areas. However, in South Africa, account ownership has surged, with about 57 percent of the population aged 15 and older owning a bank account. Financial services have expanded in South Africa, with service providers developing more financial products, especially credit, which

is now provided to individuals and enterprises. Progress in other countries has been slower. Close to a third (27%) of the population 15 years and older in Ghana own a bank account, compared to Kenya (34%), Nigeria (33%), Rwanda (28%), Tanzania and Mozambique (11%). Less than one in ten in Senegal (9%) and Uganda (2%) own an account (see Figure 10).

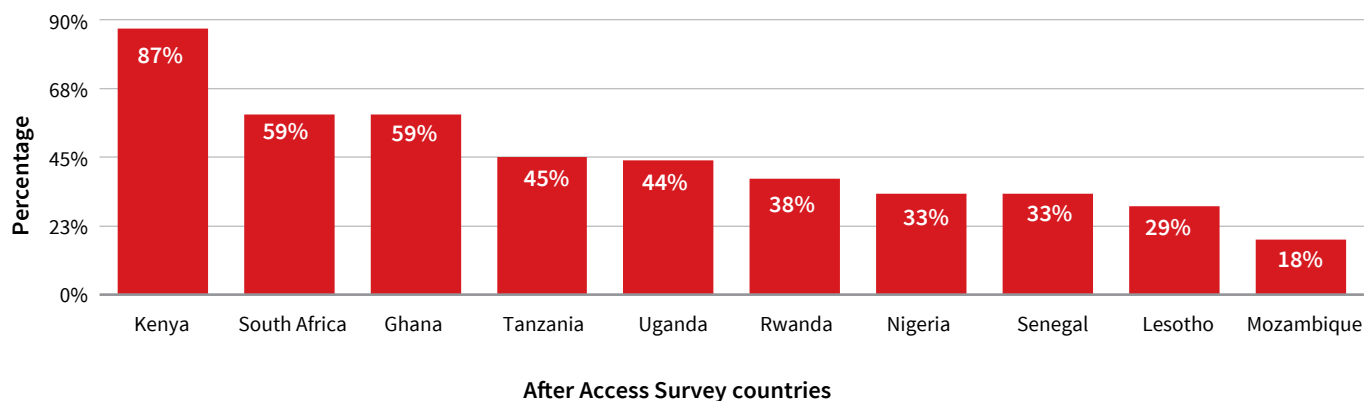
Developing countries are not only grappling with low levels of bank account ownership but also with large disparities in such ownership between males and females (a gap of 24%) and in urban versus rural areas (56%). Bank account ownership disparities are related to historical inequalities, for example in education and income. Educated individuals, who tend to have stable jobs and regular incomes, are more likely to be financially included than the poor, who in most cases reside in rural areas.

The ubiquitous nature of mobile phones in Africa, with 66 percent of the population in the surveyed countries having a mobile phone, coupled with the advent of new mobile technologies such as mobile money, has broadened access to financial services on the continent and also changed the way people send/receive money, save, borrow and manage risk. Close to half (45%) of the population living in the surveyed countries has access to either a bank account or mobile money account, with 26 percent of them using mobile money services to transact. Mobile money services are common in East African countries, with Kenya leading at 85 percent of citizens 15+ years old using mobile money, followed by Ghana (55%) and Tanzania (45%). Financial inclusion in Uganda



**Figure 10:** Bank account ownership in surveyed countries  
*Source: RIA After Access Survey data, 2017/2018*





**Figure 11: Mobile money and financial inclusion**

Source: RIA After Access Survey data, 2017/2018

is primarily driven by mobile money services: while bank account ownership is as low as 2 percent, 39 percent use mobile money services to transact. Nigeria and South Africa, on the other hand, have the lowest mobile money usage among the surveyed countries, at 5 and 8 percent, respectively. However, these countries lead in bank account ownership. The low adoption of mobile money in Nigeria is due to the Central Bank regulatory requirement that users must have a bank account. In South Africa, mobile money has not been successful due to the developed financial market and people preferring digital financial services such as e-wallet and Internet banking platforms to mobile money services. The impact of mobile money on financial inclusion is huge in Kenya and Ghana, where 86 percent and 59 percent of the population have access to some sort of financial services (see Figure 11).

The impact of mobile money in Uganda, however, has been undermined by a tax levied on the value of the transaction. The tax was initially set at 1 percent of the transaction value for mobile money deposits, withdrawals, transfers and payments, but was later reviewed to 0.5 percent for only withdrawals. A 2018 report by Finscope indicates that a total of UGX 63 trillion (USD 16.3 billion) is transacted through mobile money in the country annually, and the Government wanted to tap

in to it in order to increase its revenue.<sup>20</sup> A public survey conducted by the United Nations Capital Development Fund (UNCDF) indicates that 47 percent of mobile money users stopped using the mobile money services in favour of banks and other platforms, which led to the Government revising the tax to 0.5 percent.<sup>21</sup> However, following the introduction of the tax, mobile money volumes decreased dramatically from UGX 866 billion to UGX 475 billion, representing an immediate impact of a 45 percent decline in the volume of money transacted over mobile money platforms in Uganda.<sup>22</sup> Comparison of data from UCC for the quarters ending June 2018 and September 2018 indicates a growth in the number of mobile money transactions of 50 percent and balance on customer mobile money wallets of 141 percent, but a decline in the value of transactions of 24 percent. All of this could be partly explained by the mobile tax as some consumers moved to cash out or keep balances in their wallets or transact in ever smaller amounts, all to minimise the perceived effects of the tax.<sup>23</sup> Following the signing into law of the excise duty amendments that reduced mobile money tax from 1 percent to 0.5 percent, there has been an indication of mobile money volumes recovering. However, this policy is likely to have exclusionary effects as the services might remain unaffordable to the majority.

20 Dicta Asiiimwe, “Controversy over Uganda Mobile Money Taxes”, <https://www.theeastafrikan.co.ke/business/Controversy-over-Uganda-mobile-money-taxes/2560-4651106-h09uvv/index.html>

21 UNCDF, “Understanding the Consequences of Mobile Money Taxes in Uganda”, <https://www.uncdf.org/article/3892/understanding-the-consequences-of-mobile-money-taxes-in-uganda>

22 Christine Kasemiire, “Uganda: Mobile Money Volumes to Rise to Shs871b By December – Report”, <https://allafrica.com/stories/201811190206.html>

23 UCC, Communications Sector Performance for Quarter ending September 2018.

# 3

## INFRASTRUCTURE COVERAGE AND REACH

Uganda has about 12000 kilometres of fibre-optic cable laid, but the duplication routes by different operators has resulted in high costs for erecting and maintaining effectively less than 2100 kilometres of fibre across the country.<sup>24</sup> Figure 12 shows the extent of the National Backbone Infrastructure (NBI) and most of the operators have duplicated fibre along the same routes. To boost efficiency and extend high-speed Internet access to the population, the Ministry of ICT and National Guidance developed a national broadband policy which, among other things, aims to enforce infrastructure sharing among operators. This is expected to have a positive impact on the market as new entrants can tap into the existing infrastructure, owned by the largest operator, MTN, and running alongside that of Bharti Airtel and American technology giants Google and Facebook.

The lack of enforcement of an infrastructure-sharing policy amongst operators in Uganda has had a negative impact on competition in the Ugandan telecommunications market. It has added significantly to the cost of doing business that is more difficult to recover, more especially for late entrants. This has also made it difficult for existing operators to develop infrastructure in rural areas, which are generally perceived as unprofitable for the private sector to extend its networks into.

Mobile coverage and services in Uganda are concentrated in urban areas and along some of the main routes like Kampala to Gulu, Kampala to Busia or Kampala to Mbarara. The mobile coverage reflected by base stations includes 2G and 3G, but only 45 percent of the country is covered by 3G and has broadband at the internationally set minimum speed.<sup>25</sup> There are an estimated 3,000 mobile towers operated by the two companies (American Towers and Eaton Towers) and licensed mobile network operators, serving over 4,600 Base Transceiver Stations (BTSs), resulting in an average tenancy ratio of just under 1.5 BTS per tower, which is still low per industry standards.<sup>26</sup>

While a number of African countries, such as South Africa and Rwanda, have more than 80 percent of their population covered with 4G/LTE networks, Uganda is still to achieve 100 percent coverage in 3G, with only 50 percent geographic coverage with broadband of which only 17 percent of the population is covered by LTE/4G (Table 3). In 2018, UCC announced that the new licensing framework requires all operators to offer a minimum of 3G connectivity and they are also expected to roll out 4G/LTE services from the main centres.<sup>27</sup> This is corroborated by data from Opencellid, an open cellular that indicates 43.4 percent of Ugandan cell sites are currently 2G, 53.3 percent are 3G and only 3.3 percent are LTE/4G.<sup>28 29</sup>

**Table 3:** Population coverage for 2G, 3G and 4G across Uganda

NETWORK	COVERAGE %
2G Population coverage	93
3G Population coverage	65
4G population coverage	17

Source: ITU Database 2018

24 Uganda National Broadband Policy, September 2018

25 Uganda National Broadband Policy, September 2018

26 Tower Exchange Report, Issue 23, July 2018, [www.towerexchange.com](http://www.towerexchange.com)

27 IT News Africa, "Uganda Expects 100% Cellular Coverage in 2019", <https://www.itnewsafrika.com/2018/09/uganda-expects-100-cellular-coverage-in-2019/>

28 Opencellid statistics, <https://opencellid.org/stats.php>

29 Note that opencellid provides logical network numbers, which are only loosely correlated with physical infrastructure like mobile towers.

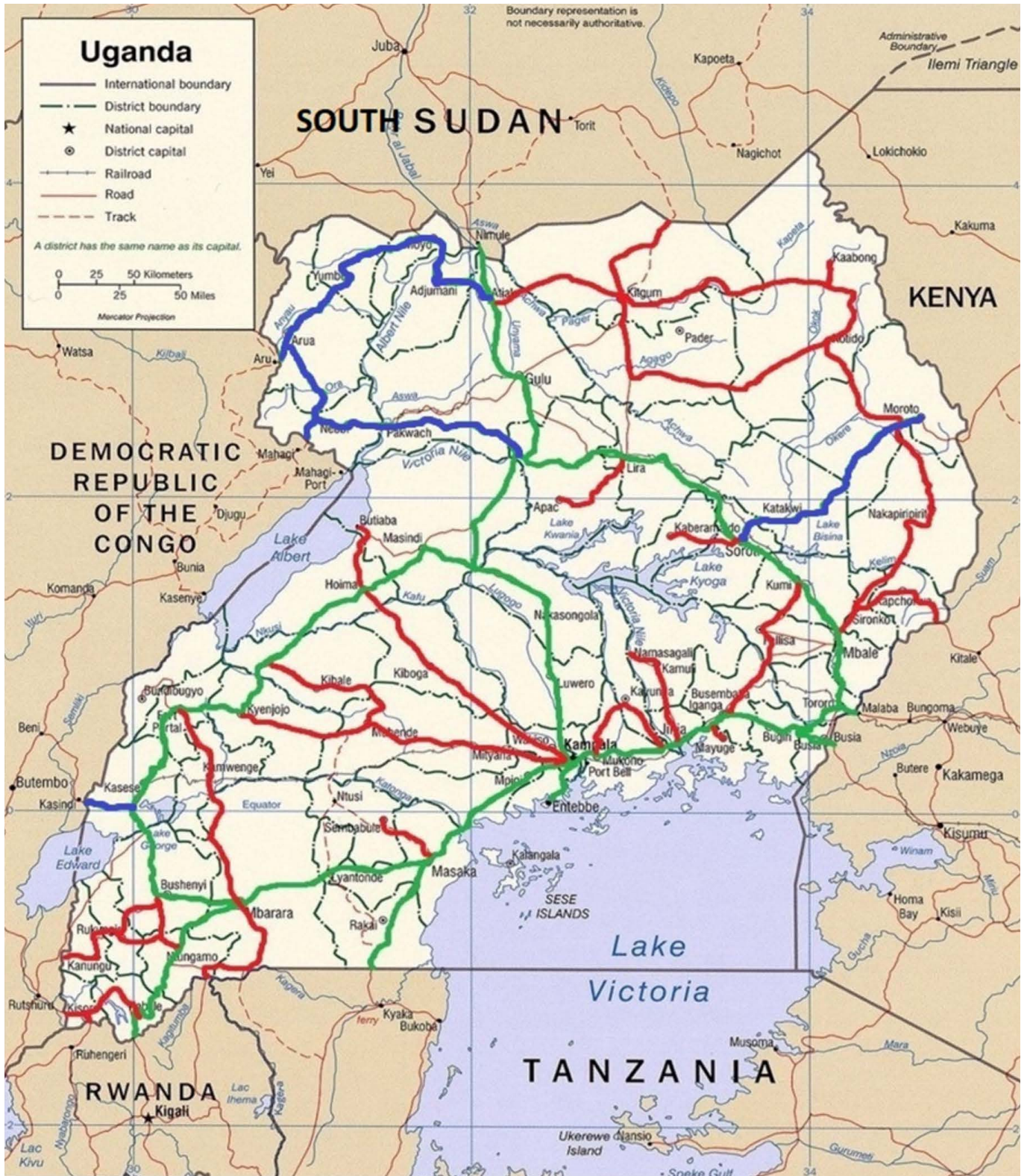


Figure 12: Map showing fibre coverage of the NBI

Source: NITA-U, 2019

Notes: Coverage of the NBI as by December 2017 Green is completed, blue to be implemented FY 2018/19 Maroon is under funding review.

# 4

## UGANDA TELECOMMUNICATIONS MARKET STRUCTURE

Critical to effective competition in a vertically integrated, multiplayer market with late entrants is an autonomous regulator. In 1996, the Ugandan Government adopted a telecommunication policy which ushered in the Uganda Communication Act (Cap 106), which took effect in September 1997. This led to the liberalisation of the sector and opening of the market to competition, bringing to an end the monopoly in the fixed and telephone services held by Uganda Telecom Limited (UTL) and the mobile phone services of Celtel. This in turn resulted in Uganda being held up as a pioneer of effective autonomous regulation of its rapidly liberalising market.

Uganda’s licensing regime differentiates between provision of ICT infrastructure and ICT services. Public Infrastructure Providers (PIPs) are licensed to establish, maintain, operate and provide ICT infrastructure to licensed Public Service Providers (PSPs) and private network operators. Despite this, MoICTNG still feels that there is no transparency in relation to costing of services, revenues declared (hence taxes paid) or how competitors can share an operator’s infrastructure among licensed operators. All of this they contend

creates a non-competitive environment that bars new entrants and results in high consumer prices. The Ministry has directed regulators to review the licensing regime and to consider important regulatory issues like national coverage, national roaming, number portability, spectrum management and listing of shares on the local stock market. Trends in licensees within different categories are summarised in Table 4.

Among the different licensed operators, 4 dominate the market because they own and operate mobile networks, the predominant way that individuals access communication services in Uganda. These include Africell, Airtel Uganda, MTN Uganda and Uganda Telecom. Other operators are predominantly Internet Service Providers (ISPs) and include Smile, Roke Telecom, Tangerine, Smart and SimbaNet. Two smaller operators closed their operations in 2018, K2 Telecom due to tax issues<sup>30</sup> while Afrimax (trades under the Vodafone brand) filed for bankruptcy protection.<sup>31</sup> Late entrants contend that they have not received the necessary support from the UCC to compel access to incumbent, and particularly dominant, operators’ infrastructure facilities at fair prices.

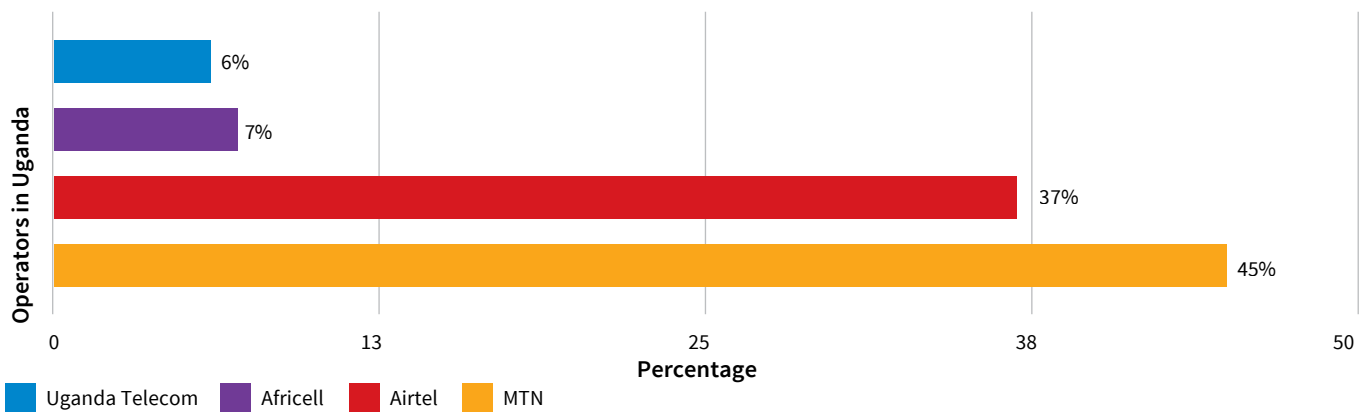
**Table 4:** Number of different types of licensees in Uganda

CATEGORY	DEC 2011	DEC 2018
Public Infrastructure Providers (PIPs)	24	22
Public Service Providers (PSPs)	41	33
Operational TV Stations		33
Licensed Pay TV Service Providers		8
Licensed Free to Air (FTA) Providers		28
Licensed Radio Stations		292

Source: UCC, 2012-2018

30 Yuveshen Darmalingum, “Airtel Uganda Takes over the Management of K2 Telecom”, <http://nextvafrica.com/airtel-uganda-takes-over-the-management-of-k2-telecom/>

31 BuddeComm, “Uganda – Mobile Infrastructure, Operators and Broadband – Statistics and Analyses”, <https://www.budde.com.au/Research/Uganda-Mobile-Infrastructure-Operators-and-Broadband-Statistics-and-Analyses>



**Figure 13: Market shares of mobile operators in Uganda**

Source: GSMA Intelligence, 2018

Notes: The market shares for small operators Vodafone and Smart are less than 2 percent each and not presented in the figure.

A number of providers have focussed primarily on infrastructure and capacity resale to other licensed providers as government moves to direct new and existing providers to rent rather than install their own infrastructure. Some of the major players in this space include CSquared with an extensive metro fibre network in Kampala and has started offering Fibre to the Home (FTTH).<sup>32</sup> Other serious fibre players include Liquid Telecommunications and Bandwidth and Cloud Services group (BCS) while American Towers and Eaton Towers dominate the rental tower business.

#### 4.1 COMPETITION

The Ugandan market remains highly concentrated, rendering competition suboptimal. Airtel and MTN together control about 82 percent of the Ugandan market, with the former's share standing at 47 percent and the latter controlling about 37 percent of total mobile subscriptions, creating a duopoly (GSMA, 2017; UCC, 2017). Other operators Uganda Telecom, which provides both fixed and mobile services constitute only eight percent of the mobile market share) and Africell only five percent. Other smaller players make up the rest. The lack of competition can be attributed to a number of regulatory failures which have created unfavourable grounds for new entrants to compete.

Despite its intention to introduce a glide path in

termination rates as a means of ensuring competition among operators and lower prices in 2009, the UCC was blocked by a court order instigated by MTN, which argued that setting termination rates should be determined by the outcomes of negotiations between operators. In 2012, the UCC introduced a glide path in termination rates which required operators to not charge each other more than UGX 112 per voice minute and UGX 15 per SMS (Table 3). Despite this declaration by the UCC, mobile operators took a significant amount of time to implement the set MTRs. The UCC had to intervene in a rate dispute between MTN and Orange. As of 2015, MTN terminated calls from Orange at the 2012 termination rate of UGX 112 but interconnection between MTN and all other providers remained at UGX 115 per minute, significantly lower than the UGX 166 termination rate charged by MTN prior to the UCC declaration but higher than the set reference. This led to some uncompetitive outcomes in the termination rate market, which is generally a monopoly. Large operators are using this market to smoke out smaller operators by charging them high termination rates and low prices in the retail market, making it very difficult for them to break even or be profitable.

In 2017, the dominant operator, MTN, which has in the past been charged with unfair competition practices, unethical business practices and anti-competitive

<sup>32</sup> CSquared, <http://www.csquared.com> and Fibre to the Home, <https://homefiber.co.ug>

**Table 5: Proposed glide path in MTR**

	2012	2013	2014
SMS termination rate (UGX/message)	15	11	9
Voice termination rate (UGX/minute)	112	102	92

Source: UCC, 2015\*

\* “Voice Call Termination on Mobile Networks: Market Assessment”, [http://ucc.co.ug/files/downloads/SMP\\_Report\\_Mobile\\_Termination\\_April%202015.pdf](http://ucc.co.ug/files/downloads/SMP_Report_Mobile_Termination_April%202015.pdf)

behaviour, requested the UCC to set out a glide path for termination rates.<sup>33</sup> Data on termination rates show that they have been declining over the past years. The question that remains is how favourable these termination rates are to smaller operators and whether they are declining at a rate that reflects costs. The impact of unfair termination rates can lead to smaller operators failing to pay large operators termination fees, though payment needs to be enforced through regular rule of law.

In 2014, Uganda Telecom was ordered by the court to pay for MTN Uganda interconnection fees worth UGX 6.3 billion (USD 2.2 million).<sup>34</sup> Similarly, in 2016, Uganda Telecom had a dispute with Airtel Uganda for failure to pay UGX 6.3 billion. This is evidence that there are problems in the wholesale market. While services must be paid for to maintain a viable business environment, prices also need to be cost-based (with a fair rate of return) if there is to be a fair competitive market.

Currently, the UCC requires Mobile Network Operators to apply the 2012 reference rates of UGX 15 per SMS and UGX 112 per call minute. A proposed glide path, which would have reduced these rates to UGX 9 and UGX 92, respectively, over a two-year period, was not adopted. This was problematic as MTN exercised its dominance in the market. Uganda has the highest MTRs amongst the African countries surveyed due to its failure to adopt the glide path in termination rates. The anti-competitive behaviour of dominant operators in the wholesale market has made it difficult for smaller operators to be

profitable, hence the exit of Vodafone and K2 Telecom.

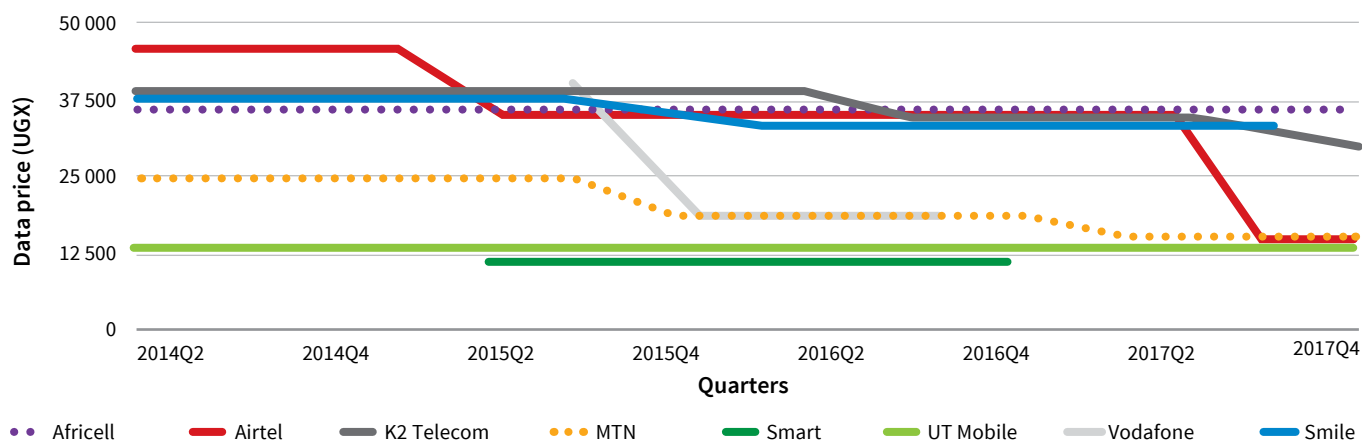
A classical method for assessing competition is by tracking price movements. Pricing of communication services is generally a complex issue as operators differentiate their pricing strategies based on timing (peak, off-peak and off-off-peak) and destination (on-net and off-net calls) for voice and text services. On the data market, however, operators offer different pricing for in-bundle and out-of-bundle services, type of user (prepaid and postpaid) and bundled products. Due to the nature of the market, there are multiple methods of measuring prices for telecommunication services, the ones commonly used for international comparison being those developed by the Organisation for Economic Co-operation and Development (OECD) and used by the ITU.

The OECD approach, although graduated for low-, middle- and high-income users, does not effectively capture the assumptions and usage patterns of the predominantly prepaid mobile markets that characterise communications in Africa. RIA has devised the RIA African Mobile Pricing (RAMP) index that reflects local usage patterns to better assess the cost of communication in Africa. RAMP reflects African mobile prepaid pricing trends with a voice/SMS basket (similar to OECD for 30 calls and 100 SMS); costs for 100MB, 500MB and 1GB prepaid mobile data (based on daily, weekly and monthly bundles or top-up packages) and the Value for Money Index that captures the highest value for money prepaid bundle product (voice, Data, SMS) in Africa. Both the voice/SMS and the data cost methodologies calculate the minimal price for consumers and allow for comparison of the cost of mobile telecommunications across countries, providing a more accurate reflection of the quality and cost of the service).

Figure 14 presents the price trends for prepaid mobile data services for all operators in Uganda during 2017. While competition is generally assessed by examining price movements and innovations in the telecommunication market, quality of service has become a very

33 AllAfrica, “Uganda: MTN Licence Expires, Rivals Fight Renewal”, <http://allafrica.com/stories/201801150056.html> and “Uganda Communications Commission Responses to Industry Comments on Draft Models Developed in Mobile Termination Rate & Cost of Network Services Study – December 2017”, <http://www.ucc.co.ug/wp-content/uploads/2017/09/UCC-Response-to-Industry-Comments-on-MTR-and-Cost-of-Network-Services-Study-20171208.pdf>

34 TechJaja, “UTL Ordered to Pay \$ 2.2 Million to MTN in Interconnection Fees”, <https://www.techjaja.com/utl-ordered-to-pay-2-2-million-mtn-interconnection-fees/>



**Figure 14:** Cheapest 1GB data in Uganda by operators

Source: RAMP Index, 2017

important factor for analysing competition in the data market and for innovation.

In the Ugandan market, despite late entrants charging low prices, they are unable to put sufficient pressure on the first movers, Airtel and MTN. This phenomenon is linked to operator market revenue share, with dominant operators able to leverage their first-mover advantage to consolidate their respective market shares and invest in their networks. Although MTN's price dropped in early 2018 as a result of pricing pressure from late entrants offering lower prices, both MTN and Airtel have for a long time been able to resist this pressure because of the extent of their coverage and/or the quality of their services. Generally, the dominance of operators enables them to invest more in their network, which helps them to attract more customers and makes them more profitable and competitive. The Herfindahl-Hirschman Index (HHI)<sup>35</sup> indicates that despite the industry having many players, the market is highly concentrated, above 2 500. Two mobile operators, MTN and Airtel, control more than 80 percent of the market share. From 2014 to 2018, the lowest HHI was calculated at 3 346 in 2017 but jumped to 3 665 in 2018, which is the highest HHI value since 2014 (Figure 12). The entry of Vodafone in 2015 led to a reduction of the HHI from 3 620 to 3 536 but this was not sustained for a long time as the large operators responded by reducing their prices to sustain

and gain new market share. The exit from the market and cessation of operation of the two small players, K2 and Vodafone, led to an increase in HHI again, reaching 3 665 in 2018. With this highly concentrated market it will be difficult for new entrants to gain market share as consumers do not only react to prices but also to the quality offered by operators. The smaller operators will not be able to compete in quality due to a lack of resources, while big operators will use their profits to reinvest in their networks and crowd out the small players, as already evidenced by those that have exited.

In recent years, consumer tastes and preferences have changed due to the introduction of innovative and inexpensive products in the telecommunications industry. Fuelled by the introduction of over-the-top (OTT) services, the Internet market has experienced strong growth. By providing low-cost substitutions for voice and text services, smaller operators are able to gain some market share from the dominant operators. The latter have often resisted what they consider the cannibalisation of their traditional voice and text services and revenue streams. Few have been able to ignore these disruptions to the market for long, however, and most have resigned themselves to being in the mobile data market. As such, the mobile data market has become one of the most competitive markets in Africa. As shown in Figure 11, the Ugandan mobile data market has experienced some

35 HHI is a commonly accepted measure of market concentration. The higher the figure, the closer the market is to a monopoly. For an HHI less than 1 500, the market is considered to be competitive; moderately competitive between 1 500 and 2 500; and highly concentrated for an HHI greater than 2 500. The HHI is calculated by summing up the square of each operator's market share, and ranges between 0 and 10 000.

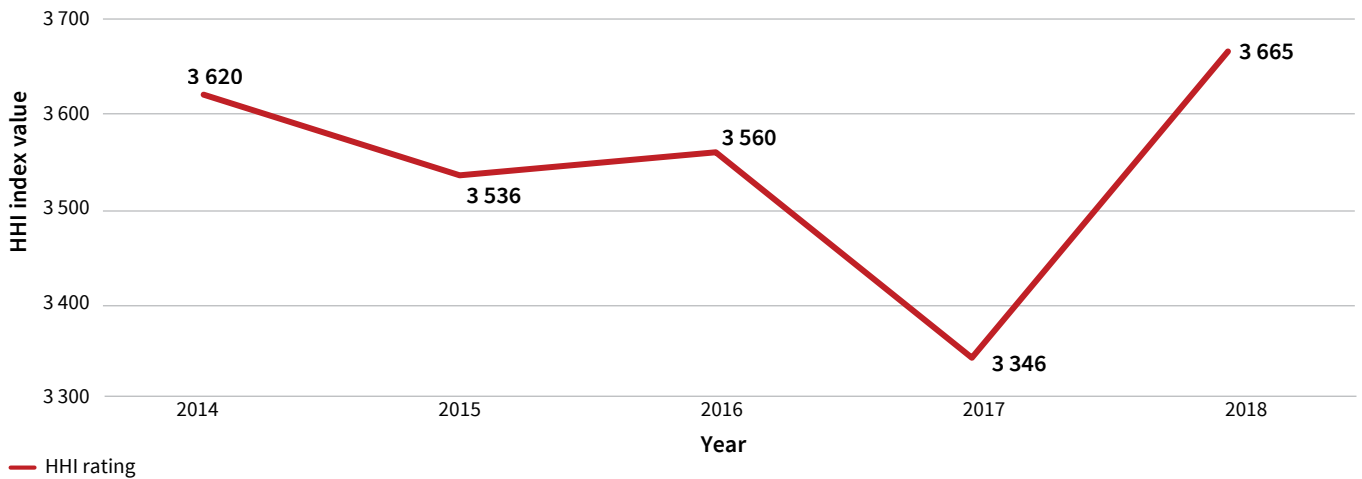


Figure 15: Ugandan mobile telecommunication HHI  
 Source: GSMA Intelligence, 2018

price wars, initiated by smaller operators. The low pricing strategy adopted by Smart and Uganda Telecom has put pressure on the dominant operators MTN and Airtel, which subsequently succumbed to this pressure and reduced their prices to match those of Uganda Telecom. The intensive competition in the Ugandan mobile data market has led to Uganda being among the African countries with the cheapest 1GB data.

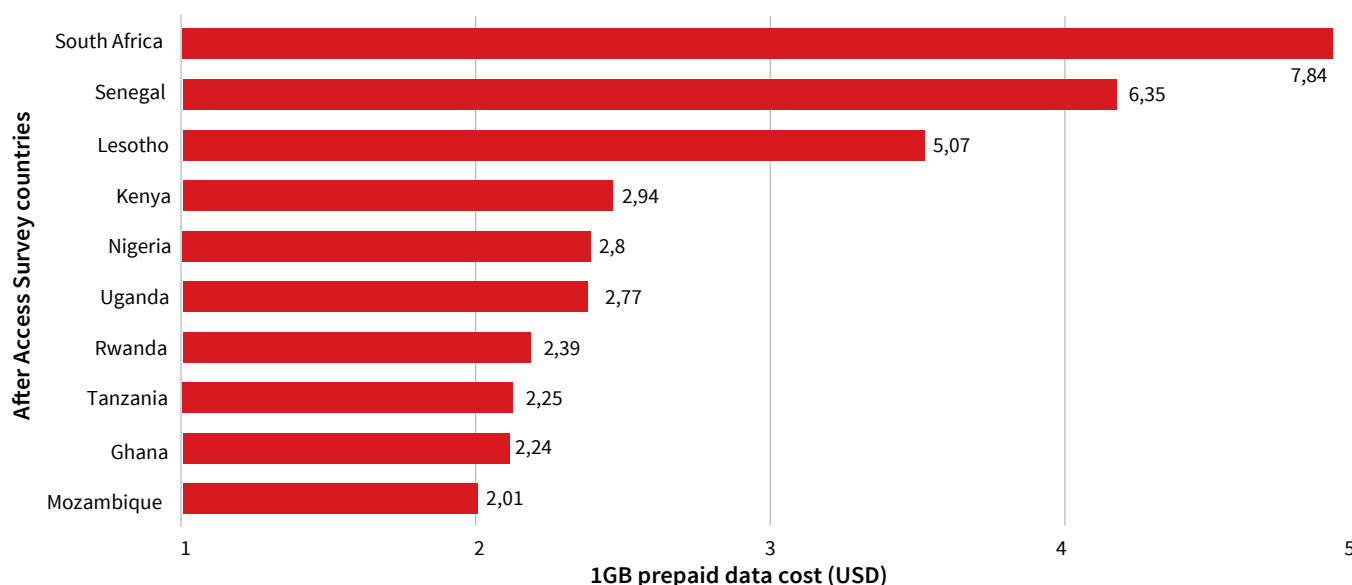
#### 4.2 PERFORMANCE IN RAMP INDEX AND AFFORDABILITY OF SERVICES

The RAMP Index, a comprehensive database collecting prices of mobile prepaid data and a voice/SMS mixture on a quarterly basis, ranks Uganda 17 out of 49 African countries in terms of the cheapest 1GB of data. The cost of 1GB of data in Uganda is USD 4.18 (accounting for social media tax), cheaper than the same amount of data in South Africa (USD 7.84) and Lesotho (USD 5.07), countries with more than double the number of Internet users than Uganda. Mozambique and Rwanda, with the least Internet use (11% and 9%, respectively), offer the cheapest 1GB of data amongst all the surveyed countries, at USD 2.02 and USD 2.35, respectively. The survey findings suggest that the biggest challenge to Internet use on the continent is affordability, specifically the cost of Internet-enabled devices. This suggests that the digital divide in Africa is defined by income levels.

In Uganda, a large proportion (89%) of individuals with a maximum income of USD 100 per month, do not use the Internet, while about 65 percent of those with a disposable income between USD 101 and USD 1 000 do not use the Internet (Table 6). The study shows that 100 percent of those who are relatively richer than the first three income brackets use the Internet, except for those with a disposable income ranging between USD 2 001 and USD 2 500. As shown by the survey results, the social media tax is likely to widen the gap between the poor and the rich.

The survey shows that the majority of Ugandans (89) have a disposable income that is less than USD 100 per month. Using the survey data and the RAMP Index, there is evidence that the cost of data (USD 2.68, without tax) is high for low-income earners, constituting 20 percent of the median disposable income for this group. The study shows that the social media tax will impact negatively on low-income earners, who already find services unaffordable and are unable to come on line because of the price of data. The social media tax increases the cost of a monthly 1GB of data by USD 1.5 (56%) to USD 4.18. This will increase the share of the cost of 1GB of data (inclusive of taxes) to 31 percent for the low-income group and three percent for the second lowest income group; both percentages are higher than the two percent affordability index. The social media tax





**Figure 16:** The cost of 1GB of data among 20 African countries

Source: RAMP, 2018Q2

is likely to reduce Internet use from 14 to 10 percent, a 29 percent reduction.<sup>36</sup> These results are supported by the supply-side estimates from the UCC, which show that Internet use went down by 30 percent between March and September 2018.<sup>37</sup>

Other than the social media tax having a negative effect on the economic well-being of residents and

generally on the country’s economic growth, it also impacts the societal social well-being negatively. The social media tax will curb or discourage the participation of Ugandan residents, especially those in the lower income brackets, in national and international debates. The social media tax, which, according to the government, is used to tax Internet applications owned

**Table 6:** Comparison of Internet use across different income groups

DISPOSABLE INCOME USD	INTERNET USE %	1GB PRICE/MEDIAN DISPOSABLE INCOME (WITHOUT SOCIAL MEDIA TAX) %	1GB PRICE/MEDIAN DISPOSABLE INCOME (WITH SOCIAL MEDIA TAX) %
0–100	11	20	31
101–500	35	2	3
501–1 000	34		
1 001–1 500	100		
1 501–2 000	100		
2 001–2 500	54		
2 501–3 000	100		
3 000+	100		

Source: RIA After Access Survey data, 2017; RAMP Index, 2017-18

36 It is assumed that due to the social media tax, those below the median value can no longer afford the Internet. For a low-income earner to be able to access social media, they have to spend USD 4.18, which is 30 percent of the income of those below the median value.

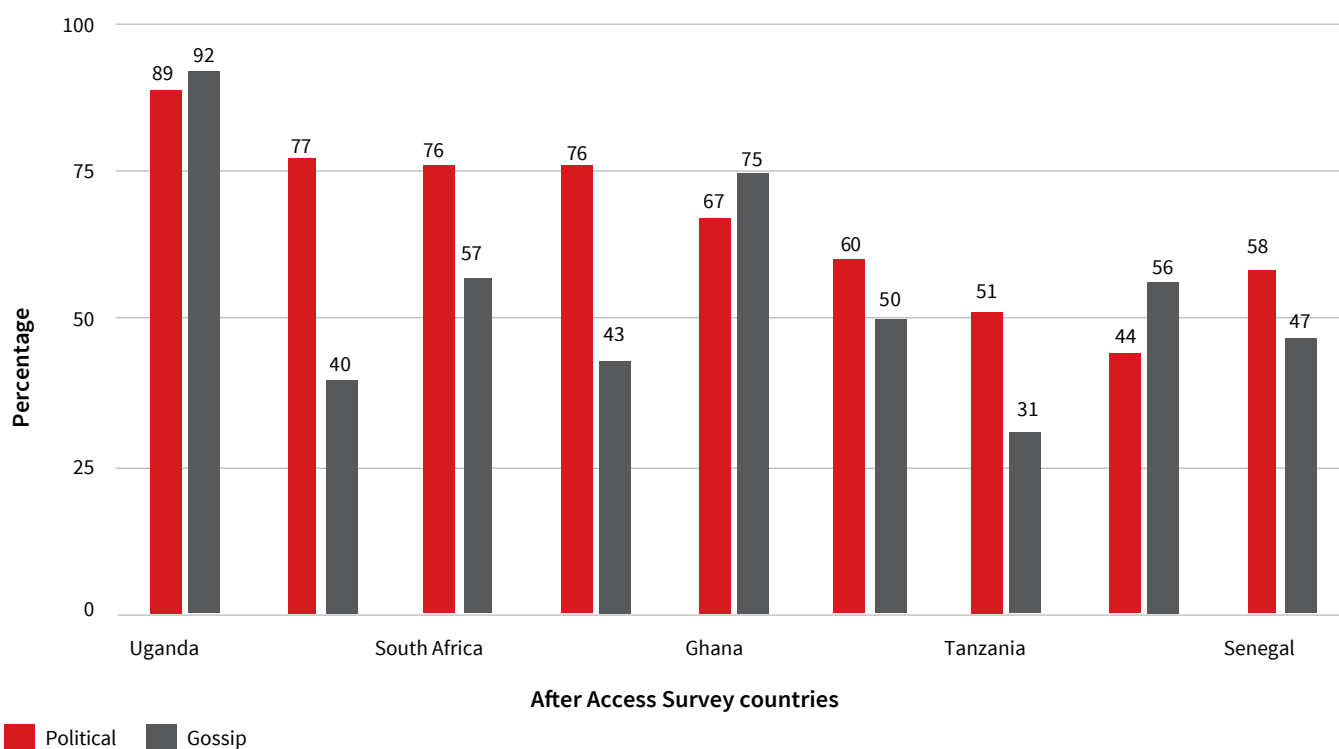
37 Research ICT Solutions, “Uganda”, <https://researchictsolutions.com/home/ict-evidence-portal/uganda/>

by foreigners, adds to a number of laws that have been designed by the Ugandan Government to limit free participation in the Internet. While the Ugandan social media tax is the first of its kind directly levied on consumers, a number of African countries have also introduced laws that restrict the use of the Internet.<sup>38</sup>

### 4.3 PERCEIVED FREEDOM OF ONLINE EXPRESSION

The RIA 2017/2018 After Access Survey findings suggest that the majority of people residing in African countries are worried about online surveillance. Among the 10 surveyed countries, six out of ten people using

social media avoid discussing political matters (64%) or gossiping with friends (55%) online. The survey shows that even though the Ugandan constitution advocates freedom of expression, most Ugandans that use the internet do not feel free to express themselves online, especially on issues relating to politics (89%) and social gossip (92%). Relative to other surveyed countries, Internet surveillance and online freedom are not challenges in Kenya, where only 44 percent stated that they do not feel free to express their opinions on political matters on the Internet, while Tanzania (31%) has the lowest number of social media users who do not feel free to express themselves (Figure 14).



**Figure 17: Not comfortable discussing issues online**

Source: RIA After Access Survey data, 2017/2018

Note: Lesotho's responses are unavailable.

38 In 2018, Tanzania passed a law to charge bloggers a USD 930 annual fee to publish online. Egypt, on the other hand, put a ceiling on the number of followers a social media user can have and the Government passed a bill allowing it to block any social media account with more than 5 000 followers and found to be spreading “fake news”. However in Benin, popular protests to the introduction of social networking taxes led to their being withdrawn within days of being issued.

## CONCLUSION AND RECOMMENDATIONS

Despite the Ugandan Government recognising the role that ICTs play in enhancing economic growth and social inclusion, particularly in the Digital Uganda Vision it has been developing over the last couple of years, some critical policy interventions and lack of government policy coordination between different arms of government appear to have had unintended outcomes.

### REGRESSIVE SOCIAL NETWORK TAXES

The latest of these is the introduction of regressive social networking and mobile money taxes by the central government. The taxes undermine the country's Vision 2040 and the Digital Uganda Vision, which strives to empower citizens and achieve the goals of universal inclusion, sustainable development, economic progress and poverty eradication through digital innovations. Taxes are generally levied on goods that have negative externalities and are over consumed. However, in Uganda, only 14 percent of the population use the Internet, which is way below the 20 percent required to benefit from network effects. The social media tax is not only likely to reduce the proportion of Internet users by four percent, but it also widens both digital and income inequality among the poor and the rich. There is a need for policymakers to re-evaluate this policy and its social costs.

### LOW LEVELS OF PENETRATION

The policy and regulatory outcomes are reflected in low levels of Internet and even mobile phone penetration. The reasons given for these poor indicators in the 2017–2018 After Access Survey conducted by RIA in 10 African countries show that Uganda (14%) has the third lowest Internet use in the region, after Rwanda (9%) and Mozambique (10%). The survey shows that poor ICT infrastructure, lack of electricity, high levels of poverty and digital illiteracy are the main causes of low levels of Internet use in Uganda. Only 18 percent of households in Uganda are connected to the main electricity grid. Only Lesotho (with far more difficult terrain to service) had fewer households connected to the grid. The lack of power in rural households is one of the main factors

contributing to the lack of Internet take-up in rural areas, even where there is signal, although around 40 percent of the country does not yet have broadband coverage.

The resulting urban–rural Internet access gap of 70 percent is one of the largest among the countries surveyed. Just over half of the population was covered with 3G technology in 2017, while 4G/LTE was only available in the capital city, Kampala. This is in contrast to several other African countries where, even in least-developed countries such as Rwanda, there is broadband coverage across almost the entire country. However, as seen with Rwanda, addressing supply-side infrastructural issues alone does not on its own result in adoption.

### AFFORDABILITY

Although prices are relatively low, with Uganda ranking 17 out of 49 African countries in terms of the cheapest 1GB data on the RAMP Index, the price of data and devices is still unaffordable for the majority of Ugandans. The cost of 1GB of data in Uganda is USD 4.18 (accounting for social media tax), which is cheaper than the same amount of data in South Africa (USD 7.84) and Lesotho (USD 5.07), countries with more than double the number of Internet users compared to Uganda.

The institutional redesign of the sector to accommodate the increasingly important role of IT and the Internet in the economy, and particularly the public sector via the establishment a decade ago of NITA-U, while rationalising and harmonising government services, appears to have caused some jurisdictional overlaps between NITA-U and UCC, as well as some potentially anti-competitive effects in the telecommunications sector.

### MARKET CONCENTRATION

The telecommunications sector is highly concentrated, however, despite Uganda having a high number of licensed providers in the market. Outside of the urban centres, there is effectively a duopoly, with MTN and Airtel servicing significant rural parts of the country. While MTN in particular has made significant

investments in the extension of its 3G and 4G network, the dominance in the market has been largely unchecked by the regulator. Despite initiating market reviews, no remedies have been proscribed to deal with this market dominance.

What is clear is that Uganda will need to do things differently to ensure improved outcomes.

Addressing inconsistencies of policy that impacts on the sector is critical. Each policy that impacts the sector, regardless of the ministry that originates it, should be evaluated within the overall context of planned sector outcome before implementation so that adverse effects can be mitigated.

### **DEMAND STIMULATION**

As seen across Africa, supply-side interventions on their own are not sufficient. Demand stimulation is essential to driving Internet take-up. Affordability of devices is the primary challenge for policymakers, with even relatively low-cost devices being beyond the financial means of large numbers of citizens. Further, the price of data, even though relatively low, is simply beyond the means of many people for meaningful use. Shifting people from passive consumption of services to productive use represents a far greater challenge, however. This requires not only improving digital literacy in order to bring people online but developing wider skills sets for the production of local content to stimulate demand, entrepreneurial application or within the services sector to create jobs and increase the consumptive capacity of the economy more broadly to drive growth.

### **MOBILE MONEY FOR THE UNBANKED**

Uganda has the lowest percentage of people who have bank accounts among all the surveyed countries, at two percent, but the country benefited from mobile money. Due to the advent of mobile money services, a third of the population above 15 years of age is able to send, receive and save money. While these services allow the majority to be financially included, the Government's decision to introduce a mobile money tax has undermined the impact of mobile money on

financial inclusion in Uganda. The tax has not only led to a decline in the amount of value transacted (between 50 and 60% since its introduction) but it seems also not to have met the intended fiscal objectives of the government.

As the country deliberates on the capitalisation of the fourth phase of the national backbone, it should evaluate alternative, cost-effective strategies to reach unserved areas. Consideration should be given to transferring the long-term risk associated with long-term debt arrangements from the public to the private sector. Cross-continental and local commercial fibre companies could provide competitive prices to those offered by incumbents. These companies believe that with guaranteed revenues, such as from government anchor tenancies created through demand aggregation in underserved areas, the private capitalisation of broadband rollout, in otherwise uneconomic areas of the country, could be induced. This competitive fibre rollout, is happening elsewhere on the continent through fibre companies raising their own capital to open up new routes. The business model is inherently open access as companies require as much traffic on their networks as possible to get a return on their investments as quickly as they can in order to capitalise further network extension.

### **LOWER COST ACCESS AND USE MODELS**

It is also clear that even if they were effectively regulated, current national licensing and GSM business models are not affordable for the majority of Ugandans. A low regulatory transactional cost regime that enables lower-cost dynamic spectrum use in rural areas, where it is underutilised, by national licensees and self-provisioning by community networks, micro-cells and wireless internet providers needs to be investigated to make the Digital Uganda Vision a reality. Extensive free public Wi-Fi should be deployed through the RCDF at all public buildings to improve digital equality amongst citizens and enable those who have acquired smart devices to utilise Internet-based services more optimally.