



## NIGERIA: HOW AFRICA'S LARGEST ECONOMY IS PRIORITISING AFFORDABLE INTERNET



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*The Federal Republic of Nigeria is a regional and global powerhouse. The country has just overtaken South Africa to become Africa's largest economy, and around one in four Africans is Nigerian. What happens in Nigeria matters – not just around the continent but also around the globe.*

*This short case study from the Alliance for Affordable Internet (A4AI) examines the state of broadband affordability in Africa's most populous country. It also takes a closer look at Nigeria's Approved ICT Policy and its new Broadband Plan, and identifies the key opportunities and challenges facing the country as it aims to increase broadband penetration rates five-fold in the next five years.*

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## 1. AFFORDABILITY

Simply put, broadband remains unaffordable for the vast majority of Nigerians. Fixed-line broadband subscriptions cost an average of 39 percent of average income, with the same figure for mobile broadband packages hovering around 13 percent.

Yet these figures do not reveal the true scale of the challenge. In 2010, around 80 percent of Nigerians earned \$2 a day or less – \$730 per year – a little more than half of the 2012 national average income of \$1,440.<sup>1</sup> For these people living below the poverty line, affordable access to the Internet remains even further out of reach.

Reflecting the high cost of broadband in the country, in 2013 Nigeria was ranked 142<sup>nd</sup> out of 169 countries by the International Telecommunication Union (ITU) for the affordability of a fixed-broadband connection and 99<sup>th</sup> out of 126 countries for a prepaid 500MB mobile broadband connection.<sup>2</sup>

Country	ITU Mobile broadband prepaid handset prices (500MB) (Rank)	ITU Mobile broadband prepaid handset prices (500MB) as % of GNI P.C. 2012
Austria – First	1	0.1
India	67	2.9
Colombia	85	5.8
Kenya	93	8.2
Ghana	96	9
Tanzania	98	11.3
<b>Nigeria</b>	<b>99</b>	<b>13</b>
Uganda	112	23.3
Mozambique	121	65.9
S Tome & Principe – Last	126	156.5

**Table 1: ITU Mobile broadband prepaid handset prices (500MB) as % of GNI P.C. 2012**

<sup>1</sup> World Bank, (2014), Poverty headcount ratio at \$2 a day (PPP) (% of population [Online] Available from: <http://data.worldbank.org/indicator/SI.POV.2DAY>

<sup>2</sup> ITU, (2013), Measuring the Information Society Report 2013



A4AI's Affordability Report 2013 ranked Nigeria 19<sup>th</sup> out of 46 developing countries. The Report analyses each country's existing infrastructure, access and affordability, and the policy and regulation to support them –taking a more holistic look at affordability than the GNI per capita assessment.

Nigeria's Affordability Index score (39.3) can largely be attributed to its score for access and affordability (61.2), a measurement of the price and adoption of broadband and the policy regulation intended to reduce the cost of services. The score for infrastructure (30.7) is less than half that of the number one ranked country, Malaysia<sup>3</sup>, and provides some evidence of what Nigeria should prioritize.

Country	Affordability Index Overall Composite Score: Rank	Sub Index communication Infrastructure	Sub-Index Access and Affordability	Affordability Index Overall Composite Score
Malaysia – First	1	71.6	72.2	68.6
Mauritius	2	61.7	76.9	65.5
Tanzania	22	40.4	43.1	34.9
South Africa	12	41.4	63.2	46.6
Botswana	16	51	46	42.9
Kenya	18	34.2	60.1	40.7
<b>Nigeria</b>	<b>19</b>	<b>30.7</b>	<b>61.2</b>	<b>39.3</b>
Nambia	20	31.5	57.9	38
Uganda	21	33.4	54.8	37.3
Tanzania	22	40.4	43.1	34.9
Senegal	24	34.3	47.3	33.7
Zambia	25	32.7	48	33.2
Ghana	30	29.9	42.2	28.4
Burkina Faso	37	20.2	41.3	22.4
Rwanda	38	38	21.5	21.6
Benin	39	21	37	20.5
Cameroon	40	21.4	30.4	17.1
Mali	42	13.9	26.2	10.5
Ethiopia	43	0	28.2	3.7
Zimbabwe	44	4.7	23.1	3.6
Malawi	45	26.2	0	3.1
Yemen - Last	46	11.3	9.7	0

**Table 2: Affordability Report 2013: Index Rank and Composite Score**

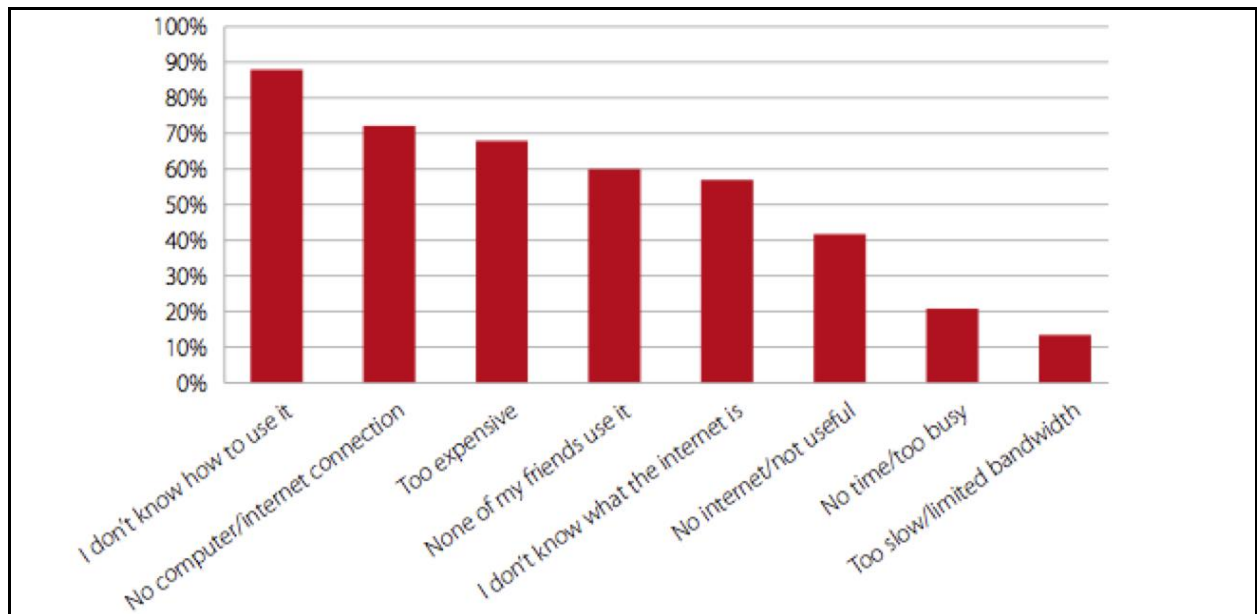
<sup>3</sup> Moving away from the simple assessment of cost as a percentage of GNI per capita, A4AI's affordability index ranks 46 emerging and developing countries by composite scores. These scores are calculated using two sub-indices: with the first sub-index assessing infrastructure deployment and the policy and regulatory framework designed to facilitate it; and the second measuring the price and adoption of broadband and analyzing policy and regulations designed to promote access and reduce the cost of services.



## 2. USAGE

In 2013, estimates were that only 33 percent of Nigerians used the Internet and that broadband penetration stood at a disappointingly low 6 percent.<sup>4</sup>

In-depth interviews conducted by Research ICT Africa confirm that the cost of services remains a major barrier to increased Internet and broadband usage. When respondents to a Research ICT Africa survey who did not use the Internet were asked why they did not, almost 70 percent said services were too expensive. Other factors limiting adoption included a lack of skills or low perceived relevance.



**Figure 1: Reasons for not using the Internet (multiple response)**

*Source: Research in Africa ICT Survey data 2011-2012*

<sup>4</sup> ITU Statistics Database (2013) Individuals Using the Internet [Online] Available from: [http://www.itu.int/en/ITU-D/Statistics/Documents/statistics/2013/Individuals\\_Internet\\_2000-2012.xls](http://www.itu.int/en/ITU-D/Statistics/Documents/statistics/2013/Individuals_Internet_2000-2012.xls); and Nigeria, Ministry of Communication and Technology, (2013), Broadband Plan 2013 – 2018,



### 3. LESSONS FROM MOBILE SERVICES INDUSTRY

#### A. THE IMPACT OF CONDUCTIVE POLICY, REGULATION AND PLANNING

The figures for Internet usage and broadband penetration are in stark contrast to those for the penetration of mobile voice services. While latest ITU data puts the mobile penetration rate at 67 percent, latest figures from the Nigeria Communications Commission (NCC), Nigeria's independent ICT regulator, indicates that the penetration rate at the end of December 2013 was 91 percent. According to the GSM Association (GSMA), there are 2.42 SIM cards per subscriber in Nigeria; so mobile penetration figures should not be taken a face value.<sup>5</sup> However, the growth of mobile telephony in Nigeria and the current usage levels are undeniably impressive and provide a firm foundation for broadband expansion.

The development of mobile services in Nigeria has been a direct result of the liberalization of the Nigerian telecommunications sector, which began in 1993 with the establishment of the NCC.<sup>6</sup> The NCC's main objectives were to facilitate the entry of private sector actors and promote fair competition. Although some measures were taken in the 90's, many observers suggest the "real" liberalization process started in 2000 with the finalization of the National Telecommunications Policy (NTP). The NTP laid out a number of short and medium term targets for the sector, including promoting competition through full liberalization and meeting ITU targets for mobile penetration within two years by having 1.2 million mobile subscriptions.<sup>7</sup>

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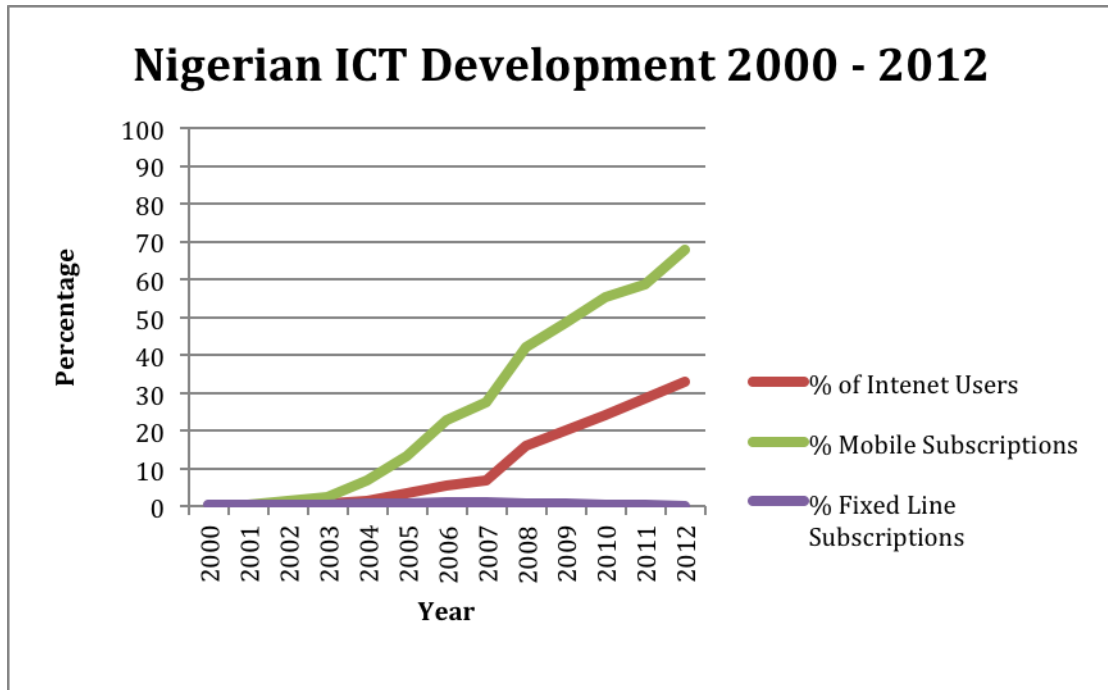
<sup>5</sup> GSMA Intelligence, Nigeria Data, available with subscription at <https://gsmaintelligence.com>

<sup>6</sup> Nigerian Communications Commission (NCC) was established with Decree 75 of 1992. However, the NCC was inaugurated in 1993.

<sup>7</sup> Nigeria, Ministry of Communications, (2000), National Telecom Policy, 2000



The NTP helped create an environment in which mobile telephony thrived. However, Internet services, which were given a less defined usage target, did not grow at the same rate. Between 2000 and 2012 mobile telephone subscriptions grew from 0.02 percent to 68 percent, Internet usage grew from 0.06 percent to 33 percent and fixed line subscriptions actually declined from 0.45 percent to 0.25 percent.



**Figure 2: Nigeria ICT Development 2000-2012**

*Source: ITU Statistics Database*



## 4. A NEW PATH: HOW IS THE GOVERNMENT PLANNING TO INCREASE BROADBAND INTERNET USAGE?

### A. A POLICY FRAMEWORK WITH A HOLISTIC VIEW

The Federal Government of Nigeria recognizes the urgent need to increase access to, and usage of, Internet and broadband in Nigeria. As part of its overarching national development plan, Vision 20:2020, which outlines the Federal Government's aim to make Nigeria a top 20 global economy by 2020, ICTs have been given a central role.<sup>8</sup> In order to rationalize the work towards achieving Vision 20:2020, the Government of Nigeria has developed the Approved ICT Policy 2012, which details how Nigeria will leverage ICTs to become a knowledge-based, globally competitive society by 2020.

The Approved ICT Policy 2012 places great emphasis on the development of Internet and broadband, making it one of 16 policy focus areas. Unlike the 2000 NTP, it sets specific targets for broadband penetration, seeking to increase it from 6 percent in 2013 to 30 percent by the end of 2018.<sup>9</sup> Strategies to achieve this ambitious target include greater monitoring and evaluation of broadband penetration so that evidenced-based actions are taken; utilizing Nigeria's universal service frameworks; and promoting supply- and demand-side policies that incentivize broadband backbone and access network deployment.<sup>10</sup>

In 2013, the Government of Nigeria approved the Broadband Plan 2013 – 2018 that further articulates how Nigeria will achieve the objectives of the 2012 Approved ICT Policy. Describing broadband as an "Internet experience where the user can access in real time at a minimum of 1.5 Mb/second", the 2013 – 2018 Plan outlines how Nigeria will work towards its vision of Nigeria becoming "a society of connected communities with high-speed Internet and broadband access that facilitate faster socioeconomic advancement of the nation and its people".<sup>11</sup>

Specific elements of the plan are examined in greater detail later in this case study, but as an overview, it is encouraging to see that a holistic view is taken. The plan takes the view that Nigeria's broadband ecosystem must be improved – crucially with a focus on both supply and demand side factors. The government also understands how important increased affordability is for creating the necessary virtuous cycle of benefit needed to improve the ecosystem. This ecosystem is made up of four critical parts: Investment, Availability, Relevance and Affordability (see Figure Three).

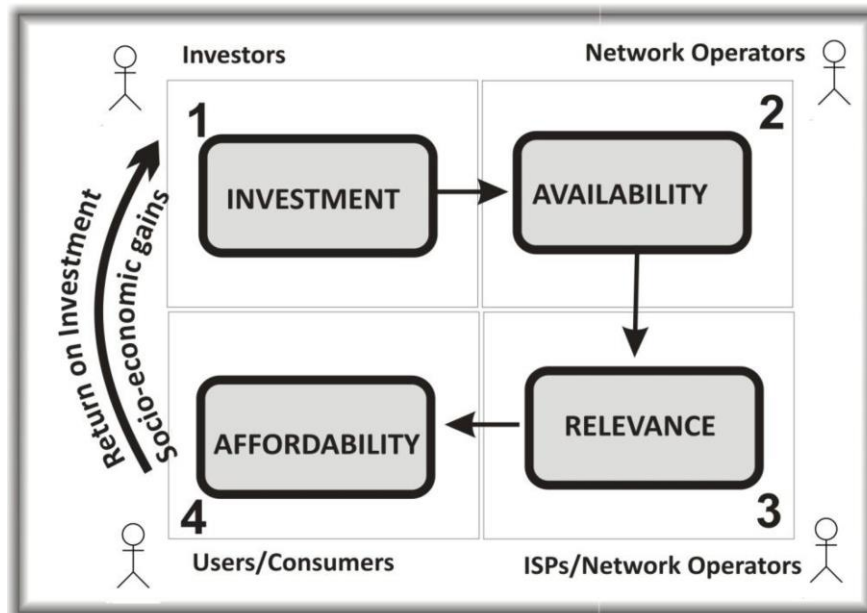
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<sup>8</sup> Nigeria, Federal Government of Nigeria (2010), Vision 20:2020, 2010

<sup>9</sup> To meet this aim government will fulfill three objectives The government aims to: i. To accelerate the penetration of reasonably priced broadband Internet in the country; ii. To foster broadband usage for national development; and iii. To ensure the rapid development of a broadband policy support and implementation framework.

<sup>10</sup> Nigeria, Ministry of Communication Technology (2012), Approved ICT Policy 2012

<sup>11</sup> Nigeria, Ministry of Communication and Technology (2013), Broadband Plan 2013 – 2018,



**Figure 3: Nigerian Broadband Ecosystem – Nigeria’s 2013 – 2018 Broadband Plan**

Increased investment will lead to enhanced broadband networks and therefore, higher levels of broadband availability. Services will need to be more relevant to stimulate demand and lead people to take advantage of the additional network availability. In turn, these more relevant services must be more affordable in order to drive demand and generate the return on investment necessary to stimulate more investment.

Understandably, activities aimed at improving affordability have been given high priority in the 2013-2018 Broadband Plan. For example, immediate strategic priorities for the Nigerian government are to remove import taxes on mobile devices and to encourage manufacturers of mobile handsets to produce smartphones that cost less than \$30, so that the cost of getting online is reduced. Infrastructure sharing will be encouraged by offering financial incentives to operators. Also, the government will work with the National Communications Commission (NCC), to define an open access regime that should, among other things, encourage the competitive and innovative use of broadband infrastructure, as well as use transparent and non-discriminatory pricing for capacity. As you will read below, work on this framework has started.

## **B. MEETING THE CHALLENGE OF A FUTURE THAT IS MOBILE AND FIBRE**

Mobile technologies and fibre infrastructure are central to the Broadband Plan and achieving the aims of the 2012 ICT Policy. The plan says that all mobile base stations should provide 3G and all state capitals and metro cities should have fibre by 2015. Indeed, it notes that the “strategy that supports the objectives and targets of this National Broadband Plan is anchored





on the pervasive rolling out of wireless broadband networks nationwide based on 3G and 4G access technologies as the paramount objective”.<sup>12</sup>

Basing the successful execution of the 2013 – 2018 Plan on mobile and fibre infrastructure seems justified when one assesses Nigerians’ use of mobile phones and recent developments in the country’s fibre optic infrastructure. Today, the majority of Nigerian Internet users go online using their mobile phones; the Research ICT Africa Nigeria survey found that 62 percent of users stated that this was their primary method of access. It has been reported that 58.1 percent of Nigerian web traffic was via mobile handsets and other mobile devices in November 2012.<sup>13</sup> Moreover, between 2012 and 2013, mobile broadband subscriptions grew from 8.9 million to 16.1 million.<sup>14</sup>

The reach of mobile phone networks is extensive in Nigeria. In 2009, the GSMA estimated that 72 percent of the Nigerian population was covered by a GSM signal. The Government of Nigeria aims for 80 percent of the population to be covered by a 3G or LTE signal by 2015. Yet a review of GSM coverage maps gives some indication of what a huge undertaking this is. Vast areas of the country remain uncovered, especially those rural areas with spatially dispersed populations. Moreover, the large majority of existing base stations are 2G. It will require a change in the cost structures associated with rolling-out or upgrading these base stations to 3G or LTE and huge investment by operators.

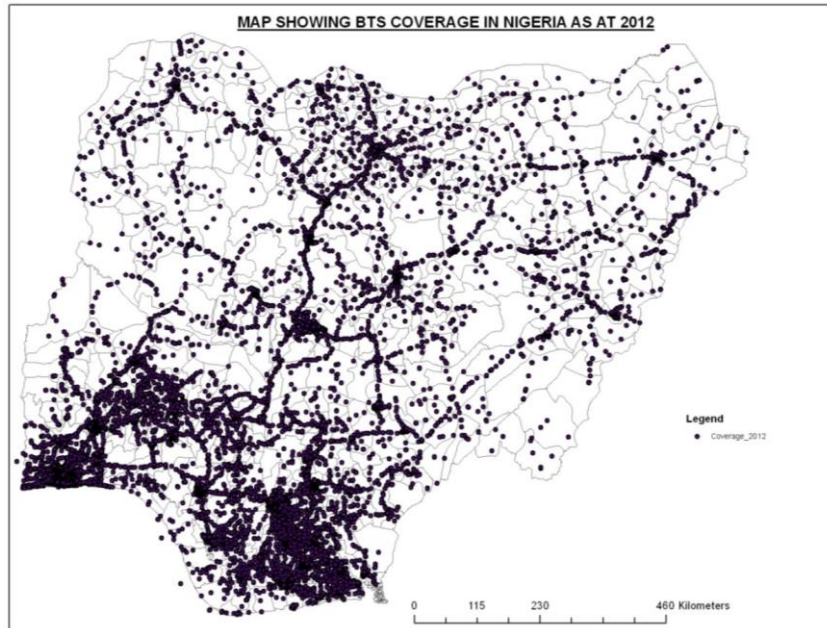
Figure Three below shows the coverage of mobile base stations in Nigeria, while Figures Four and Five show the location of the network operator Glo’s 2G and 3G base stations. They highlight how much work must be done if Nigeria is to upgrade its entire 2G network 3G or LTE by 2015.

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<sup>12</sup> Nigeria, Ministry of Communication and Technology, (2013), Broadband Plan 2013 – 2018, p. 58

<sup>13</sup> Research ICT Africa (2012), Evidence for ICT Policy Action, Policy Paper 6, What is Happening in Nigeria, A Supply and Demand-Side Analysis of the Sector

<sup>14</sup> GSMA Intelligence, Nigeria Data, Available with subscription at <https://gsmaintelligence.com>



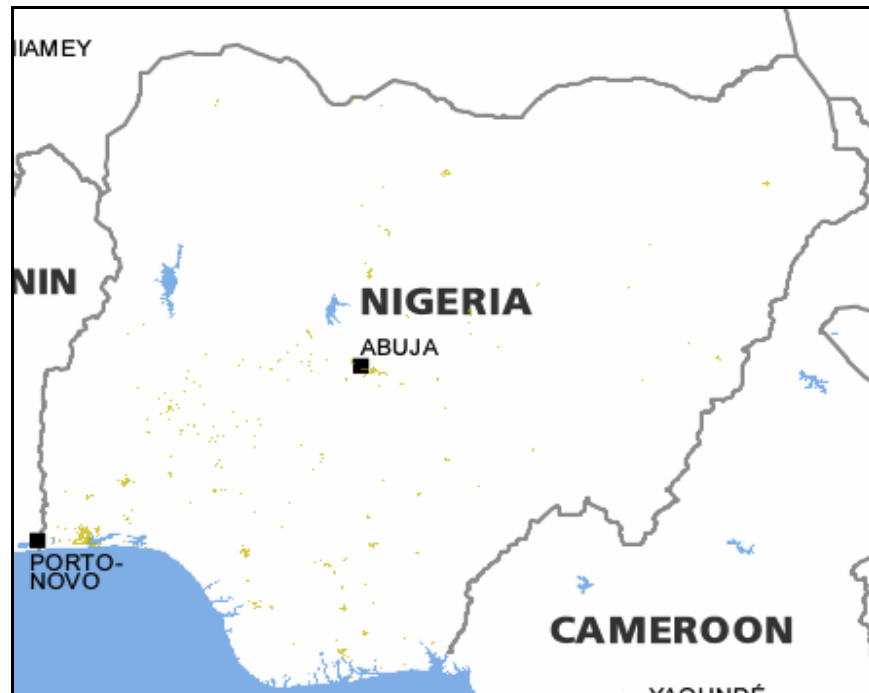
**Figure 4: USPF Base Station Maps**

Source: Nigeria Ministry of Communication Technology Presentation, ICT4D Conference, Cape Town, December 2013



**Figure 5: Glo 2G base stations**

Source: GSMA Mobile for Development Intelligence, Nigeria



**Figure 6: Glo 3G base stations**

*Source: GSMA Mobile for Development Intelligence, Nigeria*

While the onus is on industry to drive the upgrading of fibre and cell coverage, Nigeria's Universal Service Provision Fund (USPF) appears to be better placed than ever to support such efforts. In the past, it had been accused of lacking strategic focus, making decisions about the use of its funds that were not evidence based and being slow to disburse funds.

The recent development of the USPF's strategic management plan has led the organisation to articulate a new strategy and focus, improve its monitoring and evaluation capacity and undertake a detailed gap analysis to understand where funds can be best utilised. These improvements enabled the USPF to allocate \$82.8 million toward new programs and projects in 2013. This is a increase in budget allocations of 50 percent in 2012 and highlights the USPF's potential to work effectively with the private sector and have a significant impact on Nigeria's efforts to improve its ICT infrastructure.



## C. UNLOCKING THE POTENTIAL OF SUBMARINE CABLES AND INTERNATIONAL BANDWIDTH

In addition to mobile phone coverage, Nigeria has witnessed important developments in international bandwidth due to the landing of five submarine cables between 2010 and 2013. The existing SAT-3 cable was joined by MainOne (2010), Glo-1 (2011), WACS (2012) and ACE (2013), giving a combined capacity of 14.54 tbps and presenting huge opportunities.

The Government of Nigeria understands that if these opportunities are to be seized, Nigeria will have to overcome some bottlenecks. First, all the submarine cable landing stations are in Lagos. The broadband plan outlines the government's intention to add landing stations in Delta, Rivers, Bayelsa, and Ondo. Second, the terrestrial fibre networks required to utilize the capacity of the submarine cables are limited and largely rolled out along the same routes, resulting in relatively minimal impact on access, the cost of services and demand.<sup>15</sup> Figure Six below presents the current state of fibre optic networks in Nigeria, highlighting the fact that the country is some way off having a truly nationwide fibre optic network.

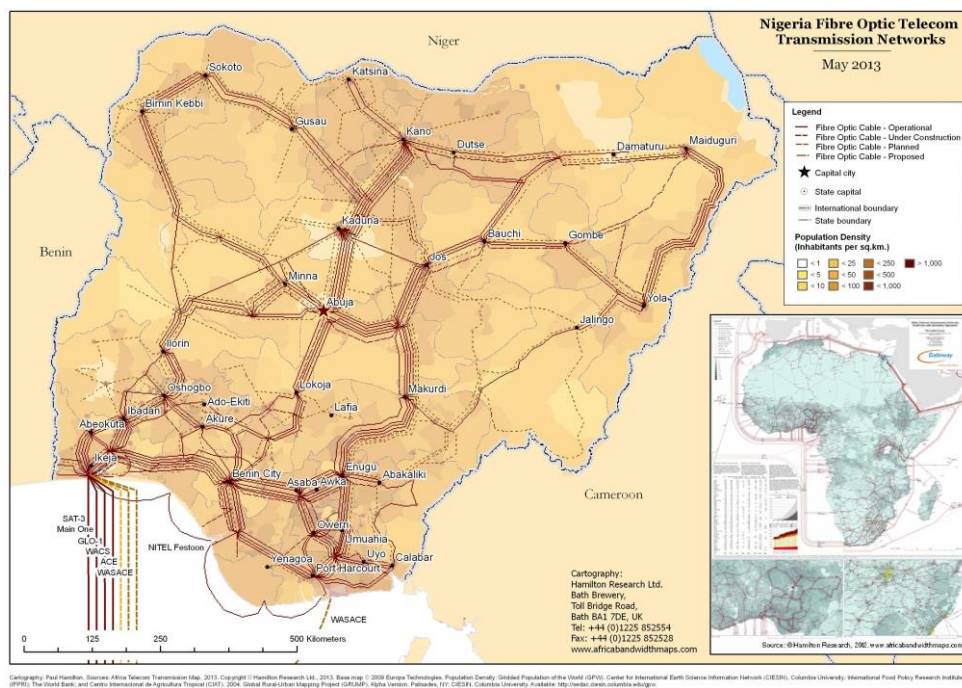


Figure 7: Fibre Optic Map of Nigeria by Paul Hamilton.

<sup>15</sup> Research ICT Africa (2012), Evidence for ICT Policy Action, Policy Paper 6, What is Happening in Nigeria, A Supply and Demand-Side Analysis of the Sector





#### D. OTHER CHALLENGES

The challenges to expanding 3G and LTE coverage and making fibre more widely available are not the only ones recognized by the Broadband Plan 2013-2018. It also notes related challenges such as multiple taxation and regulation, lack of electricity, low levels of ICT literacy, a lack of local content, delays in permit processing, and high costs of right of way resulting in the high cost of leasing transmission infrastructure.



*Picture: Participants at A4AI's Forum in Abuja in March 2014 debate challenges and solutions for affordable Internet in the country.*



## 5. ACTIONS SPEAK LOUDER THAN WORDS

For each challenge identified, the Plan outlines a number of practical and tactical solutions. To its credit, the government has already started pursuing these solutions.

### A. MULTIPLE TAXATION AND REGULATORY MATTERS

To tackle multiple taxation and regulation, a major complaint from operators, the government, under the auspices of the NCC, established the Industry Working Group on Taxation (IWG) in January of 2012. The IWG will review recent cases of multiple taxation, enlist the support of all stakeholders, articulate and publicize the industry position on the negative impact of multiple taxation, and develop strategies for addressing and managing the threat posed by multiple taxation to the growth of the ICT industry.

Lobbying is a major part the IWG's work and it appears its efforts are already having some impact. In Lagos, the state government has signed a Memorandum of Understanding (MoU) with the Association of Licensed Telecoms Operators of Nigeria (ALTON) and the Ministry of Communication Technology (COMMTECH). The MoU will see the Lagos state government collaborate with operators and COMMTECH to eradicate the rights of way issues, multiple taxation and vandalism that stifle operators' investment in infrastructure. The signing of the MoU has subsequently been met with positive statements of intent from operators. After the signing of the agreement, the Chief Executive Officer and Managing Director of Airtel Nigeria Segun Ogunsanya told reporters: *"Lagos can be the perfect example of collaboration for others to emulate. If they can take a cue from Lagos State and support the operators to service the consumers, that would be good for the operators, the industry, our customers and government itself...I am happy about what has happened. We are going to reciprocate the good gesture with additional services."*<sup>16</sup>

The win-win created in Lagos – it can be described as nothing else – shows that a willingness to meet challenges head-on can have an impact. In rhetoric at least, the signing of the MoU has created the virtuous cycle the Broadband Plan 2013-2018 says is essential for improving the ecosystem, increasing affordability and increasing access. Time will tell if those in Lagos State will see the infrastructure development they crave.

### B. DEVELOPING A SUSTAINABLE OPEN ACCESS MODEL

It is shifts like those made in Lagos State – in mindset, in actions and subsequently in business models – that are required if Nigeria is to meet the ambitious target of its plan. These shifts can bring about a reduction in the cost for operators, the additional investment needed to

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<sup>16</sup> Punch Newspaper, Telecommunications Infrastructure: Airtel Canvasses Collaboration Among States. See: <http://www.punchng.com/business/technology/telecoms-infrastructure-airtel-canvasses-collaboration-among-states/>



better provide services, reduced costs for consumers, and more demand for Internet access. Achieving a shift in thinking around open access will be a crucial success factor.

The Government of Nigeria has begun developing an open access framework, which it believes will fill the gaps in fibre optic and last mile wireless broadband infrastructure left by the private sector. In July 2012, the NCC began consulting stakeholders about the framework. By November 2013, it had developed a proposed framework for stakeholders to consider.<sup>17</sup>

Central to the framework is the establishment of seven commercial infrastructure companies (Infracos) that will roll out, lease where necessary, and operate fibre optic networks in Nigeria's six geopolitical zones and the economically important Lagos State. The Infracos, which will each operate in a particular zone, are eligible to receive one-off subsidies from the Federal Government and enter into revenue-sharing arrangements with state governments. They will be responsible for the provision of capacity to metropolitan areas that have been neglected. When all seven Infracos are operational and interlinked, they should provide nationwide broadband metropolitan and background deployment on an open access, non-discriminatory basis thereby lowering costs and facilitating more affordable access to users.<sup>18</sup>

The Infracos will not be responsible for the delivery of last mile services. Instead, the framework calls for the licensing of a company in the 2.3GHz spectrum band that will complement the Infracos by providing wireless access on a wholesale non-discriminatory basis using the 2.3GHz spectrum. The recent auction of 30Mhz of the 2.3GHz spectrum saw Bitflux, a consortium made up of VDT, BitCom and Superflex, narrowly beating Nigeria's second largest mobile operator, Glo, and making it, according to NCC Executive Vice Chairman Eugene Juwah, "a forerunner of the broadband revolution in Nigeria".

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<sup>17</sup> Nigeria, Nigeria Communications Commission (2013), Open Access Model for Next Generation Optic Fibre Broadband Network, The Nigerian Model Industry Consultation Paper

<sup>18</sup> Ibid



## 6. CONCLUSIONS

Nigeria has seen some impressive ICT developments in recent years; mobile telephone growth and dramatic increases in international bandwidth due to the landing of new submarine cables have created opportunities. However, broadband penetration rates remain disappointingly low, and prices remain too high for the vast majority of Nigerians to enjoy the socio-economic benefits that broadband access can deliver.

Nigeria's Broadband Plan 2013-2018 is a step in the right direction. It articulates exactly how Nigeria intends to increase broadband penetration five-fold to 30 percent within the next five years, and presents a time-bound plan for implementation.

The plan provides a solid foundation. As always, the key challenge lies in implementation. The successful execution of key parts of the plan, like the development of sustainable and efficient open access fibre optic networks, will be critical if Nigeria is to see the rise in penetration it desires and have ICTs contribute to it achieving vision 20:2020.

Key questions in the coming months and years include:

- Will the private sector engage with Infracos?
- How many other states will recognize the problem posed by multiple taxation and seek to tackle it in the way Lagos State has?
- Will policy and regulation successfully guide and incentivize the infrastructure sharing envisaged by the Open Access Framework?
- Can the Government and private sector work even more effectively with Nigeria's USPF?
- What will government do to ensure efficient and timely allocation of spectrum is successful, especially for mobile broadband?
- What local content will catalyze demand for broadband services and how will government act to spur the development of compelling local content?
- When will the the landing of submarine cables in other costal cities take place and what impact is it likely to have on Nigeria's wish to take fibre nationwide?





## ABOUT THE ALLIANCE FOR AFFORDABLE INTERNET

Launched in October 2013, the Alliance for Affordable Internet (A4AI- [www.a4ai.org](http://www.a4ai.org)) is a global coalition committed to driving down the cost of internet access in less developed countries.

A4AI focuses on creating the conditions for open, efficient and competitive broadband markets via policy and regulatory reform. Through a combination of advocacy, research and knowledge sharing, the Alliance aims to facilitate the achievement of the UN Broadband Commission target of entry-level broadband services priced at less than 5 percent of average monthly income. In doing so, A4AI will help to connect the 60 percent of people in developing countries who currently cannot access the Internet.

A4AI's 60+ members and local partners are drawn from both developed and less developed countries and include public, private and not-for-profit organizations. The World Wide Web Foundation, founded by Web inventor Sir Tim Berners-Lee, initiated the Alliance. Members include Google, Omidyar Network, USAID and the UK DFID.

Nigeria is a member of the Alliance, and in March 2014, A4AI held a multi-stakeholder forum in Abuja that drew together key decision-makers in the sector to discuss issues openly and hammer out a plan to drive down the cost of broadband in Nigeria.

For more information, visit: <http://www.a4ai.org>