PARADIGM INITIATIVE

Broadband Access In Nigeria:

Not Broad Enough, Not Qualitative Enough

POLICY BRIEF

June 2017

Introduction

Broadband Internet refers to an Internet experience at speeds higher than obtainable in dial-up services[1]. All over the world, Broadband Internet delivers the high speed communications which drives the rapid transfer of data for applications in media, healthcare, government services, education, amongst others. Broadband is now widely accepted to be an enabler of economic growth and development – a World Bank report found that a 10% increase in broadband penetration yields an additional 1.38% increase in GDP growth for low to middle income countries[2]. The Nigerian Broadband Plan 2013-2018, which defines broadband in the Nigerian context as "an internet experience where the user can access the most demanding content in real time at a minimum speed of 1.5 Mbit/s", is expected to spur the growth of Nigeria's digital economy. Thus, Nigeria's broadband plan, coming shortly after a decade of the deployment of mobile telephony in Nigeria, was a strategic document designed to accelerate development in the Telecommunications sector and bring the developmental impact of Broadband Internet access to all Nigerians.

State of Broadband Access in Nigeria

With a reported Broadband penetration of approximately 21%[3], Nigeria seems to have met her National Broadband Plan target of reaching "by the end of 2017, a fivefold increase in broadband penetration over the 2012 penetration rate (of between 4-6%)". However, with the International Telecommunications Union (ITU) putting fixed broadband penetration in Nigeria at 0.01%[4], admittedly, the bulk of this broadband access has been through mobile broadband. Internet penetration in Nigeria is put at 47%, according to the ITU. According to the Nigerian Communications Commission (NCC), there were just over 90 million active mobile internet subscriptions on GSM and CDMA networks as of April 2017[5].

Although Nigeria's broadband plan envisaged that mobile broadband would be the most popular medium for the actualization of the plan, perhaps it was overly optimistic in its plans for the rollout of Terrestrial wireless networks, Fibre, Cable, Digital Subscriber lines and Satellite Networks, given Nigeria's historic challenges with infrastructure development. As earlier noted, fixed broadband penetration is 0.01% and infrastructural and policy challenges has limited the effectiveness of Nigeria's only real claim to a national broadband network – mainly 3G and lately 4G Mobile broadband, resulting in resulting in poor quality of service.

[1] "Getting Broadband". Federal Communications Commission. 25 October 2016. http://fcc.us/2gcYnwX
[2] Zhen-Wei Qiang Christine, Rossotto Carlo M. & Kimura Kaoru (2009). Economic Impacts of Broadband. Information and Communications for Development 2009. http://bit.ly/2fKsVHR
[3] Umar Garba Danbatta, "The National Broadband Plan as a Catalyst for Social and Economic Transformation – The NCC Mandate", A presentation by the Executive Vice-Chairman of the Nigerian Communications Commission (NCC) to the Nigerian Academy of Engineering, Transcorp Hilton Hotel Abuja, November 9 2016. http://bit.ly/2s4CA1V
[4] "ITU ICT Facts and Figures 2016". http://bit.ly/2g9A8OT
[5] Nigerian Communications Commission, "Active Internet Subscriptions (GSM) and (CDMA)," http://bit.ly/2sDgFjj

Nigeria's Systemic Infrastructure Obstacle

Nigeria's low fixed broadband penetration must be set against the background of the Terabytes of broadband capacity which lay underutilized at landing points of International submarine cable on the Lagos coast. The successful outlay inland of this capacity has been hindered by factors including unfavourable government policies such as multiple taxation and Right of Way requirements. In a country that could only boast 200,000 telephone lines 40 years after independence for a population of over 120 million, Nigeria had always had challenges delivering infrastructural dividends to its citizens. The now rested state monopoly Nitel, despite not having to contend with the limiting factors earlier mentioned, and empowered by the biggest spender in the economy (the Federal Government), could only deliver fixed telephone lines to a privileged few (200,000 or 0.001% of the population) over 4 decades. This infrastructure challenge was not peculiar to Telecoms alone, but was also seen in the poor state of critical infrastructure in Nigeria.

Against this background of historical poor infrastructure delivery outcomes in Nigeria, it can be argued that the National Broadband Plan (2013-2018), in its far-reaching plans for an elaborate broadband infrastructure deployment across the nation was overly optimistic in its timeframe. This is particularly true in its plan for city-wide fibre deployment, which can be as involved as providing fixed telephone line access.

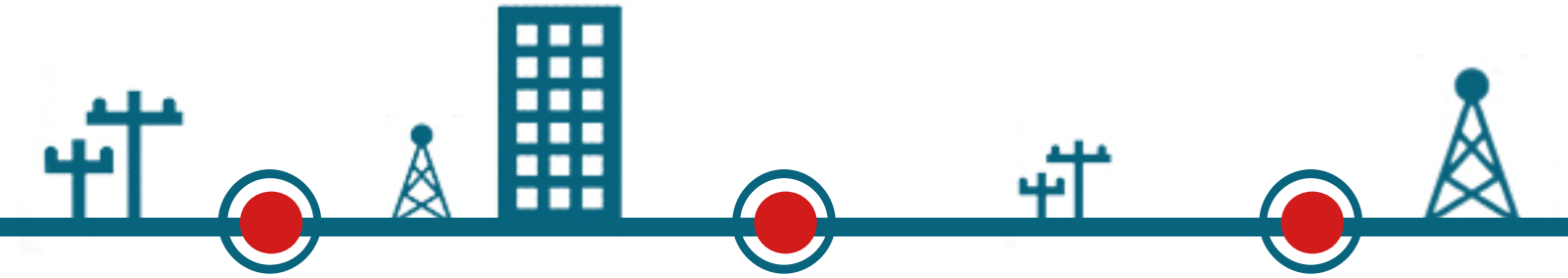
As envisaged by the National Broadband Plan, the best hope of delivering on Nigeria's broadband plan is by ensuring that the spread of Nigeria's 3G and relatively new 4G mobile networks which has largely helped broadband penetration to reach 21% is widened and the Quality of Service (QoS) improved. The Nigerian government is already taking steps to deepen broadband penetration through the licensing of six slots of the 2.6 GHz spectrum for the deployment of 4G services in 2016 and the planned licensing of broadband services on the 5.4 GHz spectrum bank and allocation of 70/80 GHz band (E-band), amongst other plans.

The success of Nigeria's GSM network is itself quite a story because in some respects, it defied Nigeria's infrastructure challenges, partly being because it did not require the same level of elaborate layout of infrastructure house to house and street to street as required in fibre deployment for instance; a number of Telco Towers sufficing for each coverage area – plus backhaul infrastructure.

"In a country that could only boast 200,000 telephone lines 40 years after independence for a population of over 120 million, Nigeria had always had challenges delivering infrastructural dividends to its citizens"

Sections of the National Broadband Plan

Notice how overly optimistic the plan for Fibre infrastructure is.
Today fixed broadband penetration in Nigeria is 0.01%



2014

Building Fibre Infrastructure

- Build Metro fibre networks in all the major cities and state capitals
- Incentivise building of last mile wire line infrastructure to homes, estates, and commercial premises
- Extend international cable landing points to other coastal states

Responsible :
- Licensees, State Govts.

- National Communications Commission (NCC), Licensees

- Federal Ministry of Communication Technology (FMCT),NCC, Licensees

2017

Wireless Broadband Infrastructure Upgrade and Expansion Phase 2

- Spread 3G/LTE to at least 70% of the population

Responsible :
- Licensees, NCC

2018

Wireless Broadband Infrastructure Upgrade and Expansion Phase 3

- Spread 3G/LTE to at least 80% of the population

Responsible :
- Licensees, NCC

With exactly 2 years of the Broadband Plan left (2017-2018) and the fixed broadband penetration rate at 0.01%, there is an urgent need to revise the National Broadband Plan for fixed broadband. The remaining 2 years also provides the opportunity to solidify the gains of the national spread of mobile broadband. A key metric which captures the quality of Internet access in Nigeria is the Average Connection speed, put at 3.9 Mbps (compared to a global average of 7.2 Mbps), according to Akamai's "State of the Internet" Q1 2017 report[6]. This cannot be divorced from the state of Network infrastructure in the country. In the United States and the United Kingdom for instance, there is an average of 1 Telecommunications base station for 2,300 and 2,100 customers respectively. In Nigeria however, there are about 39,000 Telecommunications base stations for a population of over 180 million, an average of 1 for 4,600 consumers[7]. The state of Network infrastructure is centrally linked to the poor Quality of Service (QoS) in mobile broadband delivery in Nigeria. According to the Customer satisfaction survey conducted by the Nigerian Communications Commission (NCC) in 2012[8], nationally, there were marginally more respondents reporting that their connection speed was "slow or very slow" than those reporting it as "fast or very fast".

This policy brief, which follows Paradigm Initiative's first policy brief on broadband[9], stresses that the years 2017-2018 provides another opportunity to revise the National Broadband Plan, perhaps extending the target year beyond 2018 in respect of fixed Broadband (fibre), while rallying to meet the targets for mobile broadband in terms of Quality of Service (QoS) as also noted in the plan.

A major hindrance to the scheduled outlay of terabytes of fibre broadband from the Nigerian coast to the Nigerian interior has been the policy bottlenecks of multiple taxation and right of way requirements which have burdened ISPs. In this regard, it is important to call on the Federal Government to get its priorities right. The proposed plan for second and third national satellites, in our opinion, is wasteful, because resources allocated for this project can be used to broaden Internet access. We are of the opinion that the government can do with 1 or 2 satellites for now – there is no empirical evidence the current satellite (NigComSat-1) has given a good return on investment and financing planned for a third satellite can be channelled instead to funding tax breaks and right of way abstentions for ISPs. A nation that cannot in the 21st century provide reliable broadband access to the majority of its citizens has no business in space in the first place.

Another immediate priority for the government will be to formulate policies that will prioritize a marked increase in the spread of 3G/4G networks – given they are the only realistic route for achieving some of the goals of the Broadband Plan within the current timetable. The licensing of six slots of the 2.6 GHz spectrum for the deployment of 4G services in 2016 was therefore a step in the right direction. Indeed, the Broadband plan notes that,

> *"At this juncture 3G (or HSPA) mobile broadband technology provides the fastest way for the delivery of universal mobile broadband access in Nigeria now and in the near future, while targeting LTE technology for future high capacity networks. 3G and LTE are indeed the most ideal solutions for leapfrogging Nigeria to high speed broadband delivery."*

[6] Akamai, "Average Connection Speed," map visualization, The State of the Internet, Q1 2017, http://akamai.me/2sDn91x

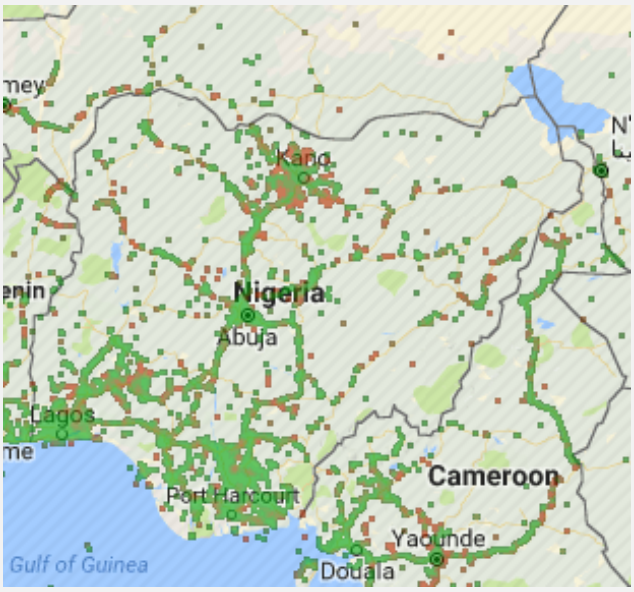
[7] Workshop for Judges on Legal issues in Telecommunications organized by the Nigerian Communications Commission and the National Judicial Institute, Abuja. October 31-November 1, 2016.

[8] The Nigeria Communications Commission Consumer Satisfaction Survey 2012. http://bit.ly/2t5TKdS

[9] Abikoye O and Yusuf S (2013). Nigeria: Towards Enhancing Affordable Broadband Access. http://bit.ly/2meeT2D

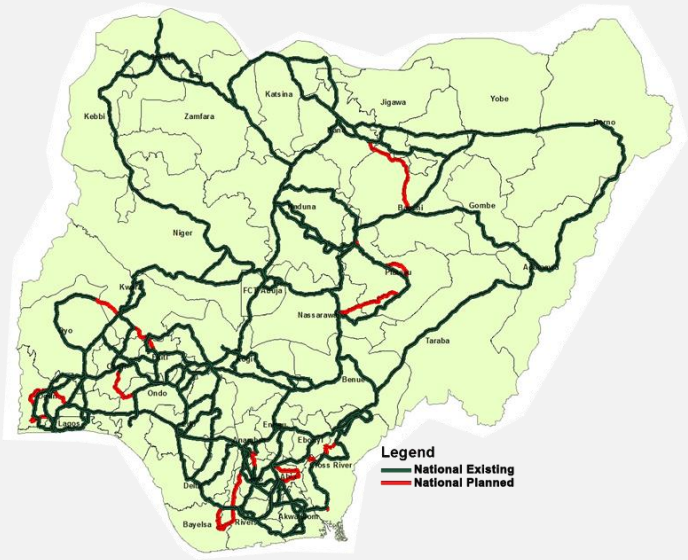
Therefore all hands must be on deck to ensure that the worthy goal of connecting every Nigerian to a superfast and reliable broadband network is realized.

Nigeria's 3G and 4G coverage map



Nigeria's 47% and 21% Internet penetration and broadband penetration rates respectively can be partly explained by the concentration of telecom signals in highly populated urban areas and the neglect of the rural countryside where broadband affordability and consequently demand is a challenge. [Source: OpenSignal 3G and 4G LTE Cell Coverage Map]

National Fibre Optic Map



The figure above shows gaps between the National Planned and National Existing Broadband Fibre Infrastructure (37,104 km) in Nigeria. This challenge has been identified by the National Broadband Plan as critical to achieving broadband penetration target of 30% by 2018. [Source: Universal Services Provision Fund/Nigerian Communications Commission]

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