

Sustaining Broadband Infrastructure Expansion through Universal Service Provision Fund (USPF)

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Abstract---The Universal Service Provision Fund (USPF) is a body set up by the Nigerian Communication Commission to promote the growth of Information Communication Technology (ICT) connectivity in the rural areas and to ensure the implementation of the development of a Strategic Management Plan 2013-2017 for the ICT industry. The government plans to use USPF as a vehicle to fast-track ICT access and address other issues affecting both data and voice services availability. The writers acknowledge that though Nigeria is still facing a number of infrastructure challenges which is impeding ubiquitous access to ICT connectivity and services but opine that something can still be done to address some of the challenges facing ICT penetration in the country. The paper concludes by suggesting various measures that will lead to a successful broadband roll-out in the country and listed some strategies for achieving the strategic plan for the ICT industry in Nigeria.

Keywords: Access Gap, Backbone Infrastructure, Backhaul, Technology Neutrality, Universal Access.

I. INTRODUCTION

The Universal Service Provision Fund, USPF, is a special fund set up by the Federal Government of Nigeria under the National Communication Act 2003, designed to provide telecommunications and ICT services to un-served, underserved and deprived groups and communities in the country^{[7] [8]}. The fund comprises one per cent levy of yearly profit of telecommunication operators in Nigeria. The USPF has been involved in promoting ubiquitous connectivity, facilitating community communication centres in underserved and un-served areas of Nigeria among other projects. It will be recalled that the Nigerian Communication Commission initiated the Wire Nigeria project, WiN, under its universal service provision fund (USPF). As a scheme under USPF, WiN is a telecommunication subsidy project aimed at expanding the transmission network across the length and breadth of the country^[1]. The project is focused at cabling the whole country in the shortest possible time with the objective to ensure that no place in the country should be farther than 30 miles from the backbone infrastructure. By this, all hinterland can be connected with the hope of boosting commerce and trade in those places as well as meeting basic communication needs. So far, hundreds of kilometres of new optic fibre cables have been installed under the WiN programme. This is obviously an unsung story of subsidy success in Nigeria^[3]. Recently the United States government provided funds to grow broadband availability and access throughout rural parts of the country under a special funding programme called Connect America. The fund is

an avenue for the US government to provide subsidies to the communications companies so they can expand broadband access in un-served areas. Besides this scheme, the US Federal Communication Commission (FCC) also provides subsidies to telecommunication companies to bring 3G or 4G services to areas in the country that do not have it. The same FCC provided \$4.5 billion Internet subsidy under the Connect America who lack broadband access. This fund was provided to support broadband upgrades in areas that will not be covered by any commercial roll-out. Given the success of the Connect America Fund, the most significant government efforts to bring broadband to un-served communities, industry experts in Nigeria have advised that the country should toe a similar route to further develop the telecommunication sector. The dearth of telecommunication infrastructure in Nigeria and the need to quickly get telecommunication services to the nooks and crannies of Nigeria and enhance the overall economy, special attention has to be paid towards establishing and developing government-financed schemes similar to what the US government is doing.

II. THE NEED FOR SUSTAINED SUBSIDY FOR CAPACITY EXPANSION

It is a good thing that subsidy already exists in the form of the Universal Services Provision Fund (USPF). This has helped in taking services to places, which would ordinarily have taken sometime before being reached. According to a research carried out by Streamz Media, a Nigeria telecommunication research firm, the telecommunication sector is currently recording impressive subscriber growth and with also the introduction of increasing variety of services, further gains can be made if government can sustain subsidy for capacity expansion into underserved and un-served areas^[6]. It is also said that a change of the scope of coverage of current subsidy programmes would facilitate enhanced benefits under the fund. Government subsidy will surely provide a platform for telecommunication services to reach Nigerians everywhere no matter where they reside in the country. Operators of telecommunication have done a lot in terms of fulfilling their original mandate of provision of services to customers, but many of these operators have primarily invested in areas of infrastructure development in order to reach customers due to the country's failure to develop such infrastructure over the years. Government should not think that this will continue as operators will only limit themselves to areas they are sure will deliver commensurate revenue to

investments made. This is where government must come in and provide subsidy for infrastructure expansion. Research ^[8] has shown that if government steps in effectively, then current growth in the sector can be sustained and more people will be connected to telecommunication services. Globally, government subsidy has also been a way to aid faltering businesses, noting that during what was called “the great recession”, the US government subsidized many vital sectors of the country’s economy. To aid the development and exploration of the energy sector, the US government provided subsidies for businesses in the energy sector. A broad variety of tax accounting allowances, credits, exemptions, deductions, depreciation and other financially beneficial tax breaks were given by the federal government to energy producers. Up till now, in order to assure power availability at lower than market price, the US government owns certain dams which generate hydroelectric power. The US government subsidises many elements of the transportation sector to ensure that fast, efficient, reliable and economical movement of people, commercial goods and mail from one place to another ^[8].

III. RE-DEFINING THE WORKINGS OF USPF

There is an urgent need to change the workings of USPF to deliver further benefits to Nigerians. The definition of some areas as un-served and underserved must be changed to promote increasing service usage in the country. The existence of telephones services in an area does not mean that it is not underserved. Under the current definition we cannot use USPF for certain class of projects in Lagos because the state does not fall under underserved areas. But if you take the University of Lagos where there are over 30,000 students, you see that we can put extensive fibre on the school and promote the use of telecommunication in more innovative and cost-effective ways ^[1]. This can be done under USPF. The need to provide such a service has been realised by Google, the world’s leading Internet Company, which is currently working at putting fibre in a number of Nigerian Universities. The fact that Google is trying to do it shows that there is some form of value in embarking on such subsidised projects. Government should see that this move by Google as a challenge for it to do more in facilitating similar projects.

IV. TAKING SERVICES BEYOND BASIC VOICE AND ACCESSING RECENT TECHNOLOGIES

It is worth noting that while millions of Nigerians now have mobile phones, the shift in telecommunications development must be towards actual number of citizens that have access to broadband services. While the country had achieved a lot in bringing basic services to the people the move now must be towards delivering broadband services. The writers now call for greater support of USPF in order for the fund to succeed and deliver further

gains to Nigerians especially in the backdrop of its potential. Subsidy in telecommunications is different from what obtains in the power and transportation sectors. The Nigerian Communication Commission has done a great job by helping to set up the USPF. In the coming days and years, we must all support the fund to record greater success to Nigerians. While USPF is helping to support in infrastructure sharing, if government had helped in providing facilities right from the onset, operators would just utilize for their base transceiver stations and the distress suffered by CDMA operators could have been averted. Subsidy is necessary in every liberalised economy.

V. THE TRANSITION NETWORK/TELEDOM EXPERIENCE

United States of America’s technology firm-Transition Network Inc- in partnership with Teledom International Ltd, Nigeria has concluded plans to launch its range of transition products in Nigeria. This collaboration between the two companies will see Teledom Int. Ltd, a leading broadband infrastructure and technology provider in Nigeria distributing world class product of Transition Network in the country’s Information and Communication Technology (ICT) market. The American company offers networking products that enable ICT infrastructure builders, network designers and builders, system integrators and network operators deliver and manage their networks efficiently, excellently and cost effectively ^[5]. Specifically the company claims to Enterprise Network Solutions including Ethernet Switches, Routers, Fibre Modules, media converters and Network Management solutions. Other are optic fibre network for data, voice & video, mobile backhaul applications, connectors access control and video surveillance systems for home land and national security operations. According to <http://www.transition.com/Transition> Networks, Transition Networks essentially provides reliable network devices of the future applicable in government, education, industry (processing, manufacturing and infrastructure), telecommunications, IT, banks, electronic media, security amongst others. With over 20 years of growth and expertise in hardware manufacturing, Transition Networks is reputed for integrating the benefit of fibre optics into any data network-in any application-in any environment. On the other hand, Teledom Inter. Ltd is an ICT- based solutions provider in Nigeria. The company offers to its esteemed customer’s conglomeration of products and services from site survey installation, commissioning to back-up services as a matter of corporate commitment. Its products include smart classroom, smart building, smart city, smart campus, smart government, smart hospital, etc.

VI. NEED FOR MASSIVE BROADBAND INFRASTRUCTURE ROLL-OUT

To drive broadband usage in Nigeria, operators should aggressively pursue more investment on Infrastructure. This will ensure that the bandwidth capacities at the shores are fully utilized. Bandwidth services naturally will flow through broadband infrastructure, but the nagging question remains on what we have to do to ensure rapid broadband infrastructure penetration to every nook and cranny of Nigeria so that broadband services can flow through. We need massive broadband infrastructure roll-out across the entire length and breadth of Nigeria. We have Main One Cable's 1.9 terabits/sec broadband as well as those of Glo One SAT3, WASC at the coast. We must get these to the hinterland of Nigeria. We need massive roll-out of fibre optic cables, broadband wireless (radio and light-laser) and broadband VAST to carry terabits/sec broadband capacity from the coast into the hinterland. We cannot afford digital divides in Nigeria. Matter of fact, there is a very close correlation between broadband capacity available to a nation, a people, a state and the level of their economic activities and productivity. The World Bank has established the fact that broadband penetration increases GDP of nations much higher than narrowband (like voice), emphasising that the country's voice centric telecommunication revolution has impacted positively on many lives in Nigeria and has given a boost to economic growth rate^[8]. You can then imagine what will happen when we go broadband in full blast. As it is, the country needs secondary and tertiary fibre-based broadband backbone across it. Let the secondary connect the state capitals to Main-One, Glo-One and let the tertiary connect the local government headquarters to the state capitals. A lot of resources will be required to do that. We must have fibre to the building and fibre to the home. We must have city-wide and town-wide WiFi coverage. All schools, colleges, polytechnics, universities, hospitals, hotels, airports, stadia, places of worship (churches and mosques), government offices and military establishments among others must have broadband Internet.

VII. CREATING DEMAND FOR BROADBAND SERVICES

We must create demand for broadband services. We must create content within the broadband pipes. We cannot just be downloading all the time, we must also be uploading. We must have a culture of presence on the net. Excessive downloading without commensurate uploading can lead to cultural imperialism and digital colonialism. Applications will create demand for broadband. There is tele-medicine; tele-health, voice-conferencing, tele-education/distance learning and we have the need to automate teaching and learning processes in the academic institutions in Nigeria. Indeed the country can have ICT-based automation of processes in the Nigeria Police

Force, Army, Navy, Air Force, Customs, Immigration, NDLEA, Prison, State Security service, Road Safety, Nigerian Security and Civil Defence. The NCC has to tidy up its broadband penetration model for public presentation. NITDA has to begin the implementation of its IT policy. Both agencies of Communication Technology Ministry must work closely for full digital dividends to accrue to Nigerians. The Communication Technology Ministry must aggressively husband the use and deployment of Nigerian ICT content in the whole national economy.

VIII. INFRASTRUCTURE SHARING & COLLOCATION AND THE FEAR OF SABOTAGE

Infrastructure sharing and collocation especially in the area of fibre optic cable roll-out is also a major challenge among telecommunication operators^[3]. Telecommunication operator's fear sabotage in sharing fibre cable and would rather prefer to roll out their own cable. To tackle this challenge, the Nigerian communication commission could introduce a collective ownership of fibre roll out by the operators with an independent consortium to manage it on behalf of all the operators^[4]. By this arrangement, the fear of sabotage could be well handled. The economic benefit inherent in infrastructure sharing would facilitate faster infrastructure roll out, drive down the cost of telecom services and improve service quality. Again it is our opinion that any project funded by USPF will be open for collaboration by all operators. That is to say that USPF should encourage infrastructure sharing on all Base Transceiver Station (BTS) built by USPF in mostly rural, un-served and underserved areas across the country.

IX. FACTORS THAT WILL DETERMINE SUCCESSFUL BROADBAND ROLLOUT

In Nigeria, broadband penetration is less than 10% hence there is a huge opportunity for growth and subsequent increase in penetration to un-served and underserved area and population^[3]. Government or private enterprise alone cannot ensure universal access to broadband services. To make this possible, government and private sector need to collaborate. Some of the factors that could determine how successful broadband roll out in Nigerian will include^[7]:

- Importance of having an overall plan to roll out broadband at national level in consultation with industry
- Political backing at the very top levels to ensure broadband roll out. This will ensure bureaucratic bottlenecks and access rights are speedily addressed
- All ministries and government departments must work in a synchronous manner
- Required spectrum is made available. Especially spectrum that provides the biggest advantage in terms of coverage, capacity and wide adoption across the globe to provide the biggest economies of scale advantages for devices and equipments utilizing

these spectrums and the potential to make devices affordable for low income households

- The public partnering with the private sector and the use of Universal Service Funds
- Devising regulatory frameworks that ensures non-disciplinary access to back-haul
- Technology neutrality: deploy different technologies as appropriate for different situations
- Parallel initiatives to stimulate demand e.g. providing net books to primary and secondary school students, creating awareness on the benefits of broadband services etc
- Providing universal access to broadband will require addressing the issues and factors as stated above in addition to addressing the needs of disadvantaged groups in utilizing broadband services either by adapting the services to their needs and/or proper device configuration to meet the needs of disadvantaged groups.

X. STRATEGIES FOR ACHIEVING THE STRATEGIC PLAN FOR THE ICT INDUSTRY

In seeking for the strategies for achieving the strategic plan for the ICT industry for Nigeria, there is need to seek industrial inputs that will help define the direction of the fund's activities. Among the challenges faced by USPF in implementing SMP 2013-2017, emphasis must be placed in carrying out some key activities in the execution of the new SMP. These should include:

- Embarking on a holistic approach to project solution
- Engagement of stakeholders
- Qualification of maximum allowable subsidies
- Sustainability of operational cost
- Implementation of a monitoring and evaluation framework
- Etc

By these activities, USPF would be able to address access gap and market efficiency gap by ensuring that only projects tailored to the specific needs of benefiting communities are embarked upon. The USP aimed to drive increasing access to community-based data and voice service on a shared basis by establishing additional Community Communication Centres (CCC) across the country, embarking on Schools Access Projects (SAP) and Tertiary Institutions Project (TIAP), with the specific intention of subsidizing the costs of providing internet services, ICT equipments to identify target population on a shared or individual basis.

XI. CONCLUSION

Every economy almost all over the world has some form of subsidy programme. In Nigeria aviation industry, we see an obvious need and the recent events have further exposed this need. In the United States, the intervention of government in General Motors is what prevented the firm from going under during the global financial meltdown. While the telecommunication industry in Nigeria may be doing well today, we must not be fooled

into thinking that all is well in every aspect of the industry. If USPF were not set up with the aim of providing finance for the project expansion, many places that have services today would remain unconnected.

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