Reforms in the Nigerian ICT sector

Introduction

Information and Communication Technologies (ICTs) have brought about unprecedented improvements in the world's economic, political and social systems. This has led to the development of new goods and services with attendant significant impact on people and their way of life. The ICT sector has come to play a critical role in the sustainable growth and development of nations and Nigeria is no exception.

Globally, the ICT industry began to record exponential growth when nations, under the auspices of the World Trade Organization (WTO) signed the global agreement for the deregulation and liberalization of the Telecommunication sector.

In Nigeria today, the sector is the 4th pillar of the economy in terms of its contribution to the Gross Domestic Product (GDP) and the fastest growing at a rate of 24% and currently contributes 10.26% to Nigeria's GDP[5].

Reforms in the Telecoms sub-sector - The Problem

The inefficiency and ineffectiveness that characterized the Nigerian telecommunications sector under the Nigerian Telecommunications Ltd (NITEL) monopoly, among other factors, informed the government reform policy in the sector from 1999. These reforms, which opened up the market to local and foreign private operators, introduced much needed competition into the telecom market.

The reforms ensured the substitution of competition for monopoly by offering 60% share of NITEL and M-TEL to private individuals and organizations and licensing private companies to operate side-by-side with NITEL. These historic reforms involved the three elements of privatization, deregulation, and liberalization.

In 2009, 20 firms were licensed to provide a range of telephone and Internet services using Global System for Mobile Communications (GSM), Code Division Multiple Access (CDMA), and fixed wired/wireless technologies. A regulatory body, the Nigerian Communication Commission (NCC) was established to license and regulate the activities of the operators towards achieving the reform objectives and prevent anti-competitive tendencies.

Reforms in the Telecoms Sub-sector - Reform Actions

Coincidental with the 2001 GSM licensing process, a new board was appointed and inaugurated for the Nigerian Communications Commission (NCC).

With this move, the key mobile telephone market was liberalized, bringing in mobile operators like MTN Nigeria, the erstwhile Econet Wireless, the now defunct M-tel, Globacom, With this move, the key mobile telephone market was liberalized, bringing in mobile operators like MTN Nigeria, the erstwhile Econet Wireless, the now defunct M-tel,

[5] NBS GDP Rebasing

Globacom, and more recently, Etisalat. The GS[6]M licensees paid US$285 Million each to obtain the Digital Mobile License (DML). The GSM auction process stripped NITEL of its monopoly and ensured that efficiency and customer satisfaction was enshrined in the telecommunication sector.

Thus, Nigeria opted for full sector reform and backed it up with a telecom policy document that clearly articulated the intentions of government for the sector and the roles of the various stakeholders. The draft National Telecom Policy (NTP) was approved by the Federal Executive Council and released in September 2000. The overriding objective of the National Telecommunications Policy was to achieve the modernization and rapid expansion of the telecommunications network and services. This would enhance national economic and social development, and integrate Nigeria internally as well as externally into the global telecommunications environment. Telecommunications services should, accordingly, be efficient, affordable, reliable, and available to all.

This policy enabled extensive progress within the telecommunication sector and progress is continuing to this day. However, there has been stagnation in some areas, thus, highlighting the need for increased focus and investment, especially in enabling access in the more rural, remote areas of Nigeria where many citizens do not have access to telecommunication infrastructure.

In order to tackle this latter problem, the Universal Service Provision Fund (USPF) has had it's mandate re-affirmed through the development of a five-year strategic management plan (2013 – 2017). More realistic targets have been set, strictly aligned with the Ministry's core mandates and incentives designed to encourage improved participation by the mobile network operators with USPF programs.

On a broader level, a comprehensive National Broadband Plan has been rolled out, a result of Presidential Committee set up to address the poor penetration of broadband services nationally. The Broadband Plan is to be managed by Broadband Council, to ensure targets are met on time and fully. Key deliverables from the plan, including timed spectrum auctions, facilitating the rationalization of Right of Way (ROW) charges and the licensing of regional Infrastructure Companies (Infracos) to deploy fibre optic cable in designated geographical regions.

The NCC continues to respond to subscriber demands for easy switching options among the available GSM providers and launched the Mobile Number Portability (MNP) initiative in April 2013. The declaration of Dominant Operators was made, also by the NCC to ensure a level playing field among the mobile telephone providers.

Main Achievements – Telecoms sub-sector

The full liberalization of telecommunications has impacted on the economy in a number of ways:

1. Provided employment to many Nigerians. By the second quarter of 2014, the Nigerian ICT industry alone provided both direct and indirect employment to over 3million people in the country. This include over 10,000 direct and between 1 – 3 Million indirect jobs by the Telecoms operators2
2. The number of people that have direct access to telecom services has increased significantly. Prior to full liberalization, the total teledensity recorded in Nigeria was 0.04 per 100 inhabitants in 1999, but increased to

[6]Pyramid Research Report, 2013

1.89 in 2002 after full liberalization, to 42.13 in 2008 and 87.06 in 2013. By June of 2014, the total teledensity was 93.41 lines per 100 inhabitants in Nigeria7.

3. The total revenue accruing to the government in the form of taxes received from the telecom sector has also increased significantly. Taxes paid by Telecom operators are estimated to be about N160Bn with about N55Bn paid in regulatory levies, annually8. This is exclusive of the amount paid to government in the form of license fees, duties, and other statutory payments.

4. Liberalization of the telecommunication sector has boosted foreign direct investment. As at August, 2014, report from NCC data indicates that the total FDI attracted by the telecom sector was $32 Billion.

5. There has been a steady increase in telephone subscription in the country since 1999 with a tremendous growth in the subscriber base in the country from a mere 508,316 subscriber lines in 1999 to 130,780,703 in 2014 representing over 26,000% growth.

6. Access to Internet is rising, with 41.5% of Nigerians as at end 2013 having access, compared to 34% at the end of 2012. As a result, more of government services (e.g. processing of international passport) being delivered online are accessible by Nigerians.

7. Rural broadband initiative providing wholesale broadband internet bandwidth to ISPs, cyber cafes, and ICT centers in rural communities. Of the 18 pilot sites selected, 12 are 95% complete and transmission testing is ongoing in others.

8. To address the need to deploy significantly more base stations across the country, operators have committed to spend at least US$6Bn on infrastructure from 2013. In order to achieve this, the Ministry has worked to facilitate increased confidence in the Nigerian telecommunications sector and has continued to engage with industry stakeholders to identify challenges and negotiate solutions. This has resulted in a growing willingness to increase investment.

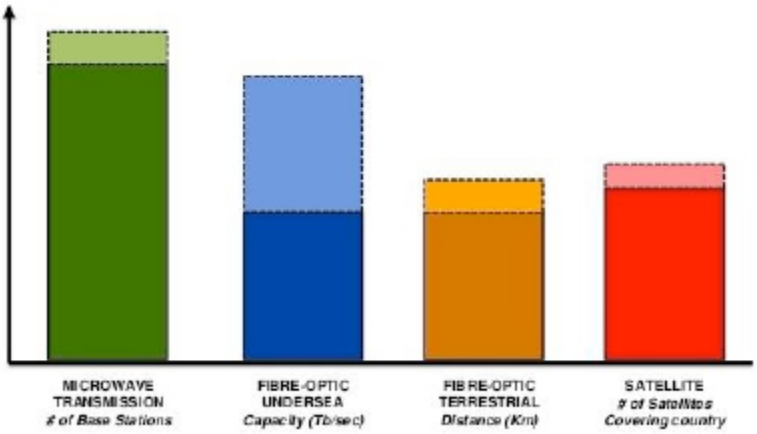
9. Federal Government through the National Economic Council had secured agreements with governments at the state and local goverto eliminate multiple taxations and streamline application and approval processes. We have also harmonized the regulation of base stations between NCC and NESREA.

Infrastructure expansion from 2010 to 2013 can be seen in the chart below with the highest increase relating to undersea fiber-optic developments.

Infrastructure Expansion 2010 versus 2013

[3]NCC

[4] Pyramid Research Report, 2013



As demonstrated by the chart above, microwave transmission has increased exponentially since the inception of GSM providers, from 116 in 2001 to about 21,000 by 2010 but the pace of growth has slowed, with just 4,000 to 5,000 extra between 2010 and 2013, even as some existing base stations have been decommissioned as a result of terror attacks, theft, and vandalization. Other factors impeding growth include higher-set up and operating costs due to multiple taxation fees and levies; lack of sustainable power; delays and opportunity costs due to multiple regulation and un- standardized application and approval processes as well as security challenges.

10. Fiber-optic networks have increased more markedly undersea rather than on land. When the Ministry was established, there was access to a potential 4.76Tb/s of international bandwidth capacity. Since then, there has been a rapid increase with 5.1 extra Tb/s being added. Unfortunately rollout of the terrestrial fiber-optic network is not keeping pace with the increasing international bandwidth landing on Nigeria's shores with only an addition 11,000 km being laid since 2010, when there was 30,000 km, and most of this mainly duplicating along a few commercial routes. The cost of Right of Way (RoW) on Federal Highways has been standardized while applications are now processed within 21 days. Furthermore, the price of RoW has been reduced to ₦145,000 per linear km. Legal instruments to secure ICT infrastructure nationwide have been developed and there are commitments by state governments (via the National Economic Council) to collaborate on multiple taxes and regulations. Single tax payment to all state government agencies on an annual basis has been negotiated while RoW applications have been streamlined to be processed in 30 days and revised downwards from as high as ₦6.5 million per linear km to ₦ 145,000 per linear km

11. To ensure improved broadband connectivity, Federal Government through the NCC has successfully auctioned the 2.3GHz frequency, increasing revenue generated by the sector to the national economy. In addition, seven companies have been authorized to commence trial service of TV white spaces technology in order to further boost broadband connectivity.

12. Through the deployment of Universal Service Provision Fund (USPF) ICT infrastructure has been extended to un-served and under-served areas by deploying base stations in rural areas with about 54 base stations installed in 2012 and additional 28 in 2013. The Ministry is also currently deploying 500 km of fibre with 3,000 targeted for 2013 and 2014.

The results achieved in increasing access to ICT services are demonstrated in the table below with a continued increase in fixed lines and mobile subscriptions from 2011 to 2013,

increasing percentage of the population with Internet access and increasing speed of broadband access.

Increasing access to ICT services

Increased access to ICT services	2011	2012	2013	2014	Expected 2015
% Tele-density -Fixed Lines -Mobile subscriptions	0.5% 68.5%	1.5% 71.5%	1.8% 83%	93.41%	10% 98%
% Population with internet access -% Access of rural population	19% 1.5%	34% 1.6%	36% 2.5%	44.45	42%
% Mobile phone coverage of rural areas	NA	40%	NA		60% and 100% b
Cost of broadband subscription (3gb package/year)	N93, 000	N72, 000	N60, 000	N55,000	N36, 000 (50%
Speed of broadband access (Mb/sec)	1*	1.8*	2.4*	3.3*	5.0

*Actual speeds are those available in cities (Abuja, Lagos, Port-Harcourt)

Reforms in the IT sub-sector

With the unprecedented achievements recorded with the reforms in telecommunication sub-sector and the realization of the fact that Information and Communication Technologies (ICTs) can bring about outstanding improvements in Nigeria's economic, political and social systems comes the need to bridge the digital divide in order to strategically position Nigeria as a major player in the global information society. In response to this need and the desire for continued progress, government created a new Ministry of Communication Technology in 2011.

The creation of this ministry also enabled the concentration of focal ICT agencies under one umbrella that has led to the following:

1. Achieving better sectoral performance by reducing duplication
2. Capitalizing on synergies between complementary agencies
3. Achieving economies of scale and scope to deliver value to the Nigerian economy and society

Reforms in the IT sub-sector – The Problem

Equally important, the Nigerian ICT industry currently displays a paradoxical economic deficit and a negative balance of trade. This is due to the fact that the economic value generated locally in comparison with the imported technologies used by Nigerians is far below optimal. International companies currently dominate the Nigerian ICT Industry. They have about 70% of the PC market share; 100% of mobile phone market share and 78% market share of mobile network operators.

Software imports into Nigeria is estimated at about US$1bn annually[9] while participation of local companies is further restricted by predominance of un-specialized value chains, highly fragmented industry as well as intense competition in limited 'fringe' sub-sectors.

However, there is notable participation of an increasing number of local companies in various aspect of ICT including Original Equipment Manufacturers (OEMs) internet service provision, back haul networking provision, submarine and terrestrial communication cabling, e-commerce and local software development sub-sectors are growing.

Despite these achievements, there is overwhelming evidence that participation and contribution of predominantly local companies and professionals is not significant.

The absence of focal points for the adoption of ICTs by Government and for governance resulted in the inability to capitalize on economies of scale which led to increased but dedicated government IT expenditure on hardware and services; lack of coordination and standardization of technology used by government which led to high number of legacy, proprietary and interoperable systems; proliferation of non-standardized data sets and duplication of information (often using different formats); and dispersed infrastructures vulnerable to security threats.

Developing the local Software Ecosystem, enshrining the use of ICTs in Government and growing the domestic ICT industry are all therefore very strategic to putting Nigeria on the path of becoming knowledge based economy.

Reforms in the IT sub-sector – Reform Actions

Growing the domestic ICT including:

Local Content

The Ministry has placed tremendous emphasis on this factor, with the acclaimed intention of lowering the barriers to entry and increasing the participation of Nigerian companies in the ICT sector with the resultant effect of stimulating job creation in the industry.

An appropriate program has therefore been designed around these broad aims with the more specific intentions quoted below

- To increase the participation of the local companies and domestic value add to the industry
- To stimulate sizeable and strategic investments and partnerships in the domestic ICT industry
- To secure the continuing and sustainable growth of the ICT industry

To better articulate expectations and responsibilities of all stakeholders in the growth of the ICT industry The National IT Development Agency (NITDA), collaborating with the

[9] NOTAP

Nigerian Communications Commission (NCC) as well as the Federal Ministry of Industry, Trade & Investment have thus drawn up a key policy document termed "Guidelines for Nigerian Content Development in ICT". NITDA have also set up a program office, the "Office of National Content in ICT (ONC)", headed by a National Coordinator and also with an advisory board populated from the private sector, academia as well as government.

The ONC will essentially act as the implementation body for the Guidelines for Nigerian Content in ICT.

Innovation & Ideation:

To strengthen the Nigerian Software Development ecosystem, while encouraging Nigerian ICT entrepreneurs to create successful businesses, government facilitated the establishment of private sector-managed innovation centers. The centres will provide the enabling environment that would assist software entrepreneurs or start-ups create successful businesses and provide support to the entrepreneurs to build software skills, solutions and businesses critical to their successes.

IT in Government:

To reinforce government's commitment to improve internal efficiency in government, the Ministry is promoting ICT in government by facilitating e-government which enhances transparency, efficiency, productivity and citizen engagement. This is geared towards ensuring that government deploys technology as a mechanism to transorm the way government operates and enhance the effectiveness of government service delivery for the benefit of the citizens. To this end, a comprehensive e-government strategy is being developed in collaboration with the Korean International Co-operation Agency (KOICA).

Capacity Building Initiative:

A number of initiatives have been implemented to build local capacity to engage in ICT sector jobs by partnering with multi-nationals to increase the supply of local and highly skilled talents in a fast growing sector as well as increasing awareness of existing/new opportunities of employment and equipping Nigerians to take advantage of them. Some of these initiatives are:

1. Huawei providing vocational ICT training to 1,000 girls;
2. Partnership Agreement with Cisco to build Cisco Academy for highest certification (CCIE: Cisco Cert
3. ified Internetworking Expert);
4. Launch and expansion of e-Lancing and Micro works project in partnership with Federal Ministry of Education (STEP B) and State Governments;

Reforms in the IT sub-sector – Achievements

1. Two (2) of these innovation centers, (IT Development Entrepreneurship Accelerators, iDEA hubs) have been set up so far, with one in Lagos and one in the Tinapa Knowledge City, Cross River State. Four (4) more are planned, with one in each of the six (6) geo-political regions
2. A Venture Capital fund solely focused on IT businesses has also been launched, with the seed fund provided by government and managed by a private sector entity fund manager.
3. Development of the mobile money initiative (MMI) to further drive the National Financial Inclusion Strategy project. The MMI is supported by telecommunications

infrastructures, and it is expected to play significant roles in driving the project in Nigeria. The mobile money transactions have been recording steady growth since the issuance of about 16 licences to participating companies. At the moment, the total value of money transactions currently stands at ₦228 million and is expected to increase to ₦151 billion by 2015, while the total volume of non-store shopping increased from ₦ 62 billion in 2011 to ₦ 77.5 billion in 2012. It is expected that the value will increase to ₦ 658 billion by 2015.

4. Government is now delivering over 50 services online, compared with 30 at the end of 2012.
5. Government unveiled its 'services.gov.ng' portal to deliver services to majority of Nigerians.
6. Standardization of MDAs Websites has increased capacities of initiatives aimed at connecting MDAs. Over 382 MDAs connected in Abuja and other parts of the country, more than 200 servers hosted by Galaxy Backbone for more than 94 MDAs. Expansion of Government Wide Messaging and Collaboration (GWMC) Technology Platform- resulted in the deployment over 86,089 email addresses on gov.ng domain names to Civil Servants. Galaxy Backbone's 1-GOV.net was awarded 2013 United Nations Public Service Award in "Promoting whole-of-Government Approaches in the Information Age" category.
7. Prior to the reform initiative, most MDAs did not have standard domain names and websites were hosted on a plethora of platforms within and outside Nigeria. In line with the reform agenda therefore, all websites of MDAs across the federation have been migrated to a standard domain name at ".gov.ng". Web standards and guidelines were also issued to ensure quality.
8. A 150-seat government contact center is being established in Abuja with over 250 Servicom staff trained in preparation of new roles. The Centre will create 1,250 jobs and contribute towards stimulating Call Centers outsourcing.
9. The Government Services Portal was launched in 2013. Keys services of pilot Federal Ministries of Communication Technology, Education, Health, Agriculture, Industry, Trade & Investment are now accessible from the portal. The target is to add over 25-30 services to the portal each year (up till 2015).
10. Open Data Programme: Government is currently working on the development of implementation plan for improving Open Data among Federal Ministries.
11. As a result of the implementation of the various reforms program in ICT, Galaxy Backbone, the Agency of government responsible for implementing the e-Government initiatives of government won the 2013 United Nations Public Serviced Award for whole of government approaches on ICT, the Agency also achieved the ISO 27001:2013 Certification by the British Standard Institute.
12. The mid-term report of the Transformation Agenda reports that as at 2013, 1,800 individuals had registered in micro initiatives equating to US$121,000 income.

Assessment of Reform Initiative

Assessed against the 10 criteria for judging the success of government reform initiatives, the reforms in communication and technology industry have recorded major achievements.

S/No.	Assessment Criteria	Result of Assessment
1	Have the reforms improved the quality and quantity of the public services delivered?	There are many more service providers now. This has had a positive impact on the provision of telecommunications
2.	Do more people now have access to services, including disadvantaged groups such as women, young persons, and people with physical challenge?	Over 120million Nigerians now have access to telecommunications services as against 400,000 Nigerians before the reforms Over 50 government services are now delivered online thereby increasing access to
3	Have the reforms reduced the cost of governance?	The reforms have brought about an appreciable reduction in the cost of governance through various initiatives
4	Have the reforms made the service more affordable for citizens?	The introduction of GSM technology and increased competition has brought about a reduction in the cost of telecommunication service. SIM Cards are now free and purchase immediate compared to getting a NITEL landline in the past
5	Have the reforms reduced corruption?	The end of the monopoly status of NITEL has led to greater transparency in the operations of this sector. The establishment of NCC as the industry regulator has solved the problem of NITEL being both regulator and operator. Delivery of government services online provide opportunity for online payment
6	Have the reforms reduced unnecessary bureaucracy and red tape?	Bureaucracy and red tape have been reduced to the barest minimum arising from IT in government initiative and
7	Is the reform initiative likely to lead to improved development outcomes?	The increase in revenue accruing to the government, employment, and capacity building for young and old citizens in ICT are already yielding the desired benefits

S/No.	Assessment Criteria	Result of Assessment
8	Are things improving, staying the same, or getting worse?	Things are really improving in th e
9	Where things are improving, will those improvements endure?	The fact that the reforms have bee n institutionalized, with a clear leg al
10	Where things are not improving, what should be done?	Not Applicable

Proposed Next Steps

1. Improved regulation of telecoms operators by NCC.
2. Work could be done to expand government's use of ICT to increase its efficiency and effectiveness both internally and externally at interfaces with the private sector and citizens. An integrated and comprehensive use of ICT in government would enable better responses to citizens' demands, improve service delivery and make administration more effective. There is need for a focal point for the adoption of ICT by government as well as the coordination and standardization of technology
3. The establishment of the proposed Converged Regulator for the ICT industry.
4. Commercialize/privatize NIPOST to give it autonomy independent of government interference. Restrained commercial mandates will go a long way in making NIPOST a commercial viable entity. Commercializing/privatizing NIPOST will allow it to pursue a strategy of aggressive growth and efficiency, diversification, and internationalization.
5. Restructuring of NIPOST into new business units taking recognition of the fact that postal operations are evolving due to developments in information systems, postal automation and retail services, logistics, and distribution technology. Modern postal services now see themselves as logistics and distribution companies, rather social service provider.
6. Need to pursue the National Addressing Policy (NAP) to ensure proper street naming and numbering of cities/towns throughout the Federation to facilitate efficient delivery of mail and other postal services.