

FUTHERING THE DIGITAL REVOLUTION IN NIGERIA
IN THE ERA OF TECHNOLOGY CONVERGENCE

BEING PAPER DELIVERED

BY

ENGR ERNEST C. A. NDUKWE, OFR, FNSE, FNIM
EXECUTIVE VICE CHAIRMAN/CEO
NIGERIAN COMMUNICATIONS COMMISSION

AT A
THE OCCASION OF THE INDUCTION INTO
THE TECHNOLOGY HALL OF FAME
OF
THE OBAFEMI AWOLOWO UNIVERSITY
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FRIDAY, NOVEMBER 11, 2005

It is indeed a great pleasure to be here today at this great Citadel of learning. It is emotional for me in many respects being an alumnus of this University myself. It is the same feeling when one returns to his father land after a long trip abroad. I wish therefore to first salute all of the great Ibe's here and wish you all well.

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INTRODUCTION

In 1937, Alec H. Reeves invented pulse-code modulation (PCM) when he worked for the International Telephone and Telegraph Co. in France. This pioneering effort facilitated the development of digital devices at the heart of the digital revolution as we know it today.

The first commercial use of PCM was in telephone transmission in 1962 after the development of integrated circuits made such use practicable. The analog voice sound wave within the telephone bandwidth of 4000 Hz was sampled at 8000 pulses per second and each pulse was encoded with a digital value; the digital values were multiplexed for transmission as a linear series of identical pulses and each pulse coded with a sampled amplitude at a particular point in time on the voice sound wave. This was enabled by many things including the invention of the transistor in 1947 and the later evolution of semiconductor microelectronics techniques. Transistors led to the development of the first modern microprocessor in the 1970s.

The digital revolution therefore transformed technology that previously was analog into a binary representation of ones and zeros. By doing this, it became possible to make multiple generation copies that were as faithful as the original.

The digital revolution progressed to usher in the information age with computer networking of today that enables resources and information sharing even on a world wide basis. The interconnection of computers and the internet have brought about greater efficiency and better information sharing and management.

In recent years, major advances in ICTs and the rapid growth of global networks such as the Internet and broadband have transformed businesses and markets and

generated significant wealth and economic growth in many countries. They have also empowered individuals and communities with new ways of doing things, as well as transformed our ways of learning and sharing knowledge. This revolution also means that constraints of time and distance have been virtually eliminated.

Clearly, ICT is driving the new global economy. People, businesses and communities with ready access to information technologies are better equipped to participate actively in the global economy.

DIGITAL REVOLUTION IN NIGERIA

In Nigeria, the ICT Industry has been boosted in the last four years with about 17.4 million telephone lines connected to date. When compared to a total subscriber level of less than half a million in July 2001, the growth has no doubt been impressive. This rapid growth can be attributed largely to the enabling and conducive environment for investment with respect to government policy and regulatory regime.

As we strive to catch up with the world, it is imperative that Nigeria is in tune with technological trends in this fast moving industry. One obvious fact is that the technological borders between telecommunications, IT and broadcasting is blurring at a quickening pace. Another fact is the trend towards the realization of a ubiquitous network society where people can access and exchange information freely, at any time, from anywhere, and from any appliance in converged ICT environment.

Historically, different forms of information, namely voice, video and data were transmitted employing diverse delivery networks. Also such modes of information were accessed through different end-user equipment. Each service had been tightly linked to a specific form of infrastructure and end-user equipment.

Owing to technological and market developments, this scenario is fast changing over time as evidenced by the:

- ✚ integration of customer terminal equipment or access devices such as the telephone, television and personal computer;
- ✚ provision of various communication services like text, data, image, voice and video over a single infrastructure;
- ✚ the use of a single transmission technology to offer various services;
- ✚ the provision of multifarious service offerings by the same service provider;
- ✚ substitution of mobile services for fixed service, resulting in a converged voice service market; and
- ✚ authorization to provide various services under a single licence.

The role of policy makers and regulators will revolve around serving the consumer interest; supporting universal access to services at affordable cost; securing effective competition and the competitiveness of the industry as a whole; promoting quality, plurality, diversity and choice in services; encouraging investment in service and infrastructure; providing economically efficient management of scarce resources.

Policy has often been slow in catching up with technological developments, and it is our intention not to allow this state of affairs to prevail. It is clear that our response to the reality of convergence which is being driven by technology is to adopt a technology neutral/ service neutral licencing policy. This will no doubt, offer solution to a number of issues plaguing regulation in the industry.

LICENCING POLICY

A licence is an official authorization to provide services or operate networks and the license document would usually contain the rights and obligations of a licensee or operator.

Licensing in telecommunications or communications sector is also used to meet the policy objectives of the government. The objectives of licensing can include any or all of the following;

- Allocation of scarce resources
- Expansion of Networks and Services
- Regulating market structure
- Generating revenue
- Consumer protection, etc

In Nigeria, the objectives of the Federal Government were clearly set out in the National Telecommunications Policy (NTP). Recognising that the availability of an efficient and reliable telecommunications system is a key ingredient for promoting rapid socio-economic development, government declared its overriding objective to “achieve the modernization and rapid expansion of the telecommunications network and services in Nigeria”.

The NTP also recognizing the rapidly changing nature of technology set out some short term and medium term objectives as follows;

Some Short-term objectives of the NTP

- ✓ To implement network development projects, which shall ensure the country meets and exceeds the ITU, recommended minimum teledensity.
- ✓ To promote widespread access to advanced communications technologies

- ✓ To promote competition to meet growing demands through the full liberalization of the telecommunications market
- ✓ To review the telecommunications laws in order to bring all operators under the Regulatory control of the NCC.
- ✓ To resolve with dispatch all licensing problems that are existing in the most transparent and equitable manner.

Some Medium-term Objectives of the NTP

- ✓ **To provide a new regulatory environment that is sufficiently flexible to take into account new technological development and the international trend towards convergence**
- ✓ To ensure that public telecommunications facilities are accessible to all communities in the country
- ✓ To establish and meet aggressive targets for the installation of new fixed and mobile lines
- ✓ To create an enabling environment, including provision of incentives that will attract investors and resources to achieve all the stated objectives.

It is clear that the NTP actually recognizes the catalyzing role of technology for improving access to telecommunications services in the country. It is also instructive that even in the year 2000 when the NTP was adopted the issue of convergence already occupied a prime place in the thinking of the ICT community.

The telecommunications industry has experienced exponential growth in the last four years with close to about 17.4 million telephone lines connected to date. Today, Nigeria is rated as one of the world's fastest growing telecommunications markets in the world.

However there is still a lot to be done to fully meet the objectives of ensuring that telecommunications facilities become pervasive all over Nigeria. One of the

strategies the NCC intends to employ to keep pace with technological trends and achieve the goals include the converged licensing option.

LICENCING IN THE ERA OF CONVERGENCE

Licensing must necessarily be a continuously evolving process. It has been argued that if left unchanged a licensing policy may become an obstacle to the development of an ICT market. Preserving onerous and complicated licensing requirements creates artificial barriers to market entry and hinder competition.

Licensing has started transiting from the era of granting individual licences for all conceivable undertakings to the issuance of class licences and general authorizations. Individual licences are now mostly limited to those seeking scarce resources or deploying networks on a significant scale.

As regulatory frameworks become better established, regulatory authorities are more willing to reduce regulatory intervention at the point of market entry. In the traditional licensing classification, a license is based on the type of service, facility or technology provided. However the exponential and continual advancement in technology has almost rendered this classification irrelevant. Additionally the phenomenon of convergence is placing increasing strain on such traditional licensing practices. Some of the licensing options that have been introduced and have become prevalent in recent times include; General authorization, class license, unified or converged license, facilities and service based licences, etc.

Historically, different networks were used to deliver voice, video and data and end users use different equipment to receive these services, however technological developments have radically changed this scenario and have also bred a multiplicity of ICT services and applications. A converged licensing is a tool

allowing competing operators and service providers to rapidly deploy new services to meet market demand without having to seek new licences.

New technologies such as VOIP, Wi-fi, Wimax etc have gradually blurred the distinction between services. In jurisdiction where such new technologies have been banned or discouraged in one way or another, Regulators in those domains have found that such regulatory action was myopic in the long run and did not stop the usage of the technology but rather encouraged the users to go underground. Regulators are now opting for a more liberal approach to these issues and are discovering that in a converging world it is dangerous to adopt an ostrich position.

UNIFIED LICENCE

A unified license can best be described as an authorisation that allows an operator to offer several services in response to its capacity and technological changes.

A unified license in essence means that an operator is authorized to provide more than one service on the same license document. These types of licences have long been recognized in Nigeria and to some operators examples include the national Carrier licenses. In fact most national monopoly operators that existed prior to the wave of sector liberalization that became the norm across the world operated under authorizations that were in effect converged licenses.

6.2 BENEFITS OF CONVERGENCE TO ICT STAKEHOLDERS

Convergence in the ICT sector has been identified as capable of yielding numerous benefits for all stakeholders of the industry – the economy/government, the regulator, the operators and the consumers - as further expatiated below:

To the Economy/Government

- ✚ It will lead to a conflict free ICT environment;
- ✚ It would enhance quicker rollout and growth of both wireless telephony and internet access; and
- ✚ More effective rural roll-out would lead ultimately to the achievement of the desired target of rural telephony.

To the Regulator

- ✚ It encourages free growth of new developments in the ICT sector;
- ✚ It simplifies the procedure of licensing in the telecom sector;
- ✚ It ensures flexibility and efficient utilization of resources, keeping in mind current rapid developments;
- ✚ It encourages efficient small operators to cover niche areas, in particular, rural, remote and underserved areas as far as the provision of ICT services is concerned;
- ✚ It enhances easy entry and level playing field for all operators.

To the Operators

- ✚ It would afford each operator the freedom to provide any service with convenient technology under a single authorization;
- ✚ It would enhance economies of scale and greater efficiency as a result of optimum sharing of infrastructure and resources;
- ✚ It would lead to cheaper cost of providing services; and
- ✚ Cheaper cost of services would increase market and profitability of operators.

To the Consumers

- ✚ Consumer expectation of one-stop service availability would be met;
- ✚ Lower operating cost resulting from economies of scale would transform into lower tariffs;
- ✚ Reduction in set-up costs would significantly lessen access cost, making ICT services more affordable;
- ✚ Increased access would create enabling environment for the growth of other businesses, create employment opportunities and raise the standards of living of people.

Unified licensing is a positive move to ensure that a favourable environment exists for robust competition in the telecommunications market and that service providers and end users take full advantage of technology and innovations, especially in the wireless and internet services. For Nigeria therefore, the unified licensing approach can tremendously facilitate easy entry, promote healthy competition and improve their ICT markets significantly. The country can leapfrog various network developments that industrialized countries have gone through in the following ways:

- ✚ Since different services can be transmitted within the same network, developing countries can use convergence platforms to extend the penetration of basic community services. For instance, cable TV can be used to offer telephony and internet services.
- ✚ In many parts of the African region, communications infrastructure absent. The unified license allows the operator more freedom in the design of future networks that can capture the demand for all other services other than telephony.

- ✚ In most developing nations, mobile telephony has substantially more widespread coverage than fixed telephony. Such mobile networks can be utilized to offer mobile internet and other advanced services especially since the penetration of PCs is low.
- ✚ In many developing countries, the broadcast frequencies are under-utilized. Establishing digital TV networks in these countries gives service providers the chance of going beyond the traditional broadcast services.

The Unified License therefore grants the operator authorization to offer multiple services on terms and conditions specified by the licence.

WANTED: A POWER REVOLUTION

The next revolution that the ICT sector is anxiously waiting is one in the power sector. With the present state of electricity supply in the country, the digital revolution in Nigeria cannot attain its full potential. All ICT equipment, infrastructure and terminals depend on electricity to be energised. Unless this vital source of energy is always available and reliable, the Nigerian people will not be able to fully enjoy the benefits that the digital revolution offers.

CONCLUSION

The Telecoms sector continues to play a very important role in the economic and social development of Nigeria and it is expected that this role will continue into expand in the future. The significant role played by investors in achieving the exponential growth attained so far must be recognised and acknowledged. Government is therefore committed to providing policy and regulatory enablement to encourage the investor and lenders.

As policy makers and regulators, government is committed to providing a level playing ground to all investors so that the nation remains attractive to investors. The need to attract international and domestic investors into the Nigerian Telecommunications industry has always been at the front-burner in government's policy design and regulatory thrust.

We must also continue to create an environment for the widespread and successful implementation of digital technologies and services. To ensure that technology is adequately harnessed to maximize the reach and depth of services, the Commission will continue to pay special attention to the key parts of our regulatory framework that facilitate investment and technological innovation.

The unified licensing is being pursued to trigger unimpeded network expansion and competition among the operators. At the same time more investments will likely flow into the industry to enable such build-ups take place even in the rural areas

By-and-large the Nigerian Telecommunications Industry remains an investment haven for prospective investors. The good news is, the Nigerian telecommunications marketplace is going to get bigger and better. The current 17.4 million subscriber base is about one-quarter of the demographics of likely telephone owners in Nigeria. Therefore, our current network capacity and service offerings must have to be quadrupled to meet the telecommunications need of our population. The projected capital investment to develop a robust telecommunications infrastructure in Nigeria is a minimum of \$3 billion annually over the next five years.

We will continue to encourage existing investors and continue to design ways to attract new investment to meet the projected growth plan. The target is to achieve an all-inclusive information society in Nigeria.

Thank you for listening.

Engr E. C. A. Ndukwe, OFR

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