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Developments in Telecommunications in Nigeria and its Impact on National Development: Experiences from Around the World

A.A. Adegbemile
Department of Electrical and Electronic Engineering, Faculty of Engineering,
University of Ado Ekiti, Ekiti State, Nigeria

Abstract: The study looks at the development in telecommunications in Nigeria and draws from the experience of other developed countries of the world. It examines the trends from the colonial period to the deregulation of telecommunication activities period. It highlights the modernization of the exchanges and the transmission networks. Statistical data's on telecommunication facilities and lines were made available, showing the current trends and increase in telecommunications facilities and lines as a result of deregulation of telecommunication activities. The impacts of these developments on national development were highlighted. The study concluded with suggestions that can enhance further developments in telecommunications in Nigeria.

Key words: Development, telecommunications, deregulation, impact, national development

INTRODUCTION

Electronic communication is the transmission, reception and processing of information with the use of electronic circuits. Information is defined as the knowledge or intelligence communicated (Tomassi, 1992).

Development may mean, the capacity of potential systems to initiate and domesticate positive changes including meeting basic needs, effecting increased participation democratization and social justice as well as becoming more autonomous from international capitalism. The primary object is man, his well being and the enhancement of his creative potential (Orji, 2003). This is a process of actualizing the people capacity to live a better and more rewarding life. It is therefore, in terms of development that the relationship between the individual and the state ought to and should be analysed.

Telecommunications facilities in Nigeria were first established by the colonial administration in 1886. Telecommunication services have been provided by the state monopoly. Between 1960-1985 Post and Telecommunications (P and T) were in charged of internal networks and Nigerian External Telecommunications Limited (NET Ltd) was in charge of External Telecommunication (NCC, 1991). In 1985, Nigerian Telecommunications Limited (NITEL) was established to replace the former monopoly. Between 1985-1992, NITEL was the main basic provider of domestic and international services. This monopoly has had serious effects on the industry in terms of gross in efficiency, high cost and lack of universal access. As at the onset of deregulation in 1992, NITEL had 500,000 lines (NCC, 1991) to a population of 100 million. In 2006, the sales of NITEL to Transcorp was effected.

Since after the liberalization and the GSM auction (2001-2003) the network grew at 1000000 lines per year compared to 10,000 lines per year (Chukwudebe and Chika, 2003) between 1960-2001.

The availability of an efficient, reliable and affordable telecommunications system is a key ingredient for promoting rapid socio-economic and political development of any nations. The world economy is Information and Communication Technology (ICT) driven and telecommunication is the transportation vehicle of information technology. It will determine the placement of nations on the league of table of developed and developing countries.

TELECOMMUNICATIONS IN NIGERIA

The development of telecommunications in Nigeria can be classified under the following traditional legal regimes.

Traditional legal regimes: Traditional legal regimes are classified into four, namely, public telecommunications systems, regulated private monopolies, regulated government monopolies and deregulation and competition.

Public telecommunications system: Telecommunication facilities were first established in Nigeria in 1886 by the

colonial administration. With a population of 40 million the country only has 18,724 phone lines for use. Between 1960-1985, the telecommunications sector n Nigeria (NCC, 1991) consisted of the department of Post and Telecommunication (P and T) in charge of internal networks and a limited liability company, the Nigerian External Telecommunication (NET), responsible for the external telecommunications services. This was similar to what was obtainable in most countries of the world where a department of the government was in charged of all posts, telephone and telegraph services; Telecommunications service traditionally have been by a vertically integrated state owned monopoly. Countries such as United Kingdom, Portugal, Belgium, Greece, Germany, Ghana etc operated (Leo, 2005) these telecommunication systems.

Regulated private monopolies: This is the type of telecommunication system where by, the telecommunications networks and operation are completely or partially privatised. One of the first countries to privatise was the United Kingdom which sold a 51% stake of British Telecom in 1984 and the remainder of the company in the early 1990s. So, also were Germany, Portugal, Belgium Greece etc. The only country that has had long history of private owned monopoly is the United States where AT and T was the exclusive provider of all forms of telecommunications service for most of this century. Although, privatisation removes telecommunications operation from government control, regulatory functions typically remain with a new (Leo, 2005) government agency created solely to oversees telecommunications.

Some of the industrialized countries that had privatized still have monopoly over local and long distance telecommunications service.

Regulated government monopoly: In Nigeria, the Posts and Telecommunication department was split into postal and telecommunication divisions in January 1985. The later was merged with NET to form Nigeria Telecommunication Limited (NITEL) a limited liability company, while the postal (NCC, 1991) division was reconstituted into Nigerian postal services. Unlike in United Kingdom where a 51% of stake of British Telecom was sold. The Nigerian Federal government was the sole regulator and the financier of NITEL until recently when NITEL was sold to Transnational Corporation of Nigeria Plc.

Modernization of NITEL: From 1986, NITEL embarked on the modernization of the telecommunications networks through the introduction of digital exchanges, optic fibre and digital satellite earth stations. The two former earth stations were refurbished NITEL services being offered were equally increased to include mobile telephone, prepaid card public payphone terminal, cellular paging and electronic mails. NITEL has an X.25 and X. 40 switching facilities in its network. NITEL remained the main basic provider for domestic and international services up till the start of deregulation. This monopoly has had serous effects on the industry in terms of gross inefficiency and lack of universal access. NITEL plc has roughly half a million lines available to over 100 million (NCC, 1991, 1999) Nigerians.

Commercialisation of NITEL: The signing of the performance contract, which formally launched NITEL into a new world of autonomy, was signed on the 22nd May, 1992 to commercialised (Akinbinu, 2001) NITEL. Under the agreement, NITEL, is to be self financing and should improve the telecommunication services. In order to achieve these goals, three measures have been taken, namely re organization, staff training and improvements in the installation of the state of art exchange and transmission equipment and facilities.

Deregulation: Deregulation can be referred to those fiscal and monetary policy measures which seek to remover regulatory controls on the activities of economic actors in order to enhance their competitiveness. Therefore, deregulation as a policy intends, that, for any deregulated sector, the market opposing forces of demand and supply should determine the prices of commodities. This was in pursuant to national initiatives and international agreement (Leo, 2005).

Deregulation, started partially in Nigerian in 1991. it was under the regulatory arms of Nigerian. Telecommunications Limited (NITEL) planning and operations division. In October 1991, approval were given to four companies, namely, Chawaleks Telecommunications Ltd, SATCOMS Ltd,. Nakaita Holdings Ltd, GPT Ltd and Murhi International Ltd. They are to operate prepaid card public payphone terminal in the five geo-political zones of Nigeria. On the 24th November 1992, the Nigerian communications commission was established. The board was inaugurated on the 10th July 1993 to take over the regulation of telecommunications activities from NITEL's planning and operation division. Thus, the commission becomes the regulatory body for telecommunications industries in Nigeria. All telecommunications service operators must now be duly licensed by the commission.

Although, deregulation does not create competition overnight, in countries that have deregulated telecommunications services, there have been clear benefits.

Regulatory body: Regulatory bodies were established in different countries. These bodies are to regulate the activity of telecommunications firms. In Nigeria, the regulatory body is the Nigeria Communications Commission (NCC) established in 1992. In United States of America, Federal Communications Commission (FCC) was established in 1934. In United Kingdom, Office of Telecommunications (OFTEL) was established in 1981. Post, telephone and telegraph department still regulate in some other countries like Germany, Belgium and others.

Stages in deregulation: Many countries that have deregulated their telecommunication have done so in stages. Privatization is often the first step taken by a country seeking to liberalise its telecommunications systems, but it is not an essential one. In Nigeria, the prepaid card payphone terminal operators took the lead. In 1991, five private operators were given approval by NITEL to commence operation. In 1992 when NCC was established, the body opened up all telecommunications activity areas to private operators to participate and compete with the former government monopoly NITEL. By contrast, in United Kingdom when privatisation started in 1984, the UK government committed itself to license a single entrant, Mercury to compete with the British Telecommunications (BT) and Vodafone to compete with Cellnet (Valleti, 2004) (partly owned by BT) for cellular services. In Australia Optus was licensed to compete against Telstra. Denmark, Finland, Sweden and Japan have licensed operators competing (Leo, 2005) against state owned telecommunications in the provision of local, national and international services. Those countries that had opted for duopoly have even opened up their markets to unlimited entrants.

In United State of America (USA) competition in international services did not begin until 1985 and in local exchange services until in 1996.

In 1985, Japan reorganised its telecommunications market to allow multiple carriers into the market. In 1991, New Zealand began the most radical deregulation program in the world eliminating all telecommunication regulations in favour of general laws of competition (Leo, 2005).

USA, Japan, New Zealand, Australia, Finland, Denmark among others have already deregulated local, long distance and international services. Indonesia, Malaysia and Chile have deregulated international service (Leo, 2005).

In general, in pursuant to a directive of the European commission 90/388/EEC, the 15 member countries of the European Union liberalized their telecommunication market in January 1st, 1998 (Leo, 2005). However, some countries in Africa are yet to privatise telecommunication activities. For example, Onatel in Burkinafaso and Sotelina in Mali are two operators to be privatised. Also in Algeria and Benin two state controlled incumbents Algeria Telecom and Benin Telecom are just being lined up for privatisation (Guardian, 2005, 2006).

Unified licensing or convergence regime in Nigeria: The unified licensing or convergence regime took off in Nigeria in March 2006 when the five years exclusivity period for Global System of Mobile Telecommunication (GSM) operators expired in February 2006 is meant to further liberalise the telecommunications markets (The Guardian, 2005, 2006). In essence, a single operator could offer one or more services including mobile telephony, fixed lines, wireless services, long distance communications, broad band, internet and international gate way services among others. Countries that have adopted unified licence regime include among others European Union. India and Singapore had adopted some version or the other of the unified licensing regime (The Guardian, 2005, 2006). The importance of the unified licensing, regime is that, the market would be opened up a bit more to go into technological convergence and service convergence. However, there will be need to address the issue of enough transmission infrastructures to carry traffic from one part to another part of the country. Also, there are likely to be mergers and acquisitions when the unified licensing regime comes into effect. With unified licensing regime, it would be all comers affairs and technology would have a new meaning whereby Global System of Mobile Telecommunication and Code Division Multiple Access (CDMA) fixed wireless operators, with proven financial muscles could manoeuvre between the two companies which offer mobile telephone services exclusively would have the opportunity to offer fixed wireless and fixed lines services, however, there will be geographical limitations on the licence issued (Guardian, 2005, 2006).

SALES OF NITEL

The sales of NITEL to Transnational Corporation of Nigeria Plc was effected in 2006 (Fig. 1).

Fig. 1: Optical card source: Landis and gyr communication of switzerland

DEREGULATED TELECOMMUNICATION SERVICES AND SERVICES AVAILABLE

At present a wide range of telecommunication services are offered in the country to include: Telephony, Telex, Cellular mobile telephony, Facsimile, Gentex, (Extension of telex to rural areas) voice cast/press receipt, Private leased circuit, Alternate/leased circuit, Maritime mobile service, INMARSAT ship shore Global Mobile Personal Communication Services (GMPCS), Data communication and High Speed transmission, Telegraphy, Public payphone (NCC, 1991) value added services, Business network services, Computer networking, Internet service, Telecommunications, Consultancy services, Paging services and Mobile radio trunks services.

SOME OF THE LICENCED OPERATORS

Licensed Public Telecommunication Operators (PTOs'): Some of the licensed public telecommunication operators are Intercellular, Multilinks, Starcomms, G.S.Telecom, Mobitel and Cellcom, Reltel, Odua Telecoms and 21st Century. In between 1997-1999 the public telephone operators injected 10,000 wireless lines into the system.

Licensed global system of mobile telecommunication operatorsL: In August 2001, Econet Wireless (Now Celtel), Mobile Telecommunications Nigeria Limited (MTN) and M-Tel were awarded licences by Nigerian Communication Commission to operate Global System of Mobile Telecommunication. In August 2002, Globacom became the fourth licensed operator and the second national operator besides NITEL. Although, Nigerian Mobile Telecommunication (Mtel) another government monopoly had been in operation since 1998 with analog GSM. 26,500 lines were connected out of 210,000 to cover Abuja, Lagos and PortHarcout. Inspite of the deregulation, NITEL is enjoying monopoly in the fixed-line communication.

STATISTICS OF TELECOMMUNICATION FACILITIES AVAILABLE

Available statistics in respect of telecommunication facilities are shown in Table 1 and 2.

Transmission networks: Transmission network consists of Terrestrial Microwave, Optical fiber Cable and Satellite Systems (Fig. 2).

Terrestrial microwave: There are 152 routes with 312 repeater stations across the country. The main trunk routes have been digitized and it operates in the 140 to 150 Mb/s configuration. The digitization of the terrestrial system is on going. Seventeen trunk routes have been digitized while ten are still outstanding. Figure 3 shows radio base station microwave link.

Optical fiber cable: A large capacity submarine optical fiber cable has been installed to link Lagos, Warri, Bonny and Port Harcourt to Enugu and Calabar through Aba.

Table 1: Telephone line network

Exchanges	Digital	Analogue	Primary centres	Secondary centres
Local	187	46	-	-
Trunk/Transit	36	9	45	-
	6			6
International	3	-	-	-

Table 2: Telex /Gentex network

Terminal exchanges	Transit exchanges	Voice/ Telegraph terminal		Installed capacity
16	3	21	14.916	6.483

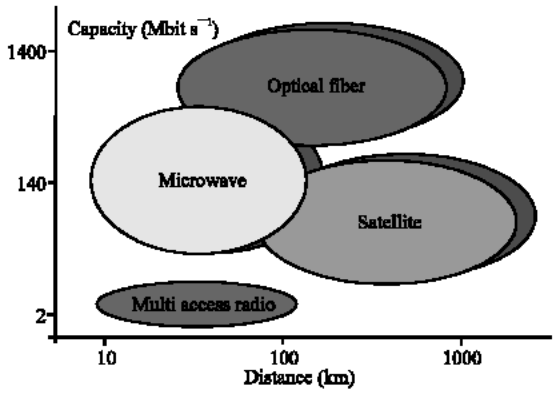

Fig. 2: Capacity against distances covered by transmission networks, Source: (Rural Communications Planning Guide by Alcatel)

This system operates in the 622 Mb/s range. Another fiber cable to link Enugu to Abuja is under construction (Akinbinu, 2001). Optical fiber ring networks have also been installed in Lagos, Enugu and Abuja.

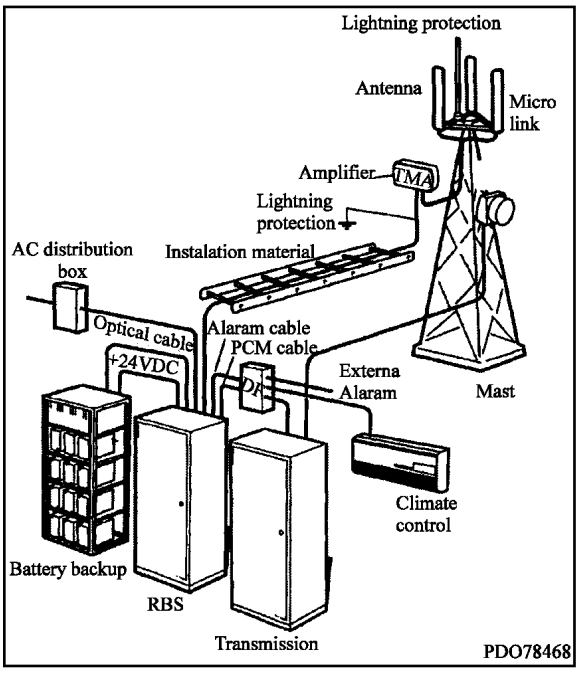

Fig. 3: Radio base station microwave link, Source: Radio site installation engineering manual by ericsion

Nigeria is also participating in the planned South Atlantic Telecommunication / West African submarine Cable (SAT 3 / WASC / SAFE) project linking Africa with Europe and Asia (Table 3 and 4).

Satellite communications: Five Satellite Earth Stations are currently in operation in Nigeria. They are located in Lagos (Victoria Island), Lanlate, Kujama, Kaduna and Enugu. The digital Satellite earth stations are Lagos, Enugu and Kaduna. They are used for international traffics. Kujama is used as a VSAT hub and Lanlate is

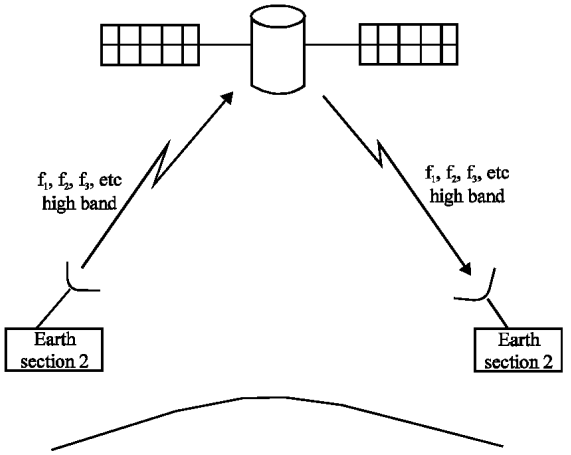

Fig. 4: Earth station satellite system single link. Source: (Advanced Electronic Communications System)

Table 3: Telephone lines in service: 1960-2005

	Telephone line in service		Teledensity	
Year	Fixed line	Mobile line	Fixed lines	Mobilelines
	,000		,000	
1960	18.724		0.5	
1986	214.108		0,275	
1987	235.398		0.294	
1988	266.784		0.325	
1989	275.149		0.327	
1991	290.000		0.3625	
1992	330.000		0.3900	
1993	370.00		0.4110	
1995	390.00		0.4201	
1996	400.000		0.430	
1998	410.00	30.000	0.4315	0.0222
1999	420.000	30.000	0.4421	0.0315
2001	440.000	400.00	0.4400	0.4200
2002	492.000	678.600	0.4920	0.536
2003	608.790	1,702.400	0.500	1.31
2004	767.233	4,102.400	0.6138	3.02
2005	1,200.000	12,800.000	0.96	10.24

Source: 1960 - 1989: NITEL, Lagos, 1991 - 2004: Telecommunications Overview, 2005: The Guardian, Wednesday 18th May 2005

Table 4: Total connected lines and Teledensity from 2005 to 2006 March

	Date								
Subscriber	Dec., 06	Jan., 06	Feb., 06	March, 06	April,06	May, 06	June, 06	July, 06	Aug.,06
Fixed	1,223253	1,242549	1,315141	1,395786	1.424084	1.481611	1.503030	1.538215	1.589,026
Mobile	18,587,000	19,888772	20,537,732	21,517,131	22.596,078	23.596,542	24.375,705	25.361,423	26.360,868
Teledensity	16.27	17.62	18.24	19.09	19.85	20.89	21.57	22.56	23.50

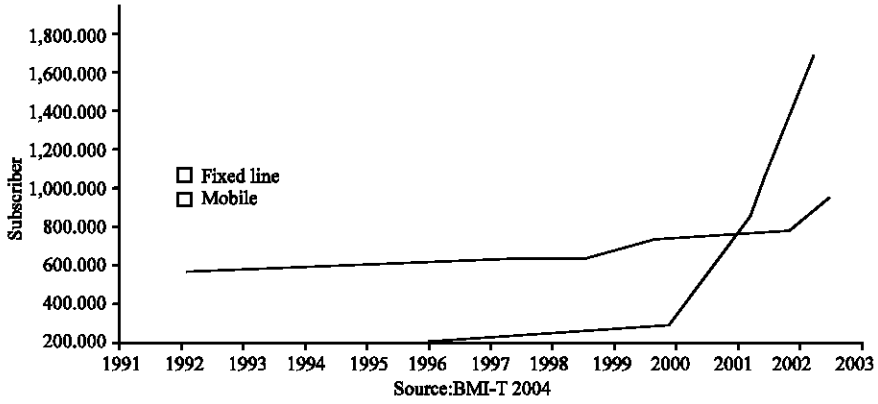

Fig. 5: Fixed and mobile link available, Source: 1991 - 2004 telecommunication over view

used for data traffic. There are 19 Domestic Satellite earth stations (DOMSAT) located in some state capitals (Fig. 4 and 5). These operate on three leased INTELSAT transponders for National Television Coverage

IMPACT OF TELECOMMUNICATIONS ON NATIONAL DEVELOPMENT

- Significant growth in national and international telecommunication traffic as a result of availability of international direct dial Service.
- Enhancement of fair and competitive pricing of telecommunication goods and services.
- Improvement on the penetration of telecommunication services for all forms of business and social economic development in Nigeria.
- Increase in the number of national carriers or operators.
- High level of generated revenue with the use of better advances in telecommunications technology.
- Increased low speed access to overseas data banks.
- Capability of the broadcasting station to transmit voice cast (radio commentary) and line television telecasts via satellite and simultaneously in the country.
- Employment opportunities so many companies have come on streams in the deregulated telecommunication services areas to provide job opportunities for the teeming unemployed Nigerians. They have changed the tempo of the Nigeria business terrain by creating countless opportunities for small and medium business in franchises, dealerships, retailer ship and value added services within the telecommunication market. Over 26 million Nigerians now have a convenient way of communication.
- Attention is being given to the manufacturing of telecommunications and computer components equipment, accessories and instruments.
- Efficient management of public resources provided for capital investment or maintenance of facilities and hence less dependence on government funding and ability to attract funding from either domestic or international capital markets.
- Institutional arrogance, abuse of monopoly of power and delivery of poor services have been reduced to the barest minimal.
- The country's international bandwidth will also receive a massive boost with the linking of Transcorp and Globacom to the SAT-3 undersea cable, VSAT operators are also expected to increase their existing capacity on transponders as customers continue to demand higher bandwidth with greater reliability.
- The experience with deregulation in the United Kingdom demonstrates the potential for competition in local telephone service. In 1992, Britain authorized cable operators to provide competitive telephoning services over their networks. Today the UK has over 20 facilities base competitors offering local service at prices that are in most cases below British telecommunication rates
- Introduction of unified licensing regime to enable operators to provide multiple services as specified on the license issued.
- Wire Nigeria Project (WIN) aimed at creating pervasive transmission backbone that is accessible to all parts of the country.
- Licensing of interconnect clearing houses which have since commenced business.

CONCLUSION

In this study, development in telecommunications, the available telecommunication facilities and services in Nigeria were reviewed. Privatization and deregulation experience of some advanced industrialised nations were cited. The impacts of the development in

telecommunications on national development were highlighted. In order to improve further development in telecommunications in Nigeria, the followings suggestions are recommended to the government and the regulatory body, the Nigeria communication commission.

The regulatory body should authorise operators to provide competitive telephoning services and improve service over their networks as done in the United Kingdom. Today the UK has over 20 facilities based competitors offering services at prices that are in most cases below British Telecom rates.

The introduction of unified licensing regime and the sales of NITEL to Transnational Corporation of Nigeria Plc in 2006, the country should witness a phenomenal growth and quality of service in telecommunications.

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