

# NIGERIA TELECOMMUNICATION IN THE DIGITAL ERA: TWENTY- FIRST CENTURY UNFOLDING EVENTS, OPPORTUNITIES AND CHALLENGES

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“To everything there is a season and a time to every purpose under the heaven..... a time to break down and a time to build up”.

- The rapidity with which convergence is being achieved in the broadcasting, communication and computer industries these early years of the twenty first century seems to confirm the period as a time to build up.
- Digitalization which evolved on the principle that any signal can be sampled, quantized, converted to binary digits (bits) and compressed by various ingenious techniques for transportation to intended destinations, today, drives the convergence experienced in the industry.

- A changing environment emerged from the early 1990s in the telecommunication industry based on the awareness that the sector had become the engine of growth for national economies.
- Advances in microelectronics, the commercial exploitation of communication satellite from the early 1970s, fibre optic systems, and ever smaller and cheaper micro computers encouraged new information and telecommunication service providers to enter into a field traditionally the domain of PTTs - the national monopoly operators.

## The modern Telecommunication Environment is characterized by the following among others:

- Sector institutional restructuring and other reforms.
- Establishment of National Policies on Telecommunication.
- The Institution of national regulatory authorities and the creation of a level playing field for actors/players in the communications sector.
- Liberalization of markets, facilitating competition.
- Transparency of activities (Regulators, operators and service providers)
- Establishment of tariff policies.

- Appropriate pricing promoting affordability and the negation of cross – subsidy
- Business consumers increased demand for customized services.
- CHOICE for consumers.
- Greater Employment opportunities with multiplying effect on other sector of the national economy.
- Improved investment opportunities.
- The clear separation of national policy, regulatory and operator functions in telecommunications.
- International Telecommunication as a factor of International trade
- Globalization and the World Trade Organization General Agreement on Trade and Services.

- Emergence of other regional and international standards bodies that address telecommunication apart from the ITU. E.g. European Telecommunication Standard Institute (ETSI) & the American, Japanese/Asian equivalents.
- Demise of the ITU accounting rate system for International telecommunication traffic Settlements that favored developing nations in the monopoly era.
- The establishment of global alliances for routing international telecommunication traffic e.g. Global one, Concert and UniSource.
- The launch and operation of satellite in constellations below geostationary orbits (LEOs and MEOs) for Global Personal Communication Systems (GMPCS).

- Alternative modes of carrying voice traffic e.g. VOIP (Voice over Internet Protocol) and other IP – packet switching systems.
- The entry of other utility infrastructure providers to the telecommunication market e.g. NEPA, NNPC and Cable Broadcasting networks, Railways etc
- The advent of Integrated Services Digital Networks (ISDN)
- The escalation of wireless services (Fixed and Mobile) including cellular systems.
- The increasing need for centralized, efficient and effective spectrum management in national administrations due to the rising complexity and rapid development of wireless technologies.
- The Internet.

# NIGERIA TELECOMMUNICATION TODAY

- The Ministry of Communications remains the Policy formulating body of the Federal Government.
- The Nigerian Communications Commission is the country's regulatory body charged with the responsibility of ensuring a level playing field for all activities in the telecommunication sector of the national economy, as well as monitoring performance in the liberalized, multi operator competitive environment.
- The Nigerian Telecommunication Ltd (NITEL) is the dominant national telecommunication carrier that other licensed operators interconnect with for intra Nigeria traffic routing.

- While the Federal Government in its wisdom has licensed Globacom as a Second National Operator to compete with NITEL, the company is still rolling out its network for full commercial activities.
- Under the powers granted by decree 75 of 1992, the Nigerian Communications Commission has licensed many operators for provision of different telecommunication services.
- Such services include the following:
  - ✓ Payphones
  - ✓ Private Network links employing Radio
  - ✓ Private Network links employing satellite
  - ✓ Public Mobile Communication (Paging)
  - ✓ Wireless Services (Fixed and Mobile). Analogue Cellular and GSM inclusive.

- ✓ Value Added Network Services E-MAIL
  - ✓ Value Added Network Services INTERNET
  - ✓ Value Added Network Services Voice Mail
  - ✓ Community Telephony Services
  - ✓ Installation of Terminal or other equipment
  - ✓ Cabling Services
  - ✓ Prepaid Calling Services
  - ✓ Public Mobile Communications (Trunked and Non-Trunked Radio)
  - ✓ Non-Commercial Private Networks
  - ✓ Telecentres and Cyber Cafes
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- A recent assessment of the situation by the NCC, quoting Engr. Ernest Ndukwe, says,

# THE INTERNATIONAL SCENARIO

- On the International scene, the historical status of the International Telecommunication Union as the dominant international organization for telecommunication standardization is gradually being challenged.
- In the current digital era, trade in telecommunication and information services has great dimensions to the extent that the World Trade Organization has published its General Agreement on Trade and Services, which treats telecommunication as a tradable commodity.
- The Organization for Economic Cooperation and Development (OECD) had carried out studies for its members since the early days of digitalization on movement towards regulatory and market structures that depart from the traditional patterns prevalent in the predominantly analogue era.

- The now world famous Global System for Mobile Communications (GSM) that is popularly referred to as the second generation mobile service (2G), evolved from the European Telecommunication Standards Institute (ETSI) specifications.
- The ITU convention's focus "to harmonize the action of nations" was fulfilled traditionally by carrying out a close correlation of the technical parameters of the global network.
- Today in the digital era, the ITU has realized the challenge is to "tackle the more complex harmonization and coordination of national policy considerations".

# INTERNATIONAL COMMUNICATION SYSTEMS AND SERVICES

- Global Information Services are carried on Global Information Highways of networked telecommunication infrastructure.
- The global network of computer networks - the Internet, and other Internet protocol related services pose challenges to the conventional telecommunication traffic for which the international network was initially designed and built.
- The trend of demand today is for multimedia services to be delivered at increasingly higher speed by bearers of ever increasing bandwidth capacity and capability.

- Wireless, perhaps because it enables communication anywhere, anytime for customers, and the rapid deployment of its network infrastructure by the operators, enjoy the pride of place in the modern era.
- The IMT 2000 is the name given to ITU's Future Public Land Mobile Telecommunication System (FPLMTS) or the Universal Mobile Telecommunication System (UMTS) now classified as third generation mobiles-the 3G.
- In the process, the GSM association has made a categorical statement that "The GSM community will deliver the UMTS dream using WCDMA (Wide Code Division Multiple Access) technology.
- The GSM community working in partnership will make the dream happen.

# INTERNATIONAL COMMUNICATION BEARERS:

- Communication satellite and undersea cables across the major oceans of the world, linking continents are the predominant telecommunication infrastructure for carrying international traffic.
- INTELSAT (The International Telecommunication Satellite Organization) and INMARSAT (The International Maritime Satellite Organization) that were established as intergovernmental organizations and run as cooperatives with Board of Governors and Signatories: have under the pressure of globalization and liberalization, become commercialized.

- Other satellite networks that came into being in the digital era are multiple satellites in constellations in Low Earth Orbits (LEOs) and Medium Earth Orbits (MEOs) configured for Global Mobile Personal Communication Systems (GMPCS) and other related services.
- Undersea cables in the form of coaxial submarine cables and more recently optic fiber cables also act as bearers for international traffic.
- Since the beginning of the digital era, there had been a phenomenal growth of intercontinental, under the sea optic fiber cables because of their obvious advantages over the conventional copper-wire coax.

- Of particular interest to us in this part of the world is the SAT3/WASC/SAFE cable, designed and constructed to link the following markets:
  - ✓ African countries with the Indian Ocean Islands
  - ✓ African Countries and the Indian Ocean Islands with Europe, North America and Asia
  - ✓ Europe with Asia.
- “Within Africa, SAT3/WASC/SAFE will promote the development of telecommunications networks (including Internet and bandwidth services), provide new communications opportunities and deliver economic market and social benefits from greater connectivity and lower communication costs”. That was the opinion expressed by Cable and Wireless Company, a member of the SAT 3 network providers’ consortium.

# CHALLENGES FOR NIGERIA

- Without quoting any statistical data, Nigeria is already acknowledged universally as the most populous country in the African Continent.
- The Obasanjo/Atiku administration within the last 4 (four) years, more than doubled the total number of lines it inherited from past administrations by exploiting wireless technology and licensing mobile services in all its ramifications.
- Despite this almost exponential growth, Nigeria needs to do more in the ECOWAS region, in Africa and in the world community at large to maintain its rightful position.

- ✓ Teledensity should increase to the level of the industrialized nations. A high unit figure should be the ultimate.
- ✓ Universal service, not only universal access, should be the country's ultimate objective. Everyone having service, not only everyone being within easy reach of the telephone.
- ✓ Appropriate pricing levels to enhance affordability. Prices set low encourage excessive demand leading to insufficient revenue for expansion. Prices set high to subsidize other activities may be prohibitive for most of the population. Cost-based pricing is ideal in a competitive environment and must be seen to be pursued.
- ✓ Need for statutory laws on Competition, Mergers and Acquisition soonest.
- ✓ Create enabling environment to attract investment capital for communications infrastructure and services development. Lack of this inhibits economic growth which in turn depreciates capital, leading to a vicious cycle.

- ✓ Nigeria, like other nations, has islands of high telecommunication capacity where profitable customer segments exist, and deserts of low telecommunication capacity, where profitable returns cannot be achieved. There is therefore need to devise investment strategies that would cover both profitable (Urban) and unprofitable (rural) areas.
- ✓ Design strategies to facilitate transfer of technology from the industrialized countries and develop local managerial, technical and commercial skill in the industry.
- ✓ Promote policy to encourage Nigerian experts in the diaspora to return and participate in the Information age development of the nation. Socio-economic growth sustainability in a globalize, market-oriented environment, requires capacity building in multidisciplinary skills.
- ✓ Recognize the overlapping markets and functions of the Nigerian Broadcasting Commission, the Nigerian Communications Commission and the Nigerian Information Technology Development Agency as well as their mutual dependencies. Work towards an appropriate time for merging the three regulatory agencies into one. This calls for a lot of time-consuming studies to get it right, hence, the need to embark on the assignment early enough.

- ✓ Industrialized nations developed their conventional universal services networks during the monopoly regime, prior to technological convergence and the information technology applications era. Nigeria missed that stage and the alternative she has in the modern era is to “leap frog” older technologies and rapidly develop with the new. The industrialized nations in essence have a firm foundation in telecommunication infrastructure, which Nigeria lacks.
- ✓ A deliberate policy must be put in place to provide the conventional system as we develop with the most modern state of the art technologies. That would ensure an alternative orthodox basic network for telecommunication traffic in the event of future unforeseen global extraneous circumstances that could be beyond the immediate control of national sovereign states.
- ✓ Internet Top Level Domain name for Nigeria (.ng) is Nigeria’s natural resources that should be fully managed in Nigeria.. Nigeria now has the infrastructure to facilitate the process: thanks to the determined effort of the current president of the Nigerian Internet Group. The Federal Government licensed the non-governmental organization for Information Technology in Nigeria as far back as 1995 to manage the top level domain assigned name in the country.

- Your involvement becomes necessary because the Internet remains largely unregulated unlike the telecommunication Industry. Frances Cairncross in her book “The Death of Distance” puts it succinctly:

“The internet has no central command. Its traffic runs mainly over lines leased from telecommunication companies, but they neither manage nor take responsibility for it .Indeed nobody owns the Internet, runs it, maintains it or acts as gatekeeper or regulator.....

The few decisions that are taken centrally – on issues such as registering the protocol or establishing principles for allocating Internet address or “domain names” are taken by a handful of mostly American engineers and scientists who run sometimes part-time, the Internet society and a few other bodies such as the Internet assignment Numbers Authority and the Internet Engineering Task Force. But they act as self appointed guardians, rather than owners and their approach is determined informal and permissive”

- What we are witnessing in Nigeria is not guided by such seemingly altruistic motive in any form.
- Since the publication of that book, an Internet Corporation for Assigned Names and Numbers had come into being in 1998. Largely run on the same basic principle by members mainly from the developed nations, but this time, purportedly open to the whole world.
- This fluid Internet management situation lends itself to varied interpretations and maneuvering that had been largely responsible for country code Top Level Domain management uncertainties in many nations. Kenya has just freed herself of the complexity and there is no earthly reasons why Nigeria should NOT, soonest.

# OPPORTUNITIES

- Many of the opportunities can be derived from the challenges, but, I would like to bring to the fore, three I considered necessary among the many.
  - ✓ PRIVATISATION
  - ✓ REGIONAL COOPERATION AND CAPACITY BUILDING
  - ✓ PROMOTING AMATEUR RADIO IN NIGERIA

# CONCLUSION

- Honourable Ministers, distinguished guests, ladies and gentlemen. Not many things I have said have not been said before and Nigeria does not lack the capacity or capability to be a leading player in the ICT world of the twenty first century.
- The digital era brought with it the two popular worlds – “Digital Divide” – which connotes different meaning to different people, depending on the pedestal one stands and the perspective of view.
- In basic terms it signifies the dichotomy between the information rich/the information poor, the industrialized/the non-industrialized, the developed/the developing nations, the economically wealthy/the economically poor countries in the world.

- It is all a matter of semantics and play on words that naturally emerge with changes in technology during the process of telecommunication evolution.
- Each country knows where it belongs without being told and it therefore behoves nation-states to choose the development approach which best suits their needs and experiences.
- While Nigeria can leapfrog or even cheetah jump to cutting edge technologies to derive optimum physical benefits from operating in the virtual world, she needs to evolve strategies against economic subservience. In a world of globalization, liberalization and competition, where points of presence can be established remotely and market accessed almost without restrictions, many seemingly unlegalised activities can neither be monitored nor controlled.

- At best we should keep abreast with technology but simultaneously go back to basics and identify the missing links with the intent of addressing them if we are not to remain a perpetual market for the world at large.
  - ✓ Attractive Investment Climate
  - ✓ Local Manufacture of ICT equipment
  - ✓ Capacity Building
- All three, in a stable body polity and secured environment are essential elements of focus in designing policies and strategies to move Nigeria forward in the 21st century.

- The season for review and implementation of past proceedings and recommendations of the digital era World Telecommunications Day Lectures, Seminars and Workshops could begin today in Nigeria in fashioning the best for our nation.
- Our prayer is that Nigeria optimally benefits from the social, economic and political opportunities offered in and afforded by, this era of Digitalization.
- Indeed “to everything there is a season”.

**Thank you and God Bless.**

**Ref:**

**ITU Publications**

**NCC Lecture papers**

**“Death of Distance” by Frances Cairncross**