

**THE IMPERATIVE OF ACCELERATING THE DEPLOYMENT OF
INFORMATION AND COMMUNICATIONS TECHNOLOGIES
(ICTs) FOR SOCIAL AND ECONOMIC DEVELOPMENT**

A PAPER PRESENTED

BY

ENGR ERNEST C. A. NDUKWE
EXECUTIVE VICE-CHAIRMAN

OF

NIGERIAN COMMUNICATIONS COMMISSION

AT THE

11TH HERBERT MACAULAY MEMORIAL LECTURE

THURSDAY, JULY 22, 2004

I wish first of all to give thanks to the Almighty God for the privilege of being able to share my thoughts with this very distinguished and eminent audience. I also wish to extend my gratitude to the Vice Chancellor, Dean and members of the faculty of Engineering for the recognition and honour given to me in inviting me to deliver this year's Herbert Macaulay Memorial Lecture.

University of Nigeria, Nsukka has always held very high ratings in the Nigerian Academic landscape having produced very eminent graduates, some of whom have occupied and still occupy prominent positions in Government, academia and the private sector.

This is also like home coming for me, having spent time on this campus in my younger days as a holiday maker at the home of my Uncle and Aunt, Professor and Professor (Mrs.) Maduewesi.

Introduction

Nigeria like nearly all countries in the African Continent is currently rated as a poor country. Though blessed with abundant natural resources and a large active population, the nation is still ranked as one of the poorest countries in the world. Many of our citizens still live under conditions that can even be described as extreme poverty.

The Nigerian experience has been that of a great paradox. I was privileged to visit the state of Singapore recently and was amazed at the level of development achieved in the small island nation of just over 4 million people whose leader visited Nigeria after their independence in 1965 to seek advice from our leaders on the way forward. 40 years hence, Singapore is a first world country with clean

cities, constant electric power supply, international financial hub, second largest refining facility in the world, best automated port facility, industrialized and largely corruption free.

It is true to say that in 1965 Singapore was much like Nigeria. It is significant to note that Singapore does not have any material natural resources, nor arable land. They import drinking water from Malaysia and nearly everything that the citizens eat and even sand for their beaches. There are a few lessons to be learnt from the Singaporean story. A determined leadership at the right time in a nation's history can make the necessary changes that can transform any African country from a state of underdevelopment to that of a developed and thriving economy. Changes that can enable the nation escape the traps of poverty. The Nigerian Government is today in search of that transformation and I am convinced that we have what it takes to be a strong economic power in the African continent and infact the world.

The question is how we get there. The present government and perhaps other governments before, have identified the various important areas of the economy that deserve focus and attention such as:

- Attracting foreign investment
- Improving agricultural produce
- Improving transportation and road infrastructure
- Improving education and facilitating mass literacy
- Improving Electric power supply to ensure steady and clean power supply for industrial, business and domestic use

- Fighting corruption, making public officers more accountable and keeping government clean
- Cleaning up our cities and promoting a healthy environment
- Improving security and the rule of law through improving the police force and the Judiciary
- Improving efficiency in public service institutions and reducing waste
- Improving Telecommunications and Information Technology infrastructure
- Improving education and knowledge creation
- Promoting a private-sector-led economy while also ensuring that basic social services are available to all citizens.

All these are very important in the quest to build a just and equitable society that empowers its citizens to create enough wealth for the common good.

However one very important cord that runs across all these sectors in the networked knowledge economy of today is the Information and Communications Technologies (ICT's.) Until not long ago, ICT was a relatively obscure sector. Today, we live in the digital age and hardly any aspect of human endeavour can be effectively carried out without ICT.

Today's enterprises demand Information and Communications Technology to increase their productivity. Consumers demand the

convenience of efficient communications services anywhere, any place and any time.

Quoting from the first chapter of the National Telecom Policy document:

“The availability of an efficient, reliable and affordable Telecommunications system is a key ingredient for promoting rapid socio-economic and political development of any Nation. Such a system must be universally accessible and cost effective.

Telecommunications is a vital engine of any economy; it is an essential infrastructure that promotes the development of other sectors such as agriculture, education, industry, health, banking, defence, transportation and tourism. It is indispensable in times of National disasters. It considerably reduces the risk and rigours of travel and rural-urban migration.” ICT therefore cuts across all aspects of human endeavour and enables us to share knowledge and experiences across ethnic, national and international divides.

At the United Nations Millennium Summit of 2000, eight millennium Development Goals (MDGs) were adopted by the nations of the world as bench marks to guide developmental efforts.

It was also recognized that these targets can only be reached with improved economic growth across the world. Economic growth in turn comes with the effective application of knowledge.

There have therefore been concerns over the ever growing gap between the advanced countries who not only have superior ICT infrastructure, generate and effectively apply most of the world's knowledge resources on one hand; and the developing countries which are invariably lacking in the capacity to generate and even effectively apply available knowledge resources on the other hand. ICT's have an over-arching role in development and are the main tools by which knowledge can be applied, transferred and adopted. ICT's, when effectively applied lead to new and efficient methods of production.

ICT's Vs Other Developmental Needs

In the 1990's there were debates over choosing between ICT's and other developmental needs with respect to developing countries. Opinions had it that investments in ICT were tantamount to diverting resources from more pressing developmental needs. There is no doubt that availability of ICT's, cannot eliminate the need for good health care system, good educational facilities, clean and portable water, sufficient food, good roads and transportation systems etc. However ICT's have a critical role to play even in improving the performance of these sectors. Nevertheless, with the wave of market liberalization and deregulation across the world today, Government's direct funding of ICT infrastructure has been substantially reduced if not eliminated. The role of government should therefore be that of sector regulation and of creating the right environment that will encourage new private sector investments and facilitate universal service. Government can then devote its resources to providing other social infrastructures with ICT's playing a complimentary and

facilitative role. ICT's role as an enabling tool for development and in providing new and more efficient methods of production is not in doubt.

Impact of ICT – Social and Economic

The most dramatic impacts of telecommunications have undoubtedly been economic and it is now accepted that the productivity and competitiveness of all economic sectors and their capacity to innovate in terms of products, services and processes, increasingly depends on communications networks.

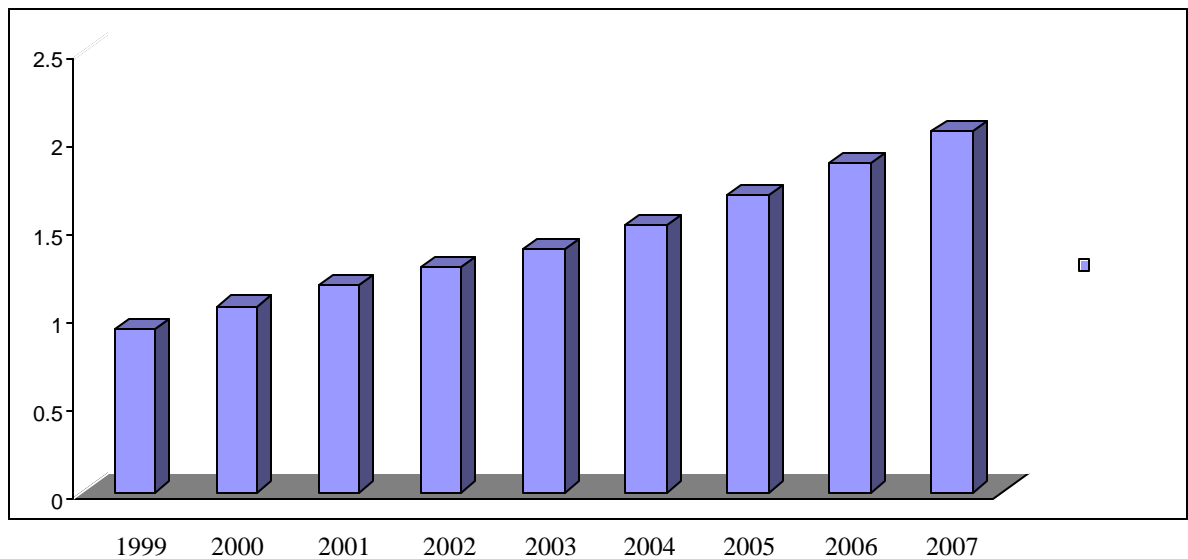


Figure 1: INTERNATIONAL TELECOMMUNICATIONS SPENDING (\$ Trillions)

(Source: - Telecommunications Industry Association: Industry Playbook)

Available data from the International Telecommunications Union has shown that flows of international telephone traffic closely mirror the patterns of international trade. Indeed, variations in telephone traffic can be used as a leading indicator of national economic performance.

In agriculture, easier and faster access to up-to-date market and price information assists farmers and rural-based traders in their businesses. Telecommunications can also deliver better access to information on improved seeds, availability of fertilizers, weather forecasting, pest control and other agricultural-related services.

Furthermore, telecommunications plays an important role in politics and governance, by enhancing a government's ability to provide security for its citizens, protect its borders and more efficiently handle civil emergencies and national disasters. In turn, the citizens gain easier access to government and greater awareness of government programmes and activities

ICT's are also making it possible for developing countries to participate in the world economy in ways that simply were not possible in the past, by enabling them to take advantage of their intellectual and cultural resources – the raw materials of the information age.

Accelerating ICT infrastructure Build out - Bridging the Digital Divide

It is imperative that internationally tested solutions are applied to ensure that Africa is urgently integrated into the emerging global Information Society as an active player. There is therefore need for market reforms as a pre-requisite for attracting urgently needed investment into the sector. Gone are the days when governments closed their doors to foreign investment and expect progress in economic development. Even the communist countries of

yesteryears have opened up their markets for foreign investment. The old myth of telecommunications being a strategic sector that must be controlled by government for “Security reasons” is a thing of the past. These facts have therefore guided the policy thrust of the Nigerian government for a liberalized sector.

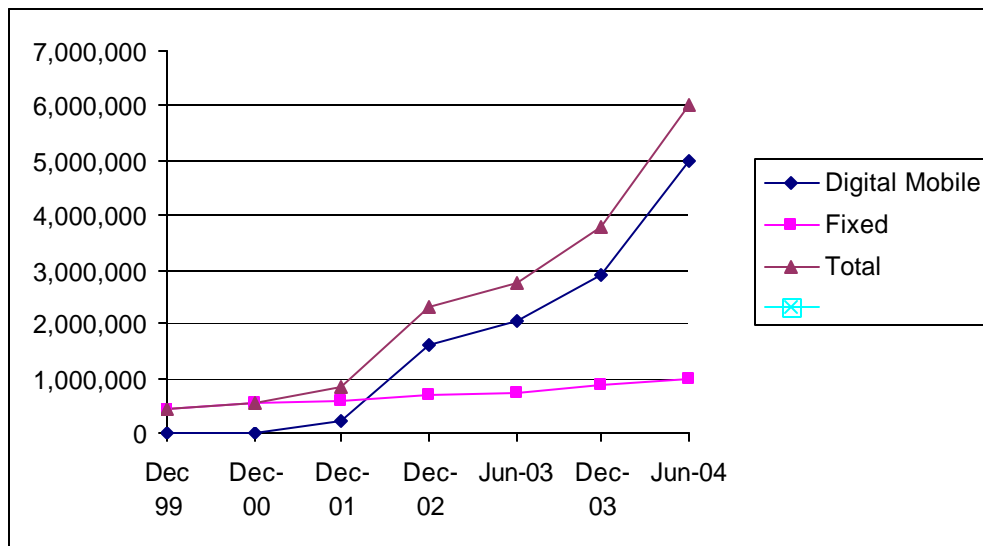
Nigeria like other countries of the world has therefore embraced the universally accepted change agents of market liberalisation, privatisation of state run enterprises and promotion of competition. Telecommunications operating entities irrespective of who owns them perform best when run as a profit-driven business. Consequently, State operating entities are universally being distanced from government by re-organising them into either mixed state/private companies or fully private companies.

Once the right policy and regulatory environment is created, private capital is immediately attracted to the sector. New innovative products are introduced and the sector becomes more vibrant and active. Waiting lists for telecoms service are reduced or eliminated.

Since year 2000, NCC has licensed Digital mobile operators, Fixed wireless Access Operators, two Long Distance Operators, Internet Service Providers and a Second National Carrier, thus ensuring competition in all segments of the market.

This activity has increased and promoted rapid deployment of ICT services, resulting in exponential growth in the number of telephone lines. It is instructive to note that while connected lines only grew at

an average of 10,000 lines per annum in the four decades between independence in 1960 and end of 2000, in the last three years, an average growth rate of 2 million lines per annum was attained. As of June 2004, Nigeria had attained over 6 million lines, (5 million of which are digital mobile lines). Total teledensity, which was just 0.4 lines per 100 inhabitants in 1999 stood at 5.0 per 100 inhabitants by June, 2004.



Source: NCC

Bridging the Knowledge Divide

Whereas the digital divide conventionally refers to inequality of access to ICT services such as telephone, computer and internet, the knowledge divide, refers to the inequality in the capability and skills to generate and use knowledge.

As we try to preach the benefits of information revolution to Nigerians we need trained manpower to design and implement networks that are robust and cost effective. Networks that are designed, taking

Africa's specific needs and environmental conditions into consideration.

Another area of concern is the fact that majority of developing countries, including Nigeria, are dependent on R&D undertaken in industrialised countries. In several aspects of ICT's, satisfactory solutions to problems particular to developing countries have not yet been found. We need to develop local capacities to be able to handle this since R&D by major manufacturers in industrialised countries is geared to conditions and requirements of those countries.

In the African context, the intervention of Nigeria as a nation is imperative with the population and the economic potential of the nation; Nigeria should be the hub for the development of human capital for the West African Sub Region. A hub for manufacturing industries, that will tailor equipment and design of networks to the needs of African countries.

Nigeria must therefore ensure a well organized, human resources development approach in this vital sector such that professional education and training in our universities and other institutions must be well adapted to a well-articulated set of objectives for the nation and by extension the sub region.

The World Bank Institute in a recent study determined that there exists a wider knowledge gap between the developed and the developing countries in terms of knowledge and skill, institutional

capabilities and organizational structures required to benefit from the vast quantities of information available in the world today.

The study determined that without concerted efforts to narrow the knowledge gap, developing countries are likely to lag further behind in future. While progress has been made in the past decade the narrowing of the gap in terms of ICT penetration (digital divide) indications are such that developing and poor countries may in fact be lagging further behind, in such areas as education and knowledge creation. Nigeria must therefore, expand and modernize educational facilities in order to facilitate the creation of an all inclusive knowledge base.

Investment in education is critical to narrowing the knowledge gap and is fundamental to the development of the capacity for integrating knowledge into social and economic activities and for participating in today's digital economy.

Conclusion

In Nigeria today, the penetration of fixed and mobile lines access is low which invariably means that significant number of Nigerians do not have access to voice telephony service. Though the number of mobile lines has grown significantly in the past three years, it can still be said that many Nigerians do not have access to basic voice telephone service let alone other essential services such as the internet and broad band.

It is important that the Nigerian nation continues to accord priority to the development of necessary infrastructures and access to ICT's for its citizens. Sustained policies aimed at encouraging widespread availability of these essential infrastructures must be placed at the front burner just as is the case with the more developed nations of the world, which have continued to expand and upgrade their ICT resources.

In the UK for example, where penetration of computers is already quite high, the provision of access to broad band connection was important enough to be embodied in their government policy. The British Telecom (BT) recently announced that all households in the UK would be in reach of broadband connection by 2005.

Also according to a new report from the Economist Intelligence unit, Sweden emerged as the world leader in e-learning.

Korea's government has consistently promoted the use of Information and Communications Technology since the mid 1980's. Today Korea is one of the worlds most advanced users of information technology and boast of highest broadband penetration density in the world.

China has been growing their ICT networks at an astonishing rate since the past decade and is currently the world's largest telecommunications market, both for fixed and wireless networks.

US spending on Telecommunications equipment has continued to grow and is estimated to reach \$1 trillion by 2007, up from \$720 billion in 2003.

Nigeria must therefore, intensify its march towards effectively participating in what is commonly referred to as the information society. Nigeria like most African countries that do not have the burden of pervasive legacy networks can leap frog to new generation Networks and technologies.

For example BT after 18 months of planning is set to become the first national telecoms company to convert its phone network to run entirely on internet protocol. The conversion is estimated to cost about £10 billion and is planned to take 5 years to complete. Instead of using traditional telephone exchanges to switch individual voice calls on a point to point basis, the new network, to be called 21st Century Network (21CN), will route calls as packets of internet data. BT hopes that the flexibility of the 21 CN network will provide a cheaper, more reliable phone service along with faster broadband access etc.

Nigeria has the opportunity to roll out the most modern of ICT infrastructures in the world by proper planning and forward looking policies by Government. I believe we have made some right moves in the recent past with opening up our ICT market to competition in nearly all sectors. This has paid off with network growth of over 1000% in three years. However with a population of about 120m, the

present subscriber level of just 6 million lines is not nearly enough to keep us in any comfort zone.

If ICT's continue to enjoy priority status in even the developed countries, how much more should countries such as ours continue to initiate policies that will accelerate the acquisition and pervasive use of this vital infrastructure.

The recent launch of digital mobile services across the country and speed at which they are expanding, has demonstrated the hunger that exists in Nigeria for telephone services. Access to telecommunications and information technology holds the key to the Nation's ability to respond to the demands of its position in the new world order.

Accelerating the deployment of a ubiquitous Information and Communications Technology infrastructure across Nigeria is one sure way of catalyzing social and economic development.

ERNEST C.A. NDKWE, OFR, FNSE, FNIM

References

- From Third World to First, Memoirs of Lee Kuan Yew
- Connect World Magazine, Asia Pacific Issue 2004
- Barry Fox, New Scientist Magazine, June 2004
- ICT & Development Publication of the GICT Department of the World Bank
- Telecommunications Industry Association: Industry Playbook