

TELECOMMUNICATIONS IN NATIONAL DEVELOPMENT

By
Engineer Ernest C.A. Ndukwe
Executive Vice Chairman
Nigerian Communications Commission

16th Sept., 2003

Introduction:

- Telecommunications is today one of the world's most dynamic economic sectors.
- Every profession and everybody are now actively involved in telecommunications.

Introduction Cont'd

- Telecommunications is an infrastructure for economic and social development.
- Information is regarded today as a fundamental factor of production alongside capital and labour.

Introduction Cont'd

- Telecommunications is a strategic investment for competitive advantage.
- Countries and firms that lack access to modern telecommunications systems cannot effectively participate in the global economy.

The importance of CTs in National Development:

Underlying Paradigms

- *As the use of CTs spreads in advanced countries, enterprises in developing nations would be forced to incorporate CTs in their business models*
 - It is estimated that the number of users on-line worldwide will rise from 179million on line to 250 million in 2000 and to 350 million by 2005.
 - Estimates by Datamonitor indicates that almost 2.2million businesses are using the internet; that number will rise to 5.4 million in the year 2004 implying that two-thirds of European businesses will have access. The prediction for e-commerce suggests a dramatic growth from a low base.

The importance of CTs in National Development:

Underlying Paradigms

- It is estimated that global e-commerce in 1999 was \$1billion, increasing to \$350-\$500 billion in 2002 and \$1trillion by 2003-2005.
- Most of this growth is expected will be mainly in the area of financial services and professional services such as accounting and consulting.
- The global market for e-commerce software was estimated to worth \$2billion in 2002.
- This, by implication, means that enterprises in developing nations cannot but be aware of the trends in CT employed by business counterparts in more advanced societies and reposition to align their business strategies and process accordingly in order to remain competitive.

The importance of CTs in National Development:

Underlying Paradigms

- *The usefulness of telecom in National development lies not so much in its size per se, (which, though, is huge) but in the changes that ICT is able to bring to bear on the functioning of enterprises in which they have been deployed.*
 - On a global scale, the International Telecommunications Union (ITU) confirmed, in 1999, that the world telecommunications and information technology (ICT) industry was worth US\$ one trillion in market capitalisation and behind in size only to healthcare and banking.

The importance of CTs in National Development:

Underlying Paradigms

- In quantitative terms, the World Bank estimates that every dollar invested in telecommunications yields about 6 USD in multiplier effect for the entire economy of the country.

Overview of Telecoms in Nigeria

- The development of telecom in Nigeria started in 1886 with the laying of the 1st telegraphic submarine cable by the British firm, Cable & Wireless Ltd.
- In 1962, the Nigerian government joined the British firm as a senior partner under the name Nigerian External Telecommunications Ltd. (NET).
- By 1984/85 Nigeria separated postal and telecom functions of the P & T Department. Consequently, NITEL was created and telecom services became commercialized. The monopoly network of NITEL that pertained hitherto could not meet up with public expectations and demands.

Overview of Telecoms in Nigeria

- Government therefore decided to partially liberalize Nigerian telecommunications sector via the promulgation of the NCC Decree of 1992.
- However, despite the huge potentials offered by the Nigerian telecom market progress was slow
 - private investment was mere USD50m as at 1999
 - an average of just 1 telephone line to 250 inhabitants as at that year.
 - About half of the functional connected lines held by government organizations and corporate bodies
 - An estimated 4 million lines in suppressed demand.
 - There only two countries which teledensity levels were worse than that of Nigeria – Afghanistan and Mongolia¹⁰

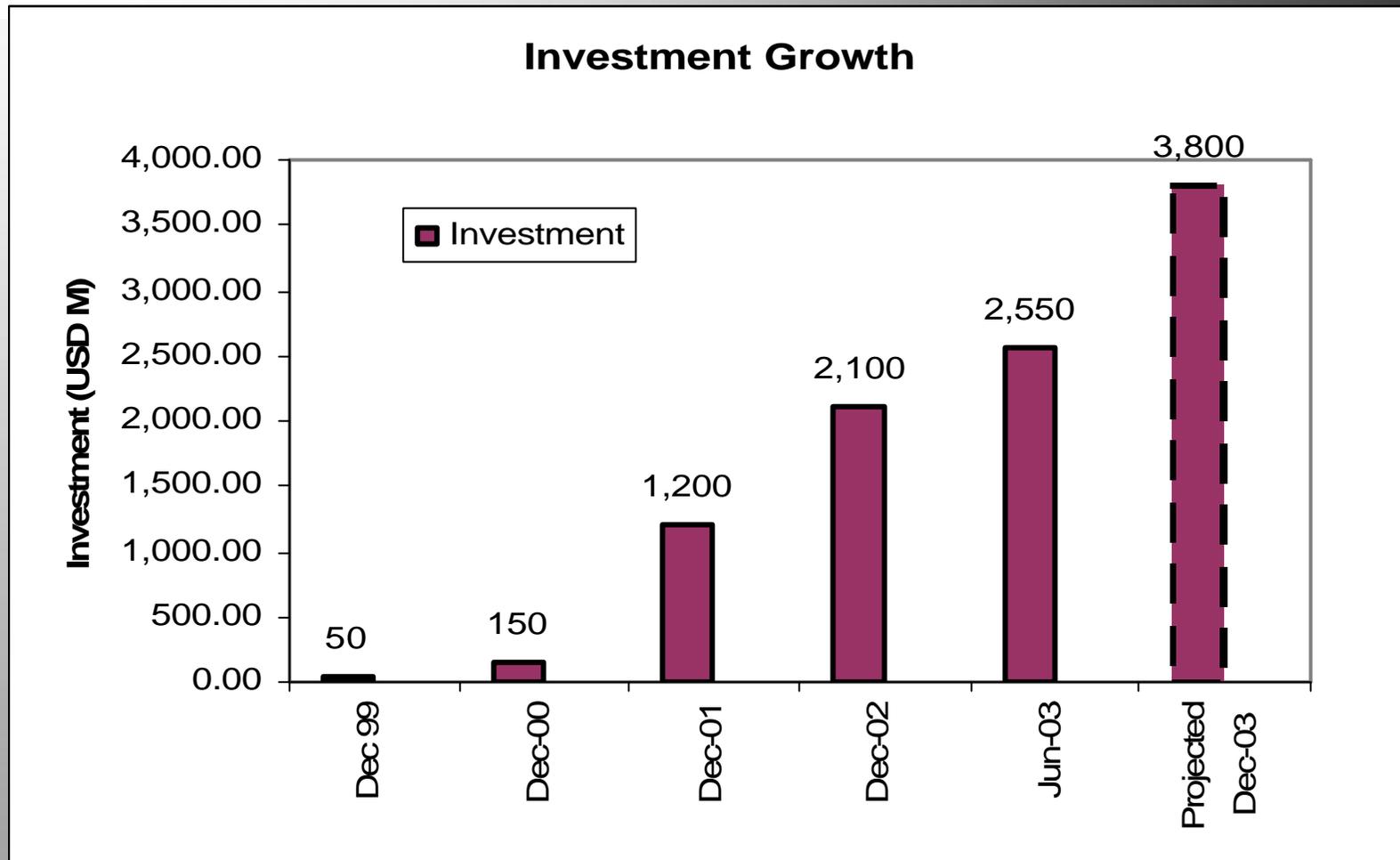
Overview of Telecoms in Nigeria

- Political uncertainties and perceived policy inconsistencies, among other shortcomings prevalent at the time had combined to make for relatively unattractive investment climate in Nigeria.
- Enthronement of democracy and responsive governance in 1999
- A new telecom policy released in year 2000 the hallmark of which was the blueprint for full liberalization of the telecom industry.
- Substantial gains were the result of full industry liberalisation (See Table)

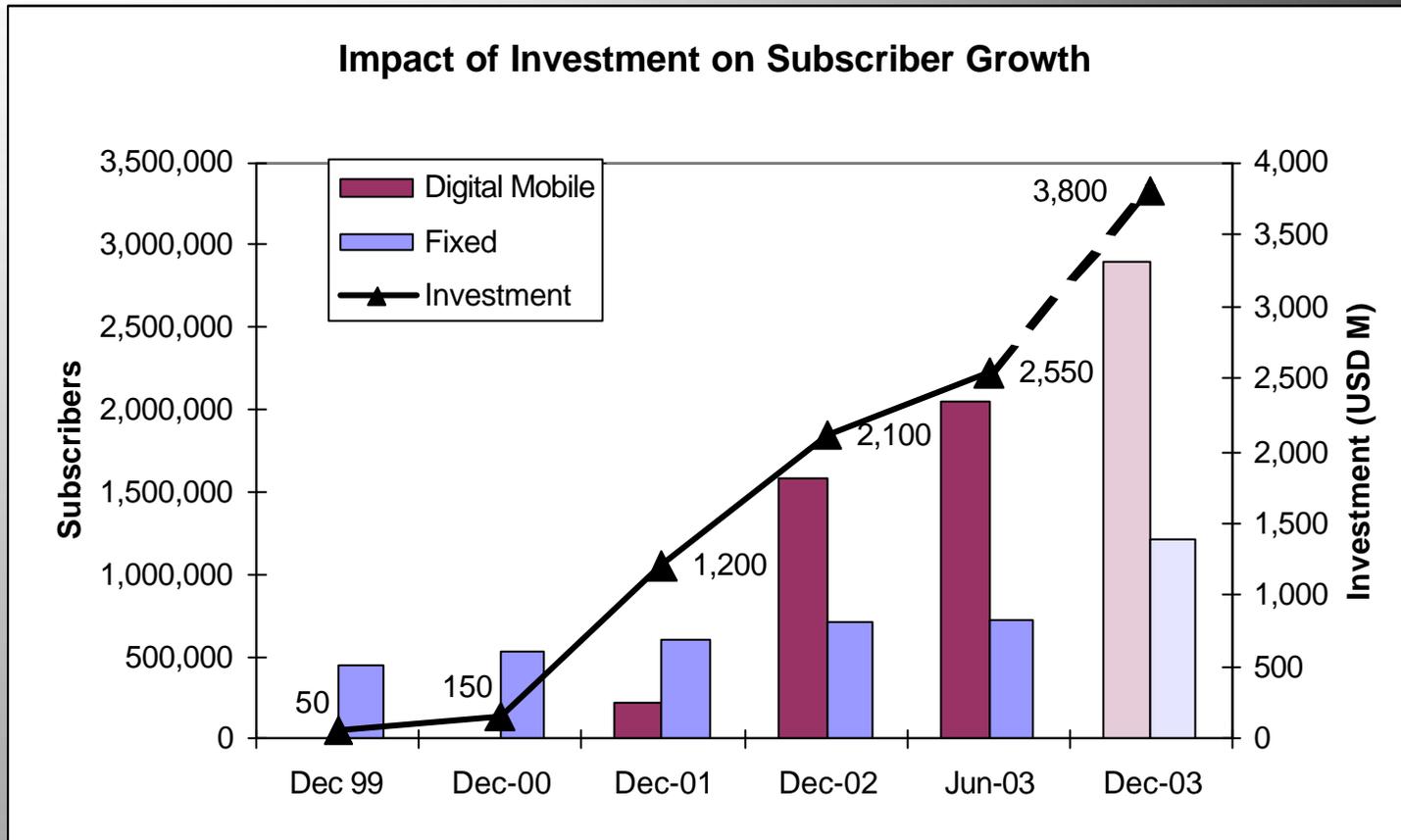
Overview of Telecoms in Nigeria

	Dec-00	Dec-02	Jun-03	Projection to Dec., 2003
Number of Connected Fixed Lines	450,000	702,000	724,790	1,200,000
Number of Connected Digital Mobile Lines	None	1.6m	2.05m	2.9m
Number of National Carriers	1	2	2	2
Number of Operating ISPs	18	30	30	35
Number of Active Licensed Fixed Line Operators	9	16	16	30
Number of Licensed Mobile Operators	1	4	4	4
Number of Km of Microwave Links	16,000 km (est.)	31,200 km (est.)	Not Available	37,000 km
Private Investment	150m USD	2,100m USD	2,550m USD (est.)	3,800m USD (est.)

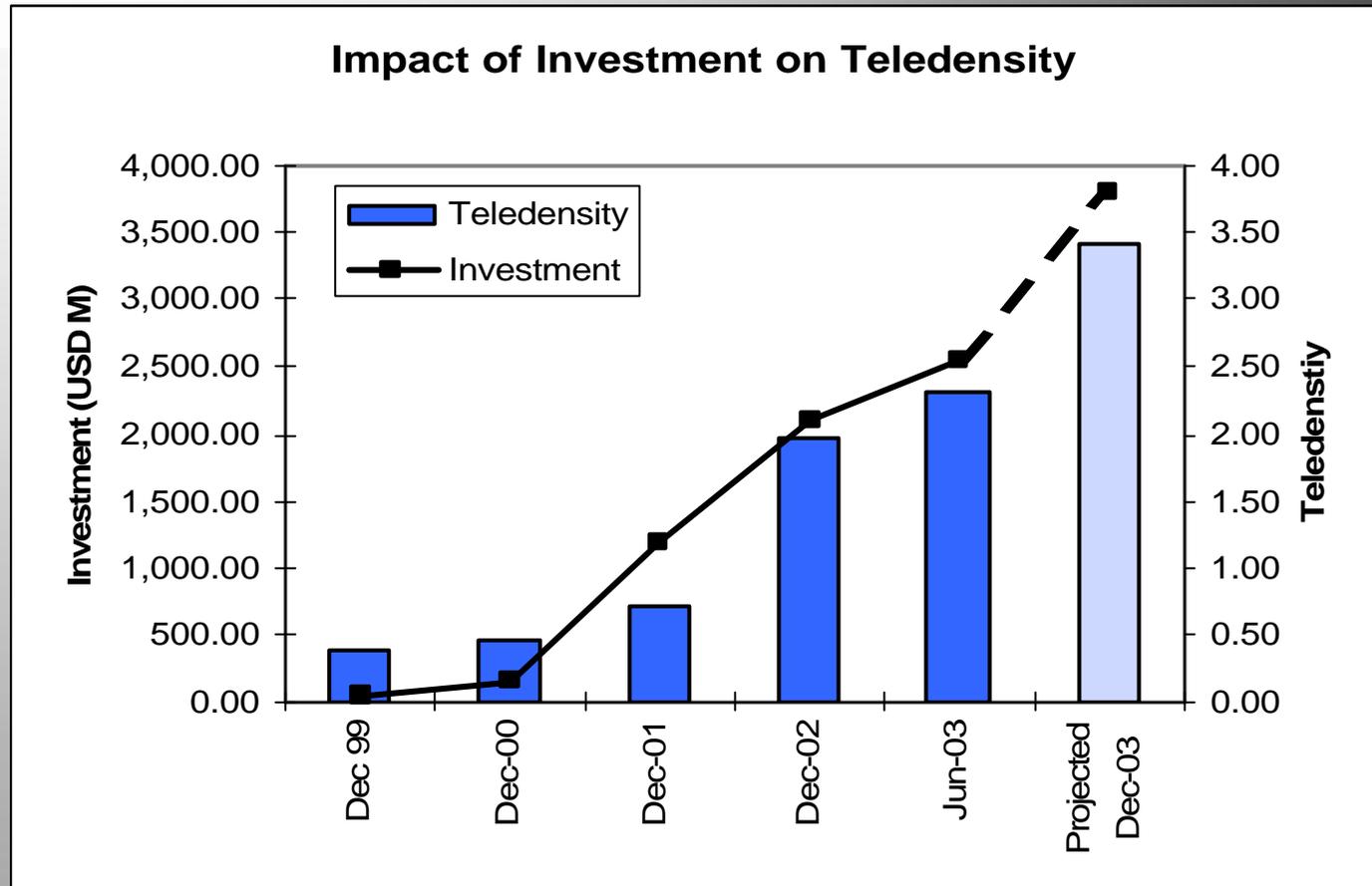
Overview of Telecoms in Nigeria



Overview of Telecoms in Nigeria



Overview of Telecoms in Nigeria



Overview of Telecoms in Nigeria

- Today, private investment in the telecom sector ranks second only to the oil industry in this country.
 - worth USD2.110 billion as at December 2002
 - estimated to have increased to USD2.550 billion as at June 2003.
 - This growth represents a phenomenal 5000% increase in investment in less than 4 years.
- The GSM operators alone have generated 3500 direct employment and estimated 10,000 to 200,000 in indirect employment.

Overview of Telecoms in Nigeria

- Tariff has equally shown remarkable reductions in acquisition costs:
 - The connection cost of fixed telephone line decreased by about 100% from an average of N100,000 in 1999 to N51,000 in 2002, dropping by a further 41% to N30,000 in the six months ending June 2003.
- Waiting time for telephone has reduced from years, to minutes in the case of mobile phones.

Overview of Telecoms in Nigeria

- the ownership of mobile phones has been ‘democratised’ as could be seen in the profile of those wielding GSM phones:
 - Artisans, students, taxi drivers etc. This was not the case before when about half of the limited telephone lines were mainly held by government and corporate organizations.
- Infact, Nigeria is progressively being repositioned to partake of some of the benefits of CT applications

Evolving CT Applications and Uses

- Some of the CT applications commonly used in our everyday lives include:
 - Telephone Networks, Mobile and Fixed Communications, email, internet, teleconferencing, videotex, videos, video brochures, smartcards, electronic funds transfer systems, computerised reservation systems, management information systems, airline electronic information systems, satellite printers, etc.
 - Among these, the growth in use of mobile phone has dominated in developing countries
 - the internet is gaining widespread popularity.

Evolving CT Applications and Uses: Economic

- Manufacturing
 - Telecom facilitates communications on a real time basis, regardless of distance between suppliers and manufacturers.
 - enhances product development
 - reduce transaction costs
 - reduce time to market e.t.c.
 - The overall effect is to confer competitive advantages on the manufacturers.

Evolving CT Applications and Uses: Economic

- Manufacturing

- The established manufacturing concerns in Nigeria are increasingly exploiting the internet especially in dealings with the oversea business counterparts.
- the level of interaction with local business has been limited by factors including, not least of all, the insufficient level of awareness of the power of internet for local business transactions.

Evolving CT Applications and Uses: Economic

- eCommerce

- Some of the most commonly traded products and services involving ecommerce include:

- Computer software, entertainment products (motion pictures, videos, games, sound recording), information services (databases, online newspapers), technical information, product licenses and professional services (businesses and technical consulting, accounting, architectural design, legal advice, travel services e.t.c.).

Evolving CT Applications and Uses: Economic

● eCommerce

- World trade involving these goods has been growing rapidly over the past decade, and as at 1996 accounted for well over \$40 billion worth of US exports alone.
- In Nigeria, the Financial Services industry has utilised ecommerce potentials more than any other industry -
 - the Smart card technology, the Flash Me Cash by the GSM operators, Online Baking etc.
- Concerns over capital, skill and security requirements impose limitations on the diffusion of ecommerce especially in developing countries.
- There are equally arguments as to the usefulness of ecommerce in trading of physical goods.

Evolving CT Applications and Uses: Economic

● Travel and Tourism

- An information intensive sector in which a wide range of information and communications technologies most commonly, the internet and Computerised reservation systems (CRS) have found great relevance.
- The effect of CRS on cost savings and productivity improvements is demonstrated by the results of a research study in 1987 in the US.
 - CRSs led to a reduction in the cost to an airline of making a reservation from approximately USD7.5 to USD0.50.
 - Another survey of travel agents reported that installing a CRS raised their productivity level by 42%.
 - In consequence, the direct social cost of airline reservation and ticketing were estimated to have fallen by as much as 80%. 24

Evolving CT Applications and Uses: Economic

- **Travel and Tourism**

- ICTs are acknowledged to improve quality of service and personal touch

Evolving CT Applications and Uses: Improving Quality of Life

- **Basic Communications**

- Basic telecom applications like the telephone - fixed and mobile - and even fax enable people to communicate with each other, on real time basis, saving time and money, among other conveniences.
- Basic telephony is a fundamental application and is dominant in developing countries where advanced telecom services are grossly insufficient and underdeveloped.

Evolving CT Applications and Uses: Improving Quality of Life

- Health Care

- A useful application of Telecom in healthcare is in the area of Telemedicine.
- Telemedicine is “the exchange of medical information interactively or on a store-and-forward basis between separate locations using telecom links”.
 - X-rays, charts, photographs, and records etc can all be sent via telecom networks in useable forms to specialist consultants in far away locations to make diagnosis and prescribe treatment.

Evolving CT Applications and Uses: Improving Quality of Life

- Health Care

- The development of teleconferencing facilities and multimedia capabilities of telecommunications, which has made it possible to combine audio and video facilities, has been of immense benefit especially in healthcare delivery.
- It has become a common phenomenon for Surgeons in one part of the country, or in any part of the world for that matter, to consult with other specialist while performing operations, while such operations can also be monitored by other Surgeons in any part of the world.

Evolving CT Applications and Uses: Improving Quality of Life

- Health Care

- Telemedicine enhances universal access to healthcare facilities especially in countries where medical facilities are few outside of major cities and Doctors are reluctant to make visit far from hospitals.

Evolving CT Applications and Uses: Improving Quality of Life

- Education

- Perhaps one of the most important applications of telecom in the education sector is in the area of Distance Learning.
- The Internet has also become a Universal Library, where books, journals, articles and other materials can be sourced right within the confines of individual's homes in any part of the Globe.
- While authors are finding cheaper means of publishing and reaching out to wider audiences, thereby making more money, users – students, lecturers, etc, are afforded the benefits of constant and easy access to updated information on different subjects.

Evolving CT Applications and Uses: Improving Quality of Life

- Education

- In Africa and indeed in Nigeria, the distance learning is increasing leveraging advances in CTs. Examples are the [NetTel@Africa](#) in South Africa, the Open University in Nigeria; There are a lot of others.

Evolving CT Applications and Uses: Improving Quality of Life

● Environment

- Telecommunications facilitate access to up-to-date information to support real time decision.
 - The result is an increase in efficiency in environmental monitoring, disaster control or emergency management.
 - Examples of applications of this in Nigeria include:
 - traffic report by some radio stations in Nigeria which communicates traffic situation to motorists and helps reroute vehicles
 - the unfortunate Ikeja cantonment disaster in which friends and relatives used the mobile phones to communicate freely with each other and coordinate responses. Etc
 - Applications for other environmental purposes include the Geographic Information Technology: specific implementation are the Geographic Information Systems (GIS) and the Global Positioning Systems (GPS). ICTs facilitate diffusions of information³² on environment and climate change.

Evolving CT Applications and Uses: Improving Quality of Life

- **Rural Development**

- In recent times, concerted efforts are being made on improving access to telecommunications services in the rural areas, hence the various Rural Telecommunications and Universal Service obligations and initiatives.
- From the foregoing, and according to a recent report on rural Telecommunications and Universal Service Obligations, the uses and practical application of telecommunications can be deduced from some of the following benefits of rural telecommunications:

Evolving CT Applications and Uses: Improving Quality of Life

- Improvement in the living conditions of the people in the rural areas by allowing them to communicate easily amongst themselves and with relatives, friends and business associates living elsewhere.
- Easier and faster access to up-to-date market and price information thereby assisting farmers and rural-based traders in their businesses.
- More rural businesses and better employment opportunities that can greatly reduce the problem of rural-to-urban migration.
- Better access to agricultural extension services such as prompt information on improved seeds, availability of fertilizers, weather forecasting and pest control.

Evolving CT Applications and Uses: Improving Quality of Life

- Improved health services including remote diagnosis and treatment advice.
- More efficient handling of civil emergencies and natural disasters.
- Wider access to education resources, especially through distance learning.
- Easier access to government and wider awareness of government programmes and activities.
- Enhanced security of lives and properties.
- Increased patrolling and monitoring of border villages and towns.

Evolving CT Applications and Uses: Improving Quality of Life

- **Empowerment for the Physically Disabled**
 - By giving access to communications, education, informal learning facilities, CTs empower people with disabilities, creating opportunities that would be otherwise inaccessible.
 - For example, the Blind could be gainfully employed in areas such as programming and telemarketing.
 - Telecommunication could also facilitate personal interaction with people with emotional and behavioural difficulties by creating a non-threatening environment

Evolving CT Applications and Uses: Improving Quality of Life

● Employment

- Telecommunications creates employment opportunities.
 - In Nigeria, the GSM companies alone have generated direct employment of over 3500 and estimated 10,000 to 200,000 in indirect employment.
 - However, the capability of the internet as a platform for information exchange is even more useful
 - as testified by the number of people in cybercafes searching for jobs and other similar opportunities.

Evolving CT Applications and Uses: Improving Quality of Life

- Government and Public administration
 - Public administrations could play roles in functions as diverse as economic development, environmental monitoring, and the provision of public information.
 - In this regards, Electronic availability of information can be of major assistance in administrative procedures for export, import, tax filings and business opportunities.
 - There are efficiency gains in claims processing time, reduced cost of operation etc

Evolving CT Applications and Uses: Improving Quality of Life

- Transport
 - By reducing the need for travel, CT applications help reduce the level of economic losses through traffic delays and accidents.

Evolving CT Applications and Uses: Improving Quality of Life

- In addition to the above, and with similar technological capabilities, telecommunications is also applied in the following areas of social and economic life of nations:
 - Industrial Development,
 - International Trade,
 - Security,
 - Social,
 - Knowledge and Information Sharing,
 - Space Exploration, and
 - Warfare.

Problems

- Inadequacy of telecom infrastructure, despite gains of the recent past
- Disparity in Telecom Facilities between urban and rural areas
- Shortage of long term investment Capital
- Skill shortages
- Insufficient Awareness of the Power Internet
- Security concerns characteristic of e-commerce transactions

Prospects

- Investment Climate in Nigeria is improving
- The drive to attract investors in the telecom sector is yielding fruits
 - Number of market players is substantially increased
 - The telecom infrastructure situation is improving
 - The number of people with access to phone has substantially increased
 - The rollout of advanced telecom services is also taking place at a progressive rate

Conclusion

- Based on the foregoing discussions, we can conclude that telecommunications not only has applications for all human activity, but actually moderate them.
- People who do not have ready access to telecommunications and information technology systems are finding themselves isolated with few opportunities and dimming prospects.
- National and world economies are becoming so integrated and telecommunications is the critical link between individual entities (businesses/countries) and the world economy.

Conclusion

- Because our telecommunications infrastructure is relatively underdeveloped, the federal government; as of necessity, is giving priority to sector reform measures that will lead to rapid expansion of this vital infrastructure.
- Telecommunications infrastructure is no doubt a vital enabler for our national development.

THANK YOU.