NIGERIAN INFORMATION ANI) COMMUNICATIONS TECHNOLOGY (ICT) INDUSTRY-PROBLEMS, PROSPECTS AND CHALLENGES

Bamigboye Omolayo Isaac and Oyetunji Moses Olayiwola

Introduction

Nigeria, being one of the developing countries of the World requires aggressive technological devices to lift her from its present stage of development to a stage of High Mass Consumption in order to be at par, with socially, economically, politically and more particularly technologically, with Europe and America and other advanced countries of the World as information technology is a panacea for national survival and development in a rapidly changing global environment.

As a result of the rapidly changing World, through the aggressive development of Information Technology (IT), the entire World has become a global village as described by Marshall McLuhan through transborder data flows which has Westernized the entire World willingly or unintentionally.

It is believed that the development of Information and Communication Technology (ICT) can only be the concerted efforts and aspirations of all arms of the government, Federal, States and even the Local Governments as well, as private agencies. This notion was held in a high esteem by the Nigerian Information Technology and Development Agency (NITDA) during the hosting of a public hearing intended to show absolute commitment of the Legislative arms in supporting the development of Information and Communication Technology (ICT) sector. The development of information, communication technology has brought about the convergence of communication, computer and media technology as well as fusion of technologies service, goods and human skill which has led to the globalization of Information and Communication Technology (ICT) knowledge driven socioeconomic developments. This development could lead to neo-cyclical poverty and underdevelopment and its attendant features of underdevelopment ranging from absolute poverty, over-population, hunger, diseases and absolute lack of basic necessities of life. This tendency is obvious to anyone w ho understands the potentials of Information and Communication Technology (ICT), the prospect of a digital divide for developing nations is agonizing and frightening. It is believed that public hearing on Information and Communication Technology (ICT) will usher in positive attention as an engine-room of development and an impetus required to motivate the 21^{s1} century industry.

International Perspective and Trends in Information and Communication Technology (ICT)

Information and Communication Technology (ICT) has been regarded as a driving force for the global socio-economic development. This has been evident from the impact of Information and Communication Technology (ICT) on individuals and the socie ty at large. This can be seen from the following trends in respect of Information and Communication Technology (ICT) on the economy.

i. The Internet as a Backbone of a Knowledge Based-Economy and Information Society

The Internet and the World Wide Web (W.W.W) has been used as a platform for new' applications including hardware, software services in the areas of knowledge, management and dissemination, communication, entertainment and the arts, sciences, medicine, government, education and all forms of electronic businesses.

ii. Growth in Infrastructure and Applications

One of the greatest achievements in Information and Communication Technology (ICT) industry is the increasing demand for more bandwidth and up waved connectivity. The developed countries have therefore reinvested in infrastructure, integrating Information Technology (IT) into their day-to-day activities. But the developing countries, including Nigeria, are facing the challenges of providing basic infrastructure and only have the advantage of being able to leapfrog older technologies and develop their modern infrastructure, applications and content of a knowledge-based society, provided Information Technology (IT) is accorded the highest level of priority although this advantage has not yet been properly pursued by the Nigerian Government.

iii. Globalization and Deregulations

The globalization of Information and Communication Technology (1CT) has transformed the work force and has changed business investment from bricks and mortar to Information and Communication Technology (1CT) applications and infrastructure. The aggressive use of technology and technical devices has changed local communities into global communities. The use of Information and Communication Technology (ICT) has also changed the business environment, l or example the production cycles have been shortened to gain the competitive advantage of being first in the market, which is no longer limited by distance although globalization has created vertically integrated organizations with worldwide distribution networks. Globalization has also led to the brain drain of Information Technology (IT) experts leading to shortage of (IT) professionals particularly in most developing countries. Governments are therefore mounting pressure and very eager to generate policies that will promote the development of the Information and Communication Technology (ICT) sector including Human Resources Development (HRD).

iv. Information and Communication Technology (ICT) and Social Infrastructure

The evolution of Information and Communication Technology (ICT) has changed the nature, status and level of interaction between citizens and community development organizations, government and public institutions. It has also improved the effectiveness of government programmes and service delivery.

v. Global Information and Communication Technology (ICT) Business

The global Information and Communication Technology (ICT) market was in excess of Strillion in year 2001. There are five industries in Information and Communication Technology (ICT) sector but Telecommunications has the largest share. The five industries in the Information and Communication Technology (ICT) sector include:

a) Telecommunication services.
b) Telecommunication Equipment.
c) Information Technology services.
d) Software.
e) Computer hardware.

It has been observed that computer software is growing at a faster rate and add about 14.2% to the GNP between 1999-2001. In terms of market segment, and revenue generation, telecommunicate services is the largest with an estimate of $858 billion US dollars in the year 2001, but in terms of growth, the globalization software market is predicted to have the largest increase from 1999-2001 followed by the Information Technology (IT) professional services.

The State of Nigeria's Information and Communication Technology (ICT) Sector

Information is known to be the major factor in the socio-economic development in any nation. Information and Communication Technology (ICT) plays a major role in education, learning and research agriculture, health, science and even in poverty alleviation by generating and expanding the existing job operation and creating new ones and generally increasing investment opportunities. The tele-density (i.e. the number of telephone lines per 100 peoples) in Nigeria is about (0.5) while that of South Africa is (10.1) Egypt (5.6), Libya (6.6), Algeria (4.8), Gambia (1.9) and Senegal (1.3). The Internet connectivity shows the same trend in respect of telephone. The government has therefore recognized the need for urgent policy formulation through the National Information Infrastructure (Nil) for access into Global Information Structure (GIS) for Nigeria to be part of the Global Information Society.

The Federal Government of Nigeria tried to build solid foundation for science and technology for national development. Some of the steps taken include:

i. Launching of new National Telecommunication Policy in September 2000 to liberalize the sector.
ii. Declaration of Information Communication Technology as a national priority.
iii. The approval of the National Policy on Information Technology by the Federal Executive Council (FEC) and the establishment of NITDA as the implementing agency.

iv. The launching of a programme for the Nigeria Satellite system by the National Space Research and Development Agency (NARSRDA).

With the Federal Government policy on privatization coupled with the plans for the application of Second National Operator (SNO), it is believed that the under listed target could be achieved.

- Existing capacity 1999 - 700,000 lines.
- Year 2003 - 3,000,000 lines.
- Year 2005 - 8,000,000 lines.

This is based on the increasing population in Nigeria estimated at about 120,000,000. The overall target is a tele-density of 10 per 100 people. In communication sector, three companies (NITEL, MTN, and ECONET) have been licensed to provide GSM cellular services and GSM operators have about 350,000 subsidiaries.

Information Technology Policy

In view of the great impact of the information technology on the development of science, technology, and the economy at large, the Federal Government of Nigeria organized a workshop in March 2000 to bring together all major stake holders in information technology to consider and review in its entity all aspects of information technology policy in order to develop an Information Technology policy framework. Professional bodies including Computer Association of Nigeria (COAN) information technology (industries) association of Nigeria, the software professional bodies and others submitted proposals to the Federal Government through the Federal Ministry of Science and Technology (FMST) on a national Information Technology (IT) policy. Many committees set up by the FMST worked on various aspects of sartorial application of Information Technology (IT) towards the promotion of the draft policy on information technology.

Finally a national committee was set up by the FMST to consider all relevant IT documents and produce the draft Information Technology (IT') policy at the end of January 2001 and the Federal Executive Council approved the implementation of the draft Information Technology (IT) policy in March 2001.

These steps prepared a platform for the development of information technology infrastructure and created an enabling environment for the private sector initiative and investment to promote the information technology industry. The policy also calls for the contribution of the Information Technology (IT) industry to the growth of the three tiers of government.

The focus of Information Technology (IT) policy include:

i. To make Nigeria an Information Technology (IT) capable country in Africa and a key factor in the information society by the year 2005 and to use Information Technology (IT) as an engine for sustainable development and global competitiveness.
ii. The government intends to ensure that IT is utilized in all sectors of human endeavour for which the policy lies addressed the sectorial application drawing up policy statement, objectives and strategies for implementation in the areas of Human Resources Development (HRD), agriculture, government, national security and other facets of national development.

The Information and Technology Policy-Scope, Funding and Implementation
(i) Scope

The national Information Technology (IT) policy was modeled on several leading IT national polices with contributions from professional bodies in Nigeria, Information Technology (IT) experts in the diaspora and the private sector. It is a known fact that the elements contained in the document are sufficient to kick start the Information and Communication Technology (ICT) programme that would be required to transform the socio-economic situation in Nigeria. The document has won the general acceptability of all sundry in Nigeria and among the international community and pledging their preparedness to collaborate with Nigeria in a number of programmes, projects, initiative which could attract investment into the Information Technology (I I) sector.

(ii) Funding

In order to achieve the objective of the Information Technology (IT) huge financial commitment is required for which a National Information Technology Development Fund (Ni l DEF) was established under the aegis ofNITDA and funded in the following ways:-

Start off grants, grants of aid, donations, matching grants (from donor agencies) counterpart funding by the collaborating organizations. 2% of the expected profits before tax of the companies and enterprises with an annual turnover of N100 million and above and the annual budgetary allocation to Information and Communication Technology (ICT). The funding strategy will create a virile and viable funding partnership between the private and public sectors on one hand and between Nigeria and the foreign investors on the other hand. It will relieve the government of any burden of the huge financial obligation for a long period of time and alleviate the fear of absolute autonomy by the government.

(iii) Implementation

A universal approach strategy was employed in implementing the policy guidelines in the areas with specific programmes, initiatives and projects developed and incorporated into appropriate plans for implementation over a designated period in the context of a short-term, medium term and long-term socio-economic development framework. The implementation of the Information Technology (IT) in Nigeria started with the establishment of the National Information Technology Development Agency (NITDA) in April 2001. The agency was charged with the responsibility of implementation and conducting the affairs of the Information Technology (IT). The agency developed a plan whose programmes, imitative, project and target are articulated in the socio-economic fabric of the economy and the Information and Communication Technology (ICT) related indicators. In of the broad based study of ICT indicator it is discovered that the success of the national Information and Communication Technology (ICT)-led socio-economic development policy plans development and implementation depend essentially on some of the following parameters.

a. Identifiable regular funding pattern.
b. Active high profile national Information and Communication Technology championing by the President and Vice president.
c. The political will of the various levels of leadership, support and commitment to the process.
d. Dedicated policy decision and professional cutting across the public and private sectors, all must be committed to the process.

The Potentials of Information and Communication Technology (ICT) in Driving Major Sectors of the Economy

The use of Information and Communication Technology (ICT) in the right way and for the **right purpose** are the requirements and the influencing factors that could activate the economy for a **meaningful development** in all sectors of the economy based on sectoral applications. These include:

i. Human Resources Development (Education and Training).
ii. Information Technology (IT) infrastructure.
iii. Transformation of Governance.
iv. Research and Development.
v. Information Technology (IT) based health care system.
vi. Re-engineering of agriculture.
vii. Urban and Rural development.
viii. Trade and commerce; and,
ix. Fiscal measures etc.

Wealth Creation, Employment and Poverty Alleviation Potentials of Information and Communication Technology

The national Information Technology (IT) policy recognized the potential of Information and **Communication Technology** (ICT) in job creation, wealth and eradication of poverty. This can be **viewed in respect of the** following factors:

1. Overseas Prospects

Information and Communication Technology (ICT) provides opportunity for employment all over the world. Technology and its application is a recent development and it is dynamic in scope. There is acute shortage of professionals which affords an opportunity for immediate employment particularly where there is high rate of unemployment e.g. Nigeria but India which particularly developed strategics to exploit the global trend of Information and Communication Technology (ICT) to advantages which made her to stand out as a beacon for information technology and she has become the chief exporter of Information Technology (IT) she has turned its stumbling blocks to stepping stones.

It will be realized that Nigeria has similar demographic statistics with India. This includes: High rate of graduate unemployment.
Large English speaking population.
Availability of cheap labour forces.

The development of youth to an extent that Nigeria can be as good as India. This can be achieved through a programme or programmes that would harness and activate the potentials in Information Technology (IT). If Nigeria can endeavour to follow the trend of history of India, within a decade, Nigeria can become major exporter of Information Technology (IT) solutions, and expertise. This can only be achieved through the collaborative programme between NITDA and NAPEP, ITF. CDM and NYSC etc on one hand, and the private sector on the other hand. This collaboration programme will enhance the development of youth which might result to the following:

i. Reduction in crime rate and the area boys syndrome.
ii. More employment of youths.
iii. Wealth creation and poverty alleviation.
iv. Development of high calibre Information Technology (IT) professionals for the nation.
v. The Information Technology (IT) policy has a target of 500,000 professionals to be trained and properly equipped with IT and entrepreneurship skills by year 2003.

Conclusion and Recommendations

Nigeria ought to have embraced the concept and application of Information and Communication Technology (ICT) much earlier than when she came to the spring board because the rate of development through Information and Communication Technology (ICT) has not been fully utilized. But if all arms of the government can fully support the Information Technology (IT) policy, a lot of development will still be realized. It is therefore necessary to take the following steps.

i. NITDA:- As the agency of IT policy implementation, should be supported with enabling legislations and the National Technology Development Fund (NITDEF) should be established under NITDA and be given legal backing.
ii. There should be strong Financial commitment by the executive and the legislative arms of government to adequately fund NITDA to actualize the objective.
iii. There should a joint committee of the National Assembly, NITDA and the stakeholders in the Private Sector to promote the programmes.
iv. There must be need for more collaboration between institutions created for poverty alleviation, youth development, women empowerment and NITDA.
v. The legislature, given its vantage position should initiate actions towards attracting counterpart funding and other forms of investments in Information and Communication Technology (ICT) from international agencies to complement public sector funding for ICT.
vi. The National Assembly should include clauses in the Information Technology (IT) bill that could encourage indigenous efforts in software, hardware and firmware development and importation inspirations in areas where there are alternatives.
vii. Legislation should be employed to address the funding options for IT development.
viii. The present impasse, wrangling and the competitive struggle among the professional, associations and bodies should stop to promote unity in the Information and Communication Technology (ICT) sector. There is need for harmony and cooperation in the industry to enhance fundamental development generally in the economy.

References Text Books

Alexander O.E.A and Suleiman A.A (2000). *Science Today in Nigeria.* Lagos: The Nigerian Academy of Science.

Award, E.M. (1977). *Introduction to Computer in Business.* International Ed. New Jersey: Prentice Hall.

Lucey (1981). *Management Information System.* Wincaster: DP Publications.

Articles

Metacalfe J.S. (1970). The Diffusion of Innovation in Lancashire Textile Industry. *Manchester School of Economic and Social Studies* Pp 145-165.

Ministry of Post and Communication (MPT) (2000). *White Paper on Communication in Japan.* Tokyo: Government Press.

Telecommunication (2003). International Journal of Technological Innovation. Entrepreneurship and Technology Management. Japan.