

Impacts Of Information And Communication Technology In The Nigerian Economy

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Abstract

This paper explains the concept of Information and Communication Technology (ICT), and its impacts in the Nigerian economy; with highlights on the merits and demerits of ICT in economic advancement as well as recommendations geared towards harnessing ICT for the overall development of the socio-economic and political status of Nigeria.

Keywords and Phrases: ICT, cyber crime, electronic governance, e-health.

1. Introduction

ICT is an umbrella term that includes any communication device or application, encompassing: radio, television, cellular phones, computer, network hardware and software, satellite systems and so on, as well as the various services and applications associated with them, such as video conferencing and distance learning. ICT is often spoken of in a particular context, such as ICT in education, healthcare or libraries.

According to European Commission, the importance of ICT lies less in the technology itself than in its ability to create greater access to information and communication in underserved population [1]. Many countries around the world have established organizations for the promotion of ICT, because it is feared that unless technologically advanced areas have a chance to catch up, the increasing technological advances in developed nations will only serve to exacerbate the already existing economic gap between technological “have” and

“have not” areas. Internationally, the United Nations actively promote ICT for development (ICT4D) as a means of bridging the digital divide.

1.1. A Glance at the Economy of Nigeria

Nigeria is Africa’s second largest economy and top oil producer with a population of about 158.4 million people. The International Monetary Fund (IMF) currently estimates Nigerian GDP as 270 billion Dollars with an economic growth forecast of up to 67 percent in 2012. She planned to rebase her GDP calculation by August 2012, which would give it an economy of 375 billion Dollars, almost the size of South Africa’s, and boost financial markets, as portfolio investors would show greater interest.

Consequently, with nearly 160 million people, Nigeria is Africa’s most populous nation. Despite her wealth, about 70 percent of Nigerians live in poverty. According to the latest Human Development Index (HDI) in 2011, life expectancy at birth is 51.9 years. This means that Nigeria has the lowest HDI ranking among members of the Organization of the Petroleum Exporting Countries (OPEC). Iraq is ranked 132, with an average life expectancy of 69.0 years [2]. However, by every standard, the Nigerian ICT sector recorded some improvements in 2011. This could also be seen by some landmark events that marked the year 2011.

For a sector that boasted of over 125 million totally connected lines before the end of last quarter in 2011, its contribution to making the country one of the fastest growing economies of the world cannot be mistaken.

Subsequently, there are significant events that marked the year 2011 which if fully implemented

would also shape several activities in 2012. These include the SIM card registration conducted by the Nigerian Communications Commission held between March and August last year, e-registration exercise carried out by the Independent National Electoral Commission (INEC), introduction of Cashless Policy by the Central Bank of Nigeria (CBN), and the launching of the NigComSat-IR among others.

Moreso, the draft of the harmonized Information Communication Technology (ICT) policy released by the Ministry of Communication Technology for comments and views by members of the public is expected to create digital based economy. It would be recalled that the Minister had in August 2011 set up an Adhoc committee to harmonize all the various policies for different sectors in the ICT industry including telecommunications, broadcasting,

information technology and postal services. The national ICT policy was developed in support of developmental goals of the Nigerian vision 20-2020 imperative. This policy document is the harmonization of the separate policies governing the ICT industry. With this development, the policy is expected to be the overarching guide and platform for the overall development of the ICT industry and will facilitate the creation of a digital knowledge-base economy [3].

The mathematical prediction of growth in Information Age from the World Bank Development Indicators of Nigeria is shown in table 1.

Table 1. Prediction of Nigeria's growth in information age

Percentage access per 100 people to internet	Year
4.2	2005
5.5	2006
6.8	2007

With arithmetic series, one can determine the percentage access per 100 people to internet by the year 2015 using the relation:

$$n^{\text{th}} = a + (n-1)d \dots\dots\dots (1)$$

where n^{th} represents the year 2015

a represents the year 2005

n represents the number of years

d represents the common difference

Therefore, by the year 2015, the percentage access per 100 people is given by:

$$\begin{aligned} n^{\text{th}} &= 4.2 + (10 - 1) 1.3 \\ &= 15.9 \\ &\approx 16 \end{aligned}$$

The implication is that in 2015, 16 out of 100 people will have access to internet in Nigeria. This is not a good indicator. So, all hands must be on deck to ensure that more than 16 out of 100 persons have access to the internet in Nigeria by 2015.

1.2. ICT and Economic Growth

The Theory of Economic Paradigms (TEPs) maintains the various technological innovations that drove growth of nations in the past, which has led to the developed nations of today. Such models have unintended consequences, including large scale

pollution and destruction of environment. However, an emerging Green TEP provides a means to pursue growth minus the environmental destruction. For third world nations, the advent of ICT compels attention to ICT literacy, because lack of ability to take full advantage of ICT will lead to poorer nations falling behind the developed nations in their ability to compete in a globalized world. When the poorer nations are not able to catch-up with ICT knowledge, the gap between the incomes of poor and rich nations will widen.

The techno-economic paradigm views the economic growth in developed nations to have been propelled by innovations in technology that had the effect of increasing productivity over large swathes of the economy, which in turn generated wealth. There are several viewpoints regarding TEP, and table 2 indicates some of these view points. Ascroft [4] considered that the emergence of industries related to cotton and iron drove economic growth in the late 1700s to early 1800s, while steel and oil, drove growth in the early and late 1990s and the microchip drove growth after 1990s. The other factors indicated in table 2 concur with the idea that different technological innovations drove growth at different periods, but differ in the list of specific innovations that drove economic growth at various periods.

Table 2. Techno-economic Paradigms

TEP 1	TEP 2	TEP 3	TEP 4	TEP 5
Innovation Period	Innovation Period	Innovation Period	Innovation Period	Innovation Period
1770s - 1830s	1840s - 1880s	1890s - 1930s	1940s - 1990s	1990s
Cotton	Coal	Steel	Oil	Microchips
Iron	Transport			Microelectronics, ICT

2. Merits of ICT in the Economy of Nigeria

The merits of ICT cannot be overemphasized. Information and Communication Technology (ICT) is a phenomenon that fits into the globalization project of empowering gender and sustainable poverty alleviation in a nation's economy. Poverty amidst plenty is the greatest challenge facing Nigeria. Men and women in poverty use diverse coping mechanisms conditioned by their access to various support systems. A brief x-ray into the advantages of ICT in improving Nigerian economy is outlined below.

Electronic Governance

The questions that usually come to mind are: what is the role of Information Communication Technology in governance? Is government doing enough to empower her people through ICT? In Nigeria, many government agencies are now using websites to provide information on the activities of government. Today people of Nigeria can go to the internet and get any information they want. Jobs, contracts, and government activities are posted to websites for public knowledge. This has greatly improved productivity, thereby making the economy of Nigeria high. Nigerians can now ask questions about public issues and make their views known to government.

Stone age tools and concepts cannot empower the people.

E-Health and Telemedicine

E-health is a relatively new term in health-care practices and one of the most rapidly growing areas in ICT today. Telemedicine involves the use of medical information transferred from one site to another through electronic communications to improve patient's health care including diagnosis and treatment. With the introduction of e-health and telemedicine in Nigeria, death-rate has reduced drastically in the country.

Wealth Creation

Through ICT, Small and Medium Enterprises Development Agency of Nigeria (SMEDAN) which was established by the SMEDAN Act of 2003 to promote the development of Micro, Small and Medium Enterprises (MSME) sector of the Nigerian economy can soar to greater heights. These can be achieved by developing IT based systems and infrastructures that will aid enterprises in maximizing profit with less capital investment and high quality product [5].

Using ICT to fight poverty

Poverty can be reduced to minimum if and only if ICT is inculcated in a nation's economy. Figure 1 describes how ICT can be used to fight poverty.

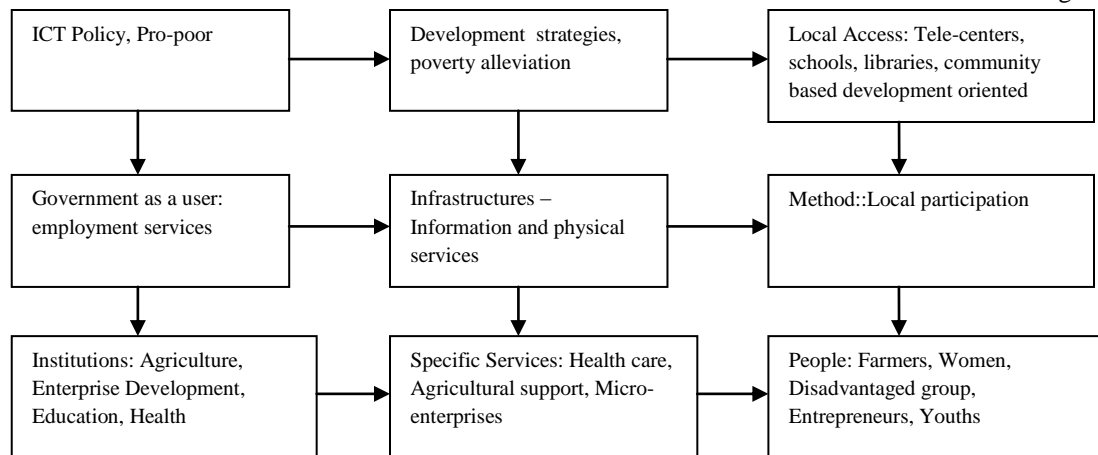


Fig. 1. A framework for using ICT to fight poverty

ICT and National Security

The use of ICT in combating crime and terrorism cannot be undermined. Under the leadership of Governor Sirriake Dickson of Bayelsa State, Nigeria, the state has signed a Memorandum of Understanding (MOU) with Huawei Chinese company to install CCTV (Closed Circuit Television) in the whole of the State capital, Yenegoa. This will help to keep surveillance on the State capital. It will also go a long way in reducing crime in the state. Car trackers, demobilizers, timers, etc also made vehicle theft a thing of the past. Remote sensing and the use of Global Positioning Systems (GPS) have helped in tracking heavy duty vehicles and locating specific positions on the earth surface, foiling of terrorism and ensuring safe delivery of goods and properties.

These and more are few gains of ICT in the Nigerian economic growth and development.

3. Demerits of ICT in the Economy of Nigeria

In as much as ICT ensures a promising future for national economic growth and development, the adverse effects of ICT in Nigerian economy cannot be sidelined. This section attempts to explain the demerits of ICT in the economy of Nigeria.

Cyber Crime

A survey of computer and cyber crime conducted recently indicated that Nigeria is the most internet fraudulent country in Africa. Besides, the same report stated that the giant of Africa is ranked third among others identified with cyber fraud and computer crime in the world.

The report contained in the Global Computer Crime and Security brought stakeholders in Information and Communication Technology (ICT) in Nigeria together at Heinrich Boll Foundation (HBF) Conference Hall to discuss how to facilitate information security, reduce security breaches, and steps to contain ICT crime in Africa.

Due to the globalization of the world via ICT, access to government classified information has been enhanced, thereby posing great threat to national and international co-existence. For example, Wikileaks have been publishing Diplomatic Cables sent among nations via e-mails; many financial institutions have been liquidated as a result of hackers who gained accesses to their databases thereby siphoning these institutions' large sums of money. Private and public websites as well as e-mail addresses have been

hacked by unscrupulous elements. These have resulted in defrauding institutions and individuals in Nigeria, thereby affecting the economy of the nation.

ICT and Terrorism

The rise in terrorism all over the world which has been improved by ICT is of serious concern to world peace and unity among nations especially Nigeria. This development has called for concerted efforts among stakeholders, civil society groups, corporate bodies and government institutions to join forces together to rid the continents of the imminent terrorist attacks through the use of Information technology.

Drones, nuclear war heads, ballistic missiles, rocket launchers have been invented via ICT. These are weapons of mass destruction. It was recorded that one nuclear war head which can be launched from Atlantic Ocean, can destroy about 145 million people and affect 924,000 sq km surface area of land adversely. Even ten years after such disaster, its effect, such as gene mutation, cancer, etc, can still be dominant in the areas where such heinous crimes were committed.

In Nigeria today, many investors are not comfortable with their businesses in the northern part of the country because of the constant terrorist attacks by the so called Boko Haram group. The group uses ICT knowledge to cause terrorism all over the northern Nigeria. The latest terrorist attack was done at the highly respected Armed Forces Command and Staff College, Jaji, Kaduna State of Nigeria on November 25, 2012. It was a blow on the economy of Nigeria because the country must use her resources in rebuilding the destroyed infrastructures.

ICT and Health

As in the case of other nations, the health implications of ICT in Nigeria cannot be overemphasized. Effects of radiation from cell phones, base transceiver stations, microwaves, etc. are under study by scientists and engineers. The direct and indirect causes of cancer have been a case study worldwide. The effect of long exposure to monitors and other electronic gadgets is one of the effects of ICT on health. There are cases of eye irritation on long exposure to cathode ray tubes and electronic monitors, etc.

4. Conclusions and Recommendations

In order for Nigeria to be economically competitive, politically stable, and socially secured, there is need

to utilize ICT in making advances in health, politics, education, business, agriculture, national security and poverty reduction. The country needs to focus its attention on the positive development, access and implementation of ICT both in the rural areas where majority of the poor people reside and in the urban areas.

The problem of technical support for ICT can be solved by strengthening the local and regional technical colleges and universities. A telecentre that is designed to support community development should be stressed by Nigerian government. It should be aggressive and creative in localizing its knowledge and information resources. Locations for ICT centres must be carefully selected and should take into consideration the “level of political demand for communication and information services from a large number and wide range of users”.

Moreso, there is need to devise means to stop perpetrators of internet crimes because their actions negatively affect economy. There is need to ensure the security of the present global village, mega businesses and the posterity from the protracted evil of cyber crime without delay. Law enforcement agencies such as Economic and Financial Crimes Commission (EFCC), Independent Corrupt Practices and Other Related Offences Commission (ICPC), State Security Service (SSS), the Nigeria Police among others should play prominent roles in the fight against the new trend of ICT vices.

The following are needed in ICT:

1. Establishing centres of ICT services that will house ICT experts for trouble shooting and upgrading mobile ICT laboratories. Such centres will also help in customizing software for local needs like translating the software to local languages.
2. Building mobile laboratories using second hand material wherever possible and free software such as Linux to reduce costs.
3. Creating a train-the-trainer system, whereby a pool of trainers/teachers will be accommodated at remote locations to man ICT labs and deliver the ICT literacy programmes.
4. Create a timetable that will allocate the ICT mobile labs to different areas at different times so that limited resources are efficiently deployed to provide every citizen the opportunity for at least basic ICT literacy that can help them to take advantage of important ICT based options such as e-mails for economic improvement of Nigeria.

In this light, the government of Nigeria should improve on the national ICT for Development (ICT4D) Strategic Action Plan Committee to develop a new ICT policy for development as ICT action plan/road map [6]. This will positively affect the growth of Nigerian economy.

The following are lists of Communication/IT bodies in Nigeria:

1. Nigerian Communication Commission (NCC)
2. Nigeria Computer Society (NCS)
3. IT Industry Association of Nigeria (ITAN)
4. Association of Telecommunication Companies of Nigeria (ATCON).

In spite of the huge oil revenue earned by the country over the years, Nigeria has experienced slow economic growth, with the oil and gas sector failing to take the country out of its socio-economic conundrum. For the country not to experience stunted economic growth and successfully transit to a digital economy, experts have emphasized on the need to harness Information Communication Technology as a major enabler.

In conclusion, experts have proposed that a nation's economic development depends on the overall progress in her ICT sector, and a stunted economic growth in a country if ICT is not effectively leveraged.

5. References

- [1] Sharpe, M., “1st 2000: Realizing an Information Society for All”, Brussels: European Commission, 2000, pp.150.
- [2] World Bank, “World Development Indicators 2009”, International Bank, Washington, D.C.
- [3] Anderson, Jon, “Applying the Lesson of Participatory Communication and Training to Rural Telecentres”, FAO, Rome Italy, 1999, <http://www.fao.org>
- [4] Ascroft, J. and S. Masilela (eds.), “Participatory Decision-making in Third World Development”, Participatory Communication, Working for Change and Development. New Delhi, 2009.
- [5] CBN, “The Changing Structure of the Nigerian Economy and Implications for Development”, Realm Communication/Central Bank of Nigeria, Lagos, 2000, pp 4-7.
- [6] Ndukwe, E., “The Roles of Telecommunications in National Development”, Paper presented at the 19th Omolayole Annual Management Lecture, Chartered Institute of Bankers, Lagos, Nigeria, 2003.