

Original Article

THE RELEVANCE OF ICT FOR SUSTAINABLE NATIONAL DEVELOPMENT IN A RECESSED ECONOMY IN NIGERIA

Dr. P. Ubaka Ugwoke

Federal College of Education Eha-Amufu, Enugu State

08063085670

Email:

ugwokepaulinus22@gmail.com

Abstract

Today, it is easy to see that all over the world that the development of any nation depends very largely on the development of science and technology. The evolution of Information and Communication Technology (ICT) with its merits is testimony to the above fact. Over a decade, application of ICT has improved service delivery, job creation, efficiency, and transparency in national development. This paper highlights some of these relevance of ICT and how they can be harnessed for sustainable national development. Also, discussed are existing challenges to harnessing ICT potentials in Nigeria and possible solutions.

Keywords: ICT, sustainable national development, Nigeria.

Introduction

Information and Communication Technology (ICT) has evolved to be a transforming mechanism with the potential of accelerating the developmental process of any developing nation. Its importance in the social, political, educational, and economic development of a country like Nigeria cannot be over emphasized. Overwhelmed by what ICT has brought to bear in the society over the years, several authors and scholars world over have not hidden their views. Zurich (2015) observed that Information and Communication Technology (ICT) made our work more sustainable: saving energy and material resources by creating more value from less physical input, increasing quality of life for more people without compromising the future generation ability to meet their needs. The revolutionary potentials of ICTs lie in their capacities to instantaneously

connect vast networks of individuals and organizations across great geographic distance at very little cost. As such ICTs have been key enablers of globalization, facilitating worldwide flows of information, capitals, ideas, people and products. They have transformed business, markets and organizations, revolutionized learning and knowledge sharing, empowered citizens and communities and created significant socio-economic growth in many countries (Toyo and Ejedafiru, 2016).

Nigeria appears to be making progress in harnessing the potentials of the ICT industry even though the pace is slow. Nwabueze and Ozioko (2014) observed that a significant milestone in the development of the ICT industry in the country is the formulation of a National Information Technology Policy (NITP), which was approved in March, 2021 by Federal

Executive Council. With the enactment of this policy came the establishment of an implementing agency the National Information Technology Development Agency (NITDA) in April 2001. This agency is charged with the responsibility of implementing Nigeria's IT policy "as well as promote the healthy growth and development of the IT industry in Nigeria (Anehobi, 2017). The progress made with this development could be seen in some institutions across Nigeria but a lot still needs to be done.

Therefore, Nigeria like most developing countries should embrace ICT as a major driving force to stimulate development and economic growth. ICTs are significant tools for sustainable development which cannot be ignored by Nigeria to be able to climb to the heights developed countries have reached.

Concept of Sustainable Development

According to the Brundtland Report of the International Institute for Sustainable Development (2018); "Sustainable development is development that meets the needs of the present without compromising the ability of future generation to meet their own needs. It contains within it two key concepts: the concept of needs, in particular the essential needs of the world's poor, to which overriding priority should be given and the idea of limitations imposed by the state of technology and social organization on the environment's ability to meet present and future needs." Eze and Attama (2019) recognize that sustainable development is now as much about social quality for current generations as about efficient resource use and conservation of natural resources for future use. Amodu (2018) stated that sustainable development is a process rather than an end goal. He further noted that this process requires constant evaluation and analysis of the emerging trends in the discussion so

as to take the issue of sustainable development to the next level.

Sustainable national development however, focuses on the need to improve the lives of citizens for the future that is, building the nation for the future. With ICT, the products of electronics and communication technologies such as the Internet, mobile phones, email, computers and other resources can be harnessed to enhance productivity and efficiency of activities geared towards achievement of sustainable development in Nigeria.

What is ICT?

Simply put ICT is the application of computer and other technologies to the acquisition, organization, storage, retrieval and dissemination of information. ICTs are computer based tools used by people to work with the information and communication processing needs of an organization. According to Olaleye, (2015), ICTs are tools that are necessary in all educational institutions, which include primary, secondary and tertiary institution. He further stated that these tools comprises electronic devices such as computer (software and hardware), networking devices, telephone, video, multimedia, internet services, television, satellite discs, photocopy, CD ROM, fax machines and so on.

The prevalence and rapid development of information and communication technologies (ICTs) has transformed human society from the information technology age to the knowledge age. Electronic data communication has become the industry standard of transaction media and widely used in such areas as education, payment of bills, video conferencing, and group work collaboration, etc. through ICT applications like tele-education and tele-medicine, education and health can be brought to the door steps of the rural and urban residents in Nigeria, as already practiced in many developed

countries such as India and China. Information and communication technology (ICT) should be used as a pedagogically powerful tool for the construction and modeling of knowledge.

Potentials of ICT for Sustainable Development in the different sectors of Nigerian economy

The effective integration of ICT in education, healthcare, agriculture, commerce, governance and other sectors of Nigerian economy has a lot of benefits for sustaining development in both rural and urban areas. The potentials of ICT application and how they can be harnessed can be viewed under the following sectors; education, healthcare, governance, business and commerce, and agriculture.

Education

In recent years there has been growing interest in how computers and the Internet can best be harnessed to improve the efficiency and effectiveness of education at all levels and in both formal and non-formal settings. But ICTs are more than just these technologies; they include older technologies such as telephone, radio and television, which undeniably have been wonderful instructional tools.

Anytime anywhere, one defining feature of ICTs is their ability to transcend time and space. ICTs enhances and encourage individualized instruction giving learners opportunity to learn at their own time and pace. Through the internet, online course materials, for example, can be accessed 24 hours a day, 7 days a week. ICT-based educational delivery (e.g., educational programming broadcast over radio or television) also removes the need for all learners and the instructor to be in one physical location. Additionally, certain types of ICTs, such as teleconferencing technologies, enables instruction to be received simultaneously by multiple,

geographically dispersed learners (i.e. synchronous learning).

Teachers and learners no longer have to rely solely on printed books and other materials in physical media housed libraries (and available in limited quantities) for their educational needs. With the internet and the World Wide Web, a wealth of learning materials in almost every subject and in a variety of media can now be accessed from anywhere at any time of the day by an unlimited number of people. This is particularly significant for many schools in a developing country like Nigeria and even some in developed countries that have limited and outdated library resources. ICTs also facilitates access to resource persons-mentors, experts, researchers, professionals, business leaders, and peers all over the world. When used appropriately, ICTs especially computers and internet technologies enables new ways of teaching and learning.

Governance

The potential attributes and benefits of ICT to policy makers in the society have been accepted as an imperative paradigm (Eze, 2018). In all intents and purposes, ICT is the acclaimed engine room of modern day global development and sustainable growth. In the same vein, (Anehobi, 2017) maintains that no institution or organization can still rely only on the traditional printed information resources to person efficiently.

The infusion of ICT into public administration enhances efficiently in the delivery of services to the people. ICT helps in taking high quality decisions and at the same time saves time. It is in line with the laudable roles that the federal government of Nigeria in order to ensure the full exploitation of the potentials of ICTs in sustainable democracy laid foundation for e-government in Nigeria (Ugwu,

2021). ICTs are used to promote openness in governance as well as a platform for citizens to report on government activities for the purpose of reducing corruption and in promoting efficiency.

Health care

ICT applications are supporting the more efficient exchange of information between health professionals thus saving time and money. They enable the transfer of patient records between sites and help to improve the response of the medical staff. ICT applications can improve clinical effectiveness, continuity, and quality of care by the full range of health care professionals. The application of ICTs to provide medical care on demand and independent of person-to-person contact is referred to as telemedicine.

Tele-medicine can provide medical care to people in their homes, in isolated places or in times of emergency, and permits remote consultations between health professionals. Mobile phones have been playing a significant role in health delivery service. This is justifiable by its ability to bridge the communication gap between medical practitioners and patients as well as medical colleagues. The successful implementation of telemedicine is not only reliant on the availability of the necessary technologies but also upon the willingness and ability of health care professionals to adopt ICTs

Business and commerce

ICT applications create business opportunities especially for companies located far from urban centers, and improve link among firms, suppliers and client. When used well, ICT can also make management and operation more efficient. In another development, Eze (2018) maintains that ICT is very useful in corporate environment because it promotes performance and improves efficiency.

There is a potentially large market for advanced ICT tools needed by business, research institutions services in developing countries like Nigeria. The use of ICT is capable of fulfilling a number of business needs such as strategic, operational or marketing needs or a combination of all of them. The evolution of ICT has helped in the transformation of global economy and creates new business linkages and opportunity that cross business sectors, cultures and distances. Also the e-business have provided opportunities for tourism by offering a fully developed web portal as comprehensive Destination Management system (DMS) that include booking and transaction facilities which promote the opportunity to increase sales and revenue (Paul, 2021).

Agriculture

Farmers in the developing countries use ICT to access price information from national and international markets as well as connect to policy makers and other farmers. There are also smart phone apps that can show you information about the status of your crops and irrigation system remotely. In livestock farming, cattle breeding now includes scientific crossbreeding techniques that produce cattle with greatly improved fertility. Having a local radio/TV show will be a great help in informing the community on updates from the agricultural sector. ICTs can also be used for training purposes.

Farmers in ICT resources to perform a wide variety of tasks in their crop management: planting date selection; water utilization and management; pest and diseases monitoring, identification, and remediation; and harvest management.

Challenges to harnessing ICT potentials for sustainable national development

In Nigeria today, there is increasing awareness of the benefits derived through adoption and use of ICTs

but there are many serious challenges which must be addressed to be able to sustain national development. Ugwu (2018) pointed out three strong reasons that stand against effective use of ICTs in Nigeria economy: low level of computer culture, poor telecommunication infrastructure, lack of awareness. Other factors include: resistance to change, lack of qualified ICT personnel, inadequate funding, and lack of uninterrupted power supply.

Low level of Computer Culture/Literacy

When people are not computer literate, utilizing the facility would be a problem. In other words, having a good background in computer skills makes the use of computers in workplaces very practicable.

Poor and inadequate infrastructure

In Nigeria, most facilities required for the implementation of ICT and its peripherals into activities are scarce. Worse is even the case in rural communities. Ezeme (2019) pointed out that poor and inadequate telecommunication facilities, poor level of computer literacy, among others pose as a big problem to the effective utilization of modern technologies by the citizens of Nigeria since the necessary infrastructure that might stimulate the interest of individuals on the use of ICTs are not readily available.

Lack of Awareness

Lack of awareness makes availability of ICTs impossible. People must be aware of the advantages of using ICT. Training workers on the use of computers and other related technology tools for services in any organization and the economy at large is very important. A well trained worker can perform effectively in his/her work place than he/she who is not trained at all.

Resistance to change

In education for example, there are resistance to change from traditional pedagogical methods to

more innovative technology-based teaching and learning methods by both students and academics. The attitude of various managements in and outside institutions towards the development of ICT related facilities such as the internet and procurement of computers is rather slow in some instances, and in others there are no aids or support by the government at all (Albirini, 2017).

Lack of qualified ICT personnel

Most government agencies and institutions lack computer literate workers and ICT experts that would support and manage the internet connectivity and /or application of ICT in the discharge of their duties.

Inadequate funding/ high cost of ICT equipments

Computers and other ICT facilities are too expensive to purchase as such not all organizations can afford the purchase of ICT facilities. The cost of equipment in Nigeria with a recessed economy and seriously devalued currency is enormous. For ICT facilities to be made available,, used and maintained in teaching and learning situations, it requires money. Where the required money is not available or insufficient, ICT facilities will not be purchased thus limiting the use in teaching and learning.

Lack of uninterrupted power supply

Almost ICT technologies require reliable power supply to function effectively. In Nigeria, provision of electricity to both rural and urban areas has been difficult to effectively harness the potentials of ICT.

Conclusion

ICTs are enablers for economic growth because of their crosscutting nature thus affecting all sectors. They have impacted on different sectors of the Nigerian economy. ICTs facilitate speedy information transmission, high level decision making, reduce cost in resource/organizational management and as well open vast opportunities for

information sharing among individuals, companies and governmental institutions. Adoption and proper utilization of ICTs will lead, among others, to increased yields and quality production of goods and services. The importance of ICT for sustainable development has been recognized by Nigeria government. What remains is effective implementation of the policies involved.

Recommendations

To be able to harness the potentials of ICT for sustainable national development, the following recommendations should be seriously considered:

1. Government should improve infrastructural facilities like telecommunication facilities to make ICT work in different sectors in order to ensure sustainable development.
2. With the serious power supply problem in Nigeria, there is need for the government to declare a state of emergency on the sector so as to resolve the problem rather than depend on generators for power.
3. ICT education should be included in educational curriculum including the provision of necessary infrastructure support and massive training and deployment of skilled manpower to the institutions throughout the country.
4. A policy environments which encourages investment in ICT should be put in place including low traffics on import of ICT infrastructure, in order to promote affordability and wide range usage at all levels of the educational system
5. Nigerian leaders should as a matter of urgency formulate and implement policies that could enhance the deployment and development of ICTs for sustainable development.

6. The government should make funds available particularly for training and educational research to encourage manpower skill acquisition and development.

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