DIGITAL AND TRADITIONAL POVERTY ALLEVIATION USING AFFORDANCES OF INFORMATION COMMUNICATION TECHNOLOGY: NIGERIAN EXPERIENCE

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ABSTRACT

This paper tries to examine the Digital and Traditional Poverty Alleviation based on affordances of Information Communication Technology in Nigeria. The technology revolution that necessitated change and innovation was discussed. Concept of ICT was discussed. The concept of digital poverty and traditional poverty were looked into. Economic poverty, social poverty and political poverty and their causes were discussed. Affordances to Information Technologies were observed in view of government empowerment, opportunities for ICT, agriculture, education and health. There were classifications for these affordances as they would help the alleviation of poverty in Nigeria. Besides, there were challenges to these affordances. They were equally discussed. There were ways to achieving the effectiveness in implementation of ICT in Nigeria which if harnessed would make Nigeria a comfortable ICT nation.

INTRODUCTION

Technology in the 21st century era is transforming the globe into knowledge-based community where information communication technology (ICT) is increasingly providing a global bridge in educational attainment through digital media, capacity, building and sustainable development. Mangal & Mangal (2009) asserts that today, the world is living in knowledge-based society where knowledge exercises a great power, strengthens individuals and boosts the economy and assets of a nation. As things are, new knowledge are exploding through ICT and people are itching to have access to these new technologies and to effectively use them to solve various problems challenging mankind. Thus ICT can be defined as an effective and meaningful means of message transfer with relevant and instant feedback through various technologies that can modify behavior (Eri-Victor, 2016). This technological revolution that is spreading all over the globe is affecting every aspect of human activities. Take for instance the issue of electronic functions that affect automated device systems like desktop, education and training, electronic commerce, environmental management, financial services, health care and information services, data-bases, internet databases and internet development; others are multimedia personnel, telecommunications computing systems and wireless communications and the like have actually helped to improve our environment and assist infrastructural development and helping learners to be engaged in different activities.

The impact of ICT in global innovation is overwhelming. It revolves around life creating activities such as accessing, designing, using, storing, record keeping, interpreting data, transferring data, manufacturing, trading, monitoring and management of information using various technological media to achieve the desired goal in life activities. ICTs have in a great extent expanded the globalization functions in various areas such as facilitating information lines, building capital and ideas and developing people and product world-wide. Besides, ICT

has added value to organizations, businesses and markets due to knowledge learning and sharing in production of goods and services. The net effect is that ICT has empowered citizens to participate in economic growth and national development.

Education in the 21st century cannot meet the needs of the people without integrating Information Communication Technology into it. The Federal Republic of Nigeria on Education, section a – d, emphasized that education is an instrument for national development in giving every child a right, therefore, school programme should be relevant, practical and comprehensive. This statement points out that teachers must be highly involved in utilization of ICT for teaching and learning. For the ICT potentials to be effectively harnessed in schools, teachers and students should be able to have access to ICT facilities and resources, have technical support at their disposal, and be in the position to decide on why, where, and how ICT tools and activities should be used to support and extend curriculum objectives to students and engage them in meaningful and active learning (Abe, 2013). ICT in education engages and motivates students in every learning style, offers unique instructional approaches to teachers to enable them maximize their teaching functions for the benefit of the students. Therefore, the introduction of ICT into teaching and learning could go a long way in making education a vibrant force in reshaping students' intellectual growth and development.

ICT gears up to innovation and change which in effect is transforming our educational system from agrarian and industrial revolution of the 19th and 20th century to knowledge based 21st century era. This new based knowledge system is fastly shifting the instructional process to knowledge based (UNESCO, 2002). As a result, there is a change in the traditional teaching methods the teachers used to the technological methods that yield positive change in intellectual advancement of students. These technological methods of the 21st century enable teachers to acquire skills in digital literacy, innovative thinking, creativity, sound reasoning and effective communication. Consequently, the 21st century teachers are re-positioned to effective utilization of ICT facilities for instructional delivery of curriculum content, collaborating and sharing online and offline via internet connectivity which make them qualitative and digital teachers globally. By this process, a functional education will be instituted. Learners would be made to learn meaningfully by collaborating with peers, teachers and parents when they are actively engaged. ICT would make students to acquire functional education for self-reliance as it would provide an array of multimediated facilities which would enhance and transform them into entrepreneurs instead of applicants as is obtainable in many developing nations. In support to the above truism, UNESCO World Education Report (1998) affirmed that the objective is to improve and diversify instructional methods in promoting the need for nations to attain knowledge based economy as it moves from industry to Information Age and this will challenge the workforce in the years ahead.

At this juncture, the paper looks at the meaning and definitions of ICT and their components, the concept of digital and traditional poverty, affordances of ICT in poverty alleviation, challenges to using the affordances of ICT for poverty alleviation. The way forward are to be discussed. The paper will follow the pattern as just stated.

Concept of Information and Communication Technology

Information and Communication Technology (ICT) has been defined by various authors in various ways. Anekwe (2003) called it a revolution that involves the use of computers, internet and other communication technologies in every aspect of human endeavor. That it is about sharing and having access to data with ease; it is regarded as the super highway through which information is transmitted and shared by people all over the world. In another definition, Wikipedia looked at Information and Communication Technology as simply an extended term which stresses the role of communications and the integration of telecommunications (telephone lines and wireless signals), computers as well as necessary enterprise software, middle ware, storage and audio visual in the process. Again, ICT from techterms.com (2010) 4th January, refers to technology as that that provides access to information through telecommunications. The belief is that it is similar to information technology (IT), although, its primary focus is on communication technologies. For instance, the internet wireless networks, cell phones and other various communication media are involved. In the same process, writing on the definition of ICT, World Bank (2002) affirmed that ICT is a set of activities that facilitate the capture, storage, processing, transmission and display of information by electronic means. Besides, contributing to the definition of ICT, the college – assignments.wordpress.com (2012), ICT is the digital processing and utilization of information by the use of electronic computers. It comprises the storage, retrieval, conversion and transmission of information.

A critical look at the above definitions quickly reveals the fact that all the authors are pointing that ICT is a wide range of technologies which are used for gathering, storing, retrieving and disseminating information based on demand. From the authors point of view, ICT is a concept that is globally used to refer to those technologies that enhance the gathering of information, facilitates the processing, storage, retrieval, transfer and exchange of information. The concept is greatly used in education sector to facilitate functional teaching and learning across the globe.

Components of ICT

Information and Communication Technology has diverse components. They include:
     a. Computers
     b. Telephones of various categories
     c. Satellite
     d. Television
     e. Modem
     f. Microwave

The above components have different types of technologies built in them for effective ICT functionalities. They include sensing, analyzing, communication, display and storage technologies.

- **Sensing Technologies:** These technological gadgets are used to magnet information from the operational environment and transform the information into a comprehensive pattern by the computer using keyboard, mouse, sensor, scanners, light pen, and other inputs.
- **In Technological Analysis:** In the analyzing process, many types of computers are involved. They include microcomputers (tower or desktop, laptop, notebook, palmtop and others), mini, mainframe and super computers. Their main function is to store and process the obtained information.

- **Technologies for communication:** These are those technologies that operate as a system in communicating information between various devices such as
    o Fax (facsimile) machine, cellular phones, landline phones, television, radio, computer networks (hardware and software) microwave, satellite etc.
    o Microwave: It operates by transmission of signal or data through the atmosphere without passing through wire or cable. It has the operation sequence of radio and television signals. The transmission signals go in a straight line and not in curves.
    o Satellite: This ICT facility has a microwave transmission system in space. It is a repeater or an amplifer that receives information from one location on earth and repeats the data and at the same time sends the data to one or more locations on the earth surface.
- **Storage Technologies:** These technologies have the ability to store large volume of information. They are in the form of magnetic tape, floppy disk or diskette, hard disk, CD Rom, flash memory, zip, etc.
- **Display Technologies:** They make information available for users consumption. Such involve Visual Display Unit (VDU), printers, loud speakers (Odachi, 2007).

Literature is a replete that potentials of ICT are very powerful in poverty alleviations, both in digital and traditional forms as noted in Danbatta (20016) who stressed that the main gift of ICT is for poverty alleviation and reduction. Further, Danbatta (2016) added that ICTs are looked at as very important resources in the enhancement of socio-economic development, with a promise to eradicate poverty.

Digital and Traditional Poverty Clarified

Poverty is a very strong factor that determines the status of an individual in a society. This poverty is classified into two. One is digital poverty and the other is traditional poverty. These two sets of poverty will be discussed below.

Digital Poverty

In this 21st century period of technological growth and development of many nations, there exists digital poverty in many areas of people's lives that hinder them from maximizing life satisfaction in their environments. Anyone who lacks access to the internet in this 21st century is imbued with digital poverty. Dambatta (2016) defined digital poverty as the lack of means with which to access ICTs, the lack of skills to use ICTs and the inadequate information on how to use ICTs.

Access to information has been made possible by ICTs all over the globe. But those who cannot afford the services together with the skills to use the services are in digital poverty. Likewise those who have no access to infrastructure to deliver the services are suffering from digital poverty. They are basically ignorant and besieged by illiteracy without access to ICTs for meaningful life support.

In other words, digitally poor people lack the necessary information and communication skills provided by digital technologies. They have no knowledge of their usage and they have no effective demand for them because they are poor people and could be classified thus:
- Poor people who do not have the income and ability to use ICT and consequently receive no services.

- Poor people who cannot receive services but they are qualified by the ability to use ICT services. They are not supplied with services.
- Low income group who do no demand for ICT usage even though they have the potentials required to do so. This is as a result of lack of disposable income to purchase the facilities.
- People who are not necessarily poor but do not have demand for ICT because of poor ability to perform the functions of ICT.

Variables to define digitally poor people

These variables are classified into four. They include age, education, infrastructural availability and functionality accomplishment. These will be briefly discussed below:

1. **Age:** Age is a good measure in determining the state of digital poverty in an individual. The older an individual the higher the risk of being digitally poor.
2. **Education:** The more the educational level of an individual, the lower the risk of being digitally poor.
3. **Infrastructural availability:** The communication facilities like radio, open television, telephones of various categories, cable television, computers, internet access determine the level of digital status of an individual.
4. **Functionality accomplished:** It is the factor of effective use of technology. It involves the initial reception of information to the full interaction process that enables government and businesses to function.

The above classification of digital poverty could be put into a tabular form to show their different ICT attributes which indicate that the higher the level of connectivity, the lower the level of digital poverty. There are four categories of comparison ranging from 0 – 3.

Table 1: Digital Poverty Levels

Connectivity level	Functionality	Infrastructure	Education level	Age
III	Digital interaction (electronic Government and Business	Internet Board Band	High computer literate	Youths
II	Electronic messaging	Internet/mobile telephone services	Middle computer literate	Youth and not-so-young people
I	Communication and reception of information	Telephone services (fixed or mobile)	Low but not computer illiterate	Elderly
0	Reception of information	Radio or television	Computer illiterate	Elderly

Source: ENAH 2003 cited in INEI (2003)

The above table itemized the grade where each digitally poor people fall in. it showed that the extremely poor individuals fall into the digital connectivity of 0. They use technology only for receiving information. Their age has been a hindrance to them. Even when there is the full equipment before them to use, they might not be able to use them. It might be that they lack ICT knowledge or the necessary communication skills to operate the gadgets.

In the same way, the digital poor individuals have the connectivity level of I. these group of people have the communication gadgets in their possession to receive and communicate. But because of some variables like education, resources, illiteracy, age and human capital, they cannot perform creditably.

Looking at people with the connectivity level of II and III, they are digitally poor but they have access to internet. The difference is that one has passive use of the facility while the other has active use of the facility. One with active use could effectively navigate the world and obtain the necessary information for functional activities in government and businesses. While the other with passive use might not be connected due to the environment or domicile that has no internet connectivity. Therefore digital poverty is a function of connectivity level, functionality, infrastructural availability, education attainment and age.

Traditional Poverty

Traditional poverty could be seen as absolute poverty with insufficient life sustaining goods, inequality, inadequate health, poor education and other social services (Todaro, 1977). In other form, traditional poverty could be defined as lack of income, material resources and finance to purchase goods and services. This absolute poverty manifests as lack of means to meet basic needs such as food, shelter and clothing (Dambatta, 2016). Such poverty alienates its victim from economic, social and political participation. Consequently, they lack essential assets like good productive resources and capital formation. When it comes to employment, they are vulnerable. Their jobs if any are insecure and fragile and their incomes seasonal and meager. They live in remote, unhygienic and very poor resource areas, in villages distant from urban centres and in unimaginable slums. Their poverty stems from lack of incomes, poor health and lack of education, lack of social safety nets and untold discrimination. Equally, they lack information and are not remembered in essential government services and corruption. As they do not have political will, they are endowed with poor governance and corruption, inappropriate public policies and programmes (World Bank, 2001).

The traditional poverty could be divided into three dimensions which include economic poverty, social poverty and political poverty. These poverty dimensions should be discussed below.

- **Economic Poverty**

Economic poverty results as a function of poor human capital development which affects the national output in a negative way. It weakens the economy and reduces the Gross Domestic Product (GDP) of the nation. Human Capital involves investment in people. This investment is done through education, training and investment in health which opens up opportunities and choices that may not have been available to many individuals. They would be exposed to acquisition of various skills and knowledge to acquire the means of production for national and personal growth. By so doing, they can be in good control of their own productivity and earnings. Be-it-as-it-may, investment in education, health and migration will help people to adjust and find new jobs to stimulate learning and improvement in their skills. It is the investment in human capital that helps to strengthen the economy, raise the standard of living and remove economic poverty in the lives of the people.

- **Social Poverty**

The inadequate distribution of the nation's wealth and resources has been the source of the wave of social crisis that result in social poverty among various communities. At times the

impact on the national economy is devastating and colossal. A particular segment of a society whose neglect is apparent such as the less privileged, the unemployed, disabled and rural poor, has fueled crises of high dimension in the society. The simple fact is that this group is uneducated and not empowered economically, they become easy assets for social menace – kidnapping, terrorism, vandalism, religious extremism, ethnic cleaning, child trafficking, prostitution among others (Okewu, 2012).

Looking at the rate of terrorist attack in Nigeria due to unemployment and denial of access to means of livelihood, the vulnerable groups like the Boko Haram insurgency used suicide bombers to avenge their grievances on the government and the society at large. Below is the engagement strategy of Boko Haram insurgency in Nigeria.

Table 2: The Engagement Strategies of Boko Haram Insurgency

S/N	Vulnerable Group	Mission Strategy
1.	People with disabilities	Used as suicide bombers to detonate Improvised Explosive Devices (IEDs)
2.	Unemployed young women	Used as suicide bombers to detonate IEDs
3.	Unemployed young men	Engaged as foot solders for gorilla warfare and for suicide bombers

Source: Okewu, E. (2017). Maintaining ICTs in social security schemes in sub-sahara Africa.

The social poverty in Nigeria could be stressed from inequalities of power, prestige, status recognition, unemployment, inaccessibility to capital and assets. In Nigeria today many millions of employable individuals are without jobs. They now in line with the extreme poverty experienced by 1.2 billion people which is considered by many as the worst human right violation in the world. The global development community in an effort to tackle this problem has endorsed in the Millennium Development Goals its commitment to halving the number of people living under one dollar a day by 2015 (www.un/org/millenniumgoals/; www.undp.org/mdg/, 22.1.2003).

- **Political Poverty**

This is the type of poverty that exists when the government of the day is insensitive to the plight of the masses. The people in the corridor of power loot the national treasury and stock the loot in foreign banks. The money for infrastructural development and harnessing of national potentials are stolen by the political leaders. Consequently different developmental projects are left or abandoned. Production of goods and services are neglected and the importation of consumable items increase. When this situation prevails, we have under consumption, malnutrition, precarious housing conditions, low educational levels and bad sanitary conditions. People have unstable participation in economic affairs, attitude of discouragement and desire to violent reaction which shifts from the scale of values held by the rest of the society.

It is a pity that in Nigeria, the successive governments have tried to formulate effective policies and programmes to handle the political poverty of the nation. Their failures are lack of political will to handle the poverty alleviation programmes they institute. Take for instance the Operation Feed the Nation, Green Revolution, Structural Adjustment Programmes etc, all were abandoned because of the glaring inefficiency in government operation. Even those managed by the spouses of Heads of States never solved the poverty case they were expected to. Now the government of President Muhammadu Buhari GCFR, is advocating the diversification of economy through the use of ICT (Dambatta, 2016). However, his political

will to actualize his economic and political solution to the national poverty would be seen in due course. For the mean time, hunger and poverty coupled with the crippling economy is weighing the nation down. The inflation rate is double digit, scarcity and lack are stirring people in the face. Deaths occur in various quarters due to poverty. Nevertheless, in the discussions that will follow, the writer will discuss the affordances of information communication technologies as a way out of Nigerian digital poverty.

The images below depict poverty in Nigeria

People begging on the street

Malnourished children

Infrastructural poverty and environmental degradation

Affordances of Information Communication Technology in Nigeria

Information and Communication Technologies play various roles in poverty alleviation in Nigeria. The roles would be discussed briefly below together with different agencies that are instituted to handle them.

- **Empowerment of the poor by government**

The poor is poor because he has no access to political power nor economic power. Consequently, he cannot help himself in property acquisition and decision making. As a result, the government should introduce the e-governance policy. This policy would harness ICTs for government work processes through information sharing and service delivery operations. ICTs would increase the efficiency and effectiveness in collecting revenues and empowering citizens through transparency and adequate accountability. As many Nigerians with different languages live in rural environments and communicate in their native languages, ICTs can facilitate communication with the native in their native mother tongues. GSM provides such services. The government as a result would communicate the necessary information to them in their native mother tongues. They would feel that they belong in the affairs of the nation and would abide by the decisions of the government.

Again government interaction with the citizens can yield a positive result. It empowers individual citizens. ICTs use in various interaction processes in local and public affairs give individuals, trade unions and even market women associations the opportunity to get involved in public and political processes. By so doing, they would participate in the process of decision making that take place in their society. As more and more people are subscribing to ICTs, the increase in communication would improve human rights and democracy as well as addressing symptoms of poverty which is the inability to know and influence the events controlling peoples lives.

- **Opportunities in ICTs**

ICTs have been found to be an income generation for the poor. In effect, ICTs provide access to relevant information and knowledge. It reduces costs of production as well as transaction in a business setting. It enhances communication extensively. As far as employment is concerned, ICTs offer employments to the youths and boost their income generation and alleviate their vicious cycle of poverty. Many graduates who parade the streets in search of unavailable jobs are now settled and generating reasonable income in ICTs operations. Many of them who set up ICTs office are now employers of labour. Moreso, these graduates who have the opportunity to venture into ICTs can venture into small businesses such as phone call centres, selling of phone accessories and related products. The ongoing technological revolution is so challenging that individuals all over are embracing it. Its impact on overall economic productivity and poverty reduction is very much felt in various sectors of the economy and the society at large.

Looking at the growing unemployment sector of the economy, the government uses the National Information Technology Agency (NITDA) to ease the situation. Dambatta (2016) affirmed that in fulfillment of its mandate and in support of government's effort at employment creation and poverty eradication, that the agency has commenced series of trainings called Online Business Process Outsourcing, to empower young adults and reduce unemployment. In the plan agenda, they have deployed over 300 information technology centers; 18 virtual libraries, 40 community access centres. This is added to the number of other actions meant to address poverty and create an avenue to employ the less privileged in the society. By this opportunity, the poor and the unemployed have the option to choose what to do and with various choices available, the poor would have access to basic life needs and social acceptability.

Skill Acquisition in ICT

Agriculture

When ICT defuses into agriculture, it would enable rural farmers to acquire knowledge that is necessary to increase farm production. The reason is that with ICT application, it would revolutionize agricultural extension and marketing providing information on agricultural inputs and market prices. Farmers would use ICT to communicate advice on cultivation

practices, tailoring extension services through public-private networks that enhance and coordinate transactions using the supply chain available. Knowledge is the basic ingredient to boost agricultural production and income of rural farmers.

A case is point is Kenya. In Africa, UNCTAD (2010) reported that SMS is used to provide extension services to animal husbandry (i cow in Kenya). That in Bhutan, mobile phones in conjunction with milk processing units helped to induce production by 40% within a year. Also a report in India showed that in Gujarat, that networked and computerized milk collection centres ensured quality standards, fair prices, faster processing and immediate payment to farmers. In other words, ICT in agriculture is revolutionizing agriculture and that farmers are getting better yield and increased income. In Nigeria, the use of ICT in farming would equally reshape the output potentials of farm input to alleviate the poor state of farming in the country. In this case, the use of ICT promises to connect and improve the adoption of e-business strategies in investment and cash management, to sales and marketing functions. It is the secret of development used by developed nations to boost their production potentials and economic growth. If Nigeria can promote e-business by providing information, training, and consultancy services among the SMEs, by using matching grants and cluster for support with that poverty could be eliminated.

Strengthening education

Generally why some people are poor is because they are illiterates. When people are educated, they can do many things to sustain themselves. They can survive amidst insecurity and challenges. That is why Education For All (EDF) an international body is working hard to bring education to the door steps of every individual. That is why in Nigeria as adopted by the MDGs, by 2015, children everywhere, boys or girls would be able to have completed a full course of primary schooling.

The school knowledge centres (SKC) project is designed to create demand for an adoption of ICT in Nigerian schools in order to create the 21st century skills. These skills would be infused into the system to enhance knowledge economy. The way forward is to provide schools with computers, printers, power supply, bandwidth and educational software/content. As students benefit from this School Knowledge Center (SKC), they become computer literature and can function effectively in the society.

Besides, there is an Advanced Digital Appreciation Programme for Tertiary Institutions, ADAPTI which is designed to bridge the digital divide inn academia through the use of ICT facilities. The facilities would be used to equip the lecturers and other educationists in teaching and learning processes. The basic factor in the provision of the basic skills is to increase the staff output together with adequate institutional efficiency which would make the students to acquire e-based learning for national growth and development. This is a very good way of dealing with poverty among the citizens.

Improving Poor People's Health

E-Health Project – it is estimated that the project would support the provision of world-class and superior health care to patients in target health institutions by the effective implementation of ICT enabling services. The thoughtful use of ICTs in Nigeria for health care purposes is a welcome development in that it will facilitate the management and effective flow of information in the health service system. Health care is one of the most

promising areas for poverty alleviation through the use of ICTs. This could be achieved in the following areas:

a. To facilitate remote consultation, diagnosis and treatment
b. To enable health workers in developing countries access relevant medical training through ICT-enabled delivery mechanism.
c. Radio, T.V (and more recently the internet) have a history of effectively facilitating the dissemination of public health campaigns and disease prevention strategies in developing countries.

A good example is in Ginnack, a remote island village on the Gambia River, where nurses used a digital camera to take pictures of symptoms for examination by a doctor in a nearby town. The physicians can send the pictures over the internet to a medical institute in the UK for further evaluation. X-ray images can also be compressed and sent through existing telecommunication networks.

Challenges to ICT Affordances in Digital Economy for Poverty Alleviation

There are various challenges confronting the affordances of ICT in poverty alleviation in digital economy of Nigeria. Some of the challenges include among others:

- **Government:** The government in Nigeria does not take poverty alleviation seriously. There is a wide spread corruption which is eating deep into the fabrics of the nation. The income received from the Gross Domestic Product (GDP) are stolen and hidden in foreign accounts by individuals. A great multitude of unemployed citizens are seen roaming the streets. No effective investment strategy is made to empower private and public sectors to employ the applicants. Consequently beggars litter the street soliciting for alms. It shows that the government attitude in handling poverty alleviation is not yet achievable.
- **Infrastructural Poverty:** Lack of infrastructural investment in capital projects and agriculture has dwindled the economy of Nigeria. Rural dwellers still struggle for survival because most of their agricultural products could not get access to the market because of bad or no road access. They equally lack internet connectivity and interaction because of lack of the investment of the facilities. These call for poverty.
- **Illiteracy Level:** In Nigeria illiteracy level is still very high. In some parts of the country many school going pupils and students are not in schools because of insurgency displacement factor. It negates the Education For All (EFA) of the United Nation's advocates. The degree of illiteracy is affecting the national development adversely. Education is the power of any nation but without education, the nation will never develop because of the degree of ignorance that hinder progress.
- **Terrorism:** Lack and poverty breed terrorism. The poor masses who felt that they are denied a share in the national cake gang up together to lash havoc on the populace to vent their anger and frustration in the system. A case in point is Boko Haram insurgency in the North East of Nigeria which the President of U.S.A., Donald Trump promised to send military aircraft to help Nigeria curb the menace (NTA, 2017).
- **Power Failure:** The insistent power failure in Nigeria frustrates the effectiveness of technological application in industries, homes and different workplaces. No meaningful production takes place. The use of diesel to power the generating system is not cost effective. The lack of electricity affects the marginal output of labour and productivity, increase in prices and lay off of labour force. It breeds poverty.
- **High cost of social media devices:** The high cost of social media devices has limited the rate of usage of the facilities. Many people could not afford most of the ICT devices for poverty reduction activities. The rural populace in agricultural zones

cannot maximize communication process in relation to agricultural inputs and different farming methods and crop preservation. This is as a result of high cost of media technology.

- **Lack of ICT development for the citizenry:** There is a high level of poor ICT development in the country. Our rate of development is still not appreciable. We still depend on importation of ICT facilities as a means of empowering the citizenry. Without developing the citizenry in technology in the country so as to meet the demands of the citizens, poverty will continue to flourish. We have no capacity to maintain the existing technologies in place right now.
- **Dearth of ICT specialists:** There is an acute shortage of ICT specialists that could train the people in ICT facility usage. In schools, most of the lecturers and teachers are digital immigrants who are equally learning about the digital technology. As a result a greater majority of the citizens cannot make a living through ICT operations.

CONCLUSION

The impact of technology in the 21st century has been outlined and discussed. The concept of poverty has been discussed in relation with the concept of Information Communication Technology. In the process the ICT components were discussed. The ways to measure the digital poverty were looked into and the effective policies to reduce this digital poverty were looked into. Other forms of poverty like economic poverty, traditional poverty, social poverty and political poverty were analyzed.

It is important therefore to view ICT as multidimensional products and services that have three basic relationship: Connectivity, communication and information. These variables could be of used in measuring digital poverty as they affect Nigeria.

Digital poverty and traditional were expanded to include economic, social and political poverty and their effects on individual poverty and national poverty were mentioned. Affordances of Information Communication Technology on employment, ICT opportunities, agriculture, education and health were discussed. The challenges such as infrastructural poverty, illiteracy, power failure, high cost of social media, lack of ICT development in the country and dearth of specialists in the teaching of ICT in schools were equally discussed.

The Way Forward

Based on the discussions in this paper, the way forward is suggested by the writer. They include among others:
- The government, community, market and civil society would combine forces together to help the poor out of their predicaments in social, economic, political, security and vulnerability to various external attacks.
- ICT would assist the earning power of the poor through acquisition of education for sustainable development, health services and good governance.
- ICT knowledge would help farmers increase their knowledge of market prices but could be hampered if there is no access road for evacuation of agricultural output (World Bank, 2001).
- There would be an enabling regulatory and good policy environment for ICT sector which will include better national plants that will integrate ICT-based development.
- The ICT policy should embrace connectivity, governance, privacy, security, resource mobility and intellectual property.

- The retail segment of the market should be liberalized in all forms including the retail activities, at least when it comes to phones (World Bank, 2001).
- ICT programmes are to respond to the needs of the poor with regards to content, language, skill, design and price of their commodities.
- The development of hardware should take the poor into consideration according to the national development programmes to ensure sufficient energy supply.
- Financial framework should be developed to attract private and corporate interests for investment.

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