# INFORMATION AND COMMUNICATION TECHNOLOGY: AS VERITABLE TOOL FOR SOCIO-ECONOMIC DEVELOPMENT OF NIGERIA

**\*AISHA MUSA (Mrs) \*MARYAM .A. JIMOH (Mrs) \*\*AISHATU ALTINE ABDULHAMID**
*\*Department of Office Technology and Management Kaduna Polytechnic, Kaduna*
*\*\*Department of Business Administration and Management Cams, Kaduna Polytechnic*

## Abstract

*This paper discusses information and communication technology as a veritable tool for economic development takes a look at the possibilities ICT always bring in the*

### Keywords
*ICT, Economic, Development, Society*

*development of a economic especially in the developing countries. Many people think that*

## INTRODUCTION

Information and communication technology can be traced back to the primitive era when man used drums and fire to communicate from one village to another. today, information and communication technology has witness a tremendous growth in the society, from one stage to another. information and communication technology constitute the necessary means for which a society develop to reach the state of industrialization and leapfrog into the information era.

In any economic setting, the level of technology determines the level of economic growth. Technology is

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*humankind is at the down of a new era, that of an age of communication. Visions abound on how breakthrough in information technology will change the way we live, work, do business and interact. It is widely believed that the information age will bring radical change and improvement, and countries all over the world are busy with constructing the necessary infrastructure in order to meet the challenges of the information economic of the twenty-first century. Some of the findings made include: technology has a critical role to play in the development effort of the world, ICT is crucial to sustainable poverty reduction, mobile phones have an especially dramatic impact in developing countries, the internet has also spurred a growing wave of innovation and ICT provides key inputs for economic development. The paper concludes that information and communication technology has really played a vital role in economic development. The researchers therefore recommend that government should develop and support implementation of ICT policies and training institutes should provide ICT training within national policy framework.*

embedded in its ability to improve on the ways things are done in the past in order to achieve better output. Indeed information and communication technology is changing everything and we must respond to this pressure. This article assesses the process of societal changes; this initiative represents and discusses aspects to be represents and discusses aspects to be considered which include the issue of medium versus traditional communicative practices and the role of language.

It is argued that information and communication technology can only become a tool for economic development if it is applied in a way that address the complex challenges of improving the lives of least privileged and most needy millions around the world (Kerry 2003).

Giving the tool available, it is up to us to determine what type of change will take place and whom it will affect. Are we actually building an all – inclusive "global information society or a stratified world of information – rich and

information – poor? Who will have access to the information society, and who will be left behind? Will only the young, wealthy, educated computer proficient, and English speaking quality form members of this new society? And if so, where does this leave the remaining majority of the world population? How can information and communication technology address the many problems the world faces today, a world characterized by widening gaps between the rich and the poor, inequality, war and social discrimination? Are we actually moving towards a new renaissance ear of enlightenment, or is it likely that we will continue on our current path of marginalization and social disintegration? Are existing disparities being redressed or are they just re-enforced?

## Theoretical Background

The information and communication technology for development discussion falls into a boarder school of thought that proposes to use technology for development. The theoretical foundation can be found in the Schumpeterian notion of socio-economic evolution, which consists of an incessant process of creative destruction that modernizes the modus operandi of society as a whole, including its economic, social, cultural and political organization.

The motor of this incessant force of creative destruction is technological change, while the key carrier technology of the first industrial revolution (1770-1850) was based on water-powered mechanization, the second Kondrative (1850-1900) was enabled by steam powered technology, the third (1900-1940) was characterized by the electrification of social and productive organization, the fourth by motorization and the automated mobilization of society (1940-1970), and the most recent one by the digitization of social systems. Each one of those so-called long waves has been characterized by a sustained period of social modernization, most notably by sustained periods of increasing economic productivity.

According to Carlota Perez; "this quantum jump in productivity can be seen as a technological revolution, which is made possible by the appearance in the general cost structure of a particular input that we could call the key factor, fulfilling the following conditions: (1) clearly perceived low-and descending-relative cost & (2) unlimited supply for all practical purposes;

(3) potential all-pervasiveness; (4) a capacity to reduce the costs of capital, labor and products as well as to change them "qualitatively". Digital information and communication technologies fulfill those requirements and therefore represent a general purpose technology that can transform an entire economy, leading to a modern, and more developed from of socio-economic and political organization often referred to as the post-industrial economy, the fifth Kondratiev, information economy, digital age, and network economy, among others.
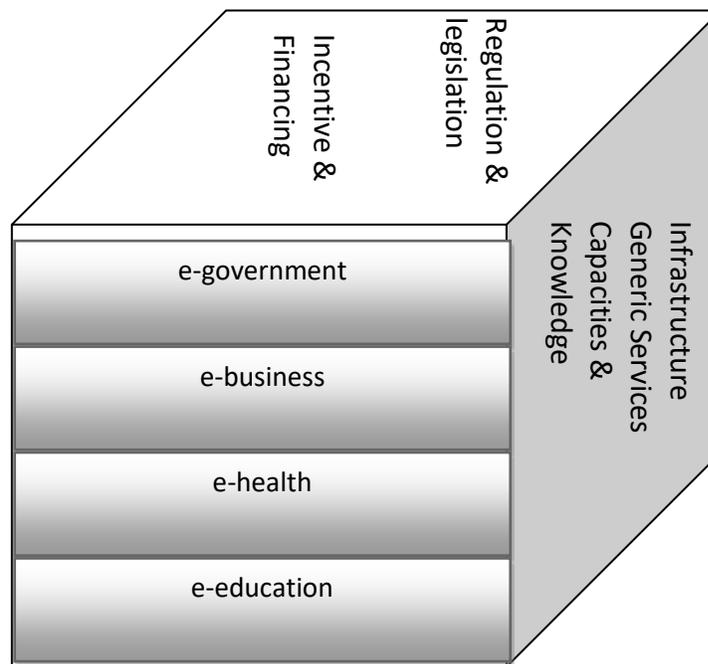


Information and Communication Technology for Development cube: an interplay between technology (horizontal: green), society (vertical: blue), policy (diagonal: yellow/red) The declared goal of ICT-for-development is to make use of this ongoing transformation by actively using the enabling technology to improve the living conditions of societies and segments of economy. As in previous economic transformation of this kind (industrial revolution, etc.), the resulting dynamic is an interplay between an enabling technology, normative guiding policies and strategies, and the resulting economy transformation. In the case of ICT4D, this three-dimensional interplay has been depicted as a cube. In line with the Schumpeterian

school of thought, the first enabling factor for the associated socio-economic transformations is the existence technological infrastructure: hardware infrastructure and generic software services. Additionally, capacity and knowledge are the human requirements to make use of these technologies. These foundations (horizontal green dimension in Figure) are the basis for the digitization of information flows and communication mechanisms in different sectors of economy (Mayuri 1992).

When part of the information flows and communication processes in these sectors are carried out in electronic networks, the prefix "e-" is often added to the sector's name, resulting in e-government, e-business and e-commerce, e-health, and e-learning, etc. (Vertical blue dimension in Figure). This process of transformation represents the basic requirements and building blocks, but they are not sufficient for development. The mere existence of technology is not enough to achieve positive outcomes (no technological determinism). ICT for Development policies and projects are aimed at the promotion of normatively desired outcomes of this transformation, the minimization of negative effects, and the removal of eventual bottlenecks. In essence, there are two kinds of interventions: positive feedback (incentives, projects, financing, subsidies, etc. that accentuate existing opportunities); and negative feedback (regulation and legislation, etc.) that limit and tame negative developments (diagonal yellow- red dimension in Figure).

Information technology can also be seen as a supportive instrument that is to be integrated into the proposed means of development. Information as such possesses, number of intrinsic qualities which lend it an added advantage superior to the other technologies. Rationally speaking, microcomputers offer novel possibilities only because of their low cost and nearly unlimited computer potential. But information technology comprises much more. It is a means to generate better and faster data and to store and exchange information; and it offer the possibility to add structurally to an accrued fount of knowledge in a developing country like Nigeria.

Knowledge is of essence in every sector and at every level of society. On the level of decision making and policy analysis the needs are evident. According to Chander (1990), the continued declined of data necessary to

lay down and described the demographic, social and economic situation, constitute a severe handicap to development as there is no reference point to start from. In order to improve the situation, one should first explore the use of information technology thoroughly. This need is equally felt by specialists of fields other than information study. For example, archeologists point out the advantage of using information technology and setting up relevant databases for up keeping and maintaining the natural and cultural heritage. Even among those who generally oppose to modernization, we can hear praises regarding the use of information technology in enhancing the quality of needed information services. Many international databases are available and some specially developed for developing countries to ensure that one does not have reinvented the wheel.

## The Meaning of Information and Communication Technology

Information and communication technology includes any equipment or interconnected system or subsystem of equipment that is used in the automatic acquisition, storage, manipulation, management, movement, control, display, servicing interchange, transmission or reception of data or information action.

Bhatnagar, and Schware, (eds.) (2001).. It refers to all technology applied to processing, storing and transmitting information in electronic form. The physical equipment used for this purpose includes computers, communication equipment and even electronic pocket .organizers (Lucas, 1997). Information technology is one of the greatest forces that are passing changes in the society today. It is one of the greatest trends of the tail end of the last century. It is changing everything and will continue to change things in the present century.

The national policy on information technology (2001) sees information technology as the bedrock for national survival and development in a rapidly changing environment.

Information and Communications Technology usually abbreviated as ICT, is often used as an extended synonym for information technology (IT), but is usually a more general term that stresses the role of unified communications and the integration of telecommunication (telephone

lines and wireless signals), computers, middleware as well as necessary software, storage, and audio-visual systems, which enable users to create, access, store, transmit, and manipulate information. In other words, ICT consists of IT as well as telecommunication, broadcast media, all types of audio and video processing and transmission and network based control and monitoring functions. (International Telecommunication Union. 2009.) The expression was first used in 1997 in a report by Dennis Stevenson to the UK government and promoted by the new National Curriculum documents for the UK in 2000.

The term ICT is now also used to refer to the merging (convergence) of audio-visual and telephone networks with computer networks through a' single cabling or link system. There are large economic incentives (huge cost savings due to elimination of the telephone network) to merge the audio-visual, building management and telephone network with the computer network system using a single unified system of cabling, signal distribution and management. This in turn has spurred the growth of organizations with the term ICT in their names to indicate their specialization in the process of merging the different network systems. Originally, only information and communications technology (with communications in the plural) was considered correct since ICT refers to communications (in the sense of a method, technology, or system of sending and receiving information, specifically telephone lines, computers, and networks), not communication (the act of sending or receiving information by speaking, writing, phoning, emailing, etc. or a message containing such information), and the older form (information and communications technology) is still the only one recorded in professionally edited reference works (e.g. Oxford Dictionaries Online, Computer Desktop Encyclopedia, Web opedia, and Encarta World English Dictionary) and preferred by many style guides (e.g. Editorial Style Guide of the Republic of South Africa). Nevertheless, the form information and communication technology is becoming increasingly common and is now used in about half the books that can be searched using Google Books and is for example also used by the International Telecommunication Union.

## The Meaning of Development

Development means growth, evolution, advancement, improvement, expansion, spread, progress, extension etc. The concept development is a set of activities that are carried out early in the systems engineering life cycle to collect and operational needs and challenges, develop alternative concepts to meet the needs, and select a preferred one as the basis for subsequent system or capability development and implementation.

## The Meaning Economy Development

Economic development is the process by which a nation improves the economic, political, and social well-being of its people. The term has been used frequently by economists, politicians, and others in the 20th and 21St centuries. The concept, however, has been in existence in the West for centuries. "Modernization, "westernization", and especially "industrialization" are other terms often used while discussing economic development. Economic development has a direct relationship with the environment and environmental issues. Economic development is very often confused with industrial development, even in some academic sources.

## Information and Communication Technology for Development (ICT4D)

Information and communication technologies for development (ICT4D) Is a general term referring to the application of Information and Communication Technologies (ICTs) within the fields of socioeconomic development, international development and human rights. The basic hypothesis behind the approach is that more and better information and communication furthers the development of a society (be this to improve income, education, health, security, or any -other aspect of human development). In our times, the most tangible and effective way to improve on information and communication flows in a society consists in fostering ICT, ergo ICT4D. The dominant term used in this field is "ICT4D" or "ICT4Dev" ("ICT for development'). Alternatives include ICTD ('ICT and development", which is used in a broader sense) and development informatics. The concept of ICT4D can be interpreted as dealing with disadvantaged populations anywhere in the world, but is more typically

associated with applications in developing countries. It concerns itself with directly applying information technology approaches to poverty reduction. ICTs can be applied either in the direct sense, wherein their use directly benefits the disadvantaged population, or in an indirect sense, wherein the ICTs assist aid organizations or non-governmental organizations or governments or businesses in order to improve general socio-economic conditions. The field is becoming recognized as an interdisciplinary research area as can be noted by the growing number of conferences, workshops and publications. Such research has been spurred on in part by the need for scientifically validated benchmarks and results, which can be used to measure the efficacy of current projects. There is also a — somewhat loose — community of both technical and social science researchers that has grown up around the annual ICT4D conferences.

## The Role of ICT in Development

In the past few decades, information and communication technology (ICT) has transformed the world. Its potential for reducing poverty and fostering growth in developing countries has increased rapidly. Mobile telephones provide market links for farmers and entrepreneurs. The Internet delivers vital knowledge to schools and hospitals. Computer improves public and private services and increases productivity and participation. By connecting people and places ICT has played a vital role in national, regional and global development and holds enormous promise for the future. It has been over 20 years since the first telephone company was privatized, 10 since the World Wide Web emerged, and 5 since the telecommunications bubble burst. How has ICT driven and evolved in response to these and other events? What has been learned about ICT trends and the policies that shape an information society? And how can further advances be fostered and facilitated? When tailored to needs, (Freeman 2002).

ICT has the potential to raise growth in businesses of any size and countries at any stage of development. Related, but even more important, is ICT's role in reducing poverty and inequality, both within and across countries. Thus it is crucial that ICT move closer to the mainstream of development economics and policies- nationally, regionally, and globally. Given ICT's far-

reaching payoffs-and the many efforts required to achieve them this report is aimed not only at ICT experts but also at the broader development community (Kery 2003).

## ICT plays a vital role in advancing economic growth and reducing Poverty

Research in the 1960s and 1970s showed how telecommunications strengthens economic production and distribution, public service delivery, and government administration. In the 1980s information became recognized as a crucial factor of production, along with capital and labour; in the 1990s globalization and the increasing information intensity of economic activity, coupled with rapid technological change and increase in their competitiveness have promoted growth and expanded opportunities for poor people in developing countries. ICT is an essential part of national infrastructure and private sector potential. It can create business opportunities, especially for companies located far from urban centers, and improve links among firms, suppliers, and clients.

When used well, the Internet can be especially valuable for firms in developing countries because it provides opportunities to connect to markets and participate in trade, domestic and foreign. A recent survey of 56 developed and developing countries found a significant link between Internet access and trade growth—with the greatest benefits accruing to developing countries with the weakest trade links (Freeman 2002).

As with other factors of production, such as capital and labor, ICT use differs based on business size, ownership, and export orientation. In developing countries Web site and computer (though not necessarily email) use are more common among service firms than firms engaged in manufacturing, agro industry, and construction. Web site and e-mail use are especially high in the telecommunications, information technology, real estate, and hotel and restaurant industries, and among exporters and foreign-owned firms. Among regions, firms in central and Eastern Europe use such technology the most, reflecting its correlation with national income. But Web sites and e-mail are also widely used in some low-income countries--Bangladesh, Kenya, Moldova, and Tanzania--suggesting that ICT is not a luxury (Hubert 2011).

ICT is also crucial to sustainable poverty reduction, because it makes a country's economy more efficient and globally competitive, improves health and education services, and creates new sources of income and employment for poor people. In addition, ICT enhances social inclusion and promotes more effective, accountable, democratic government, especially when combined with effective freedom of information and expression.

## Conclusion

Information and communication technology has played obvious roles in global development process by making the world a potential and continual emerging global village for business and social interactions. The challenge of the dynamic nature of ICT which sometimes makes it difficult to have more accurate data on its impact on societal development remains to be contended with. However, even if tracking the process with data its challenging, the obvious positive impact of ICT on development process, even in developing economies cannot be denied

## Recommendations

1. Government should developed and support implementation of ICT policies, by stating policies that would enhance the use of ICT
2. Government should improve the capital investment in ICT, by providing the facilities that will enhance the use of ICT
3. It is recommend that development partners should support organization the implementation of ICT policies and strategies, to facilitate the use of ICT equipments
4. It is also recommend that training institutions should provide ICT training within national policy framework in order to facilitate the use of the equipments

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