
INFORMATION AND COMMUNICATION TECHNOLOGY: A PANACEA FOR HEALTH AND ECONOMIC DEVELOPMENT OF NIGERIA

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Abstract

Information and Communication Technologies (ICTs), are defined as tools that facilitate communication, processing and transmission of information by electronic means. It is an indispensable tool for globalization. ICTs have potential to increase information flows, the paper looks at the concept of information and communication technology vis-à-vis their usefulness in health and economic development of Nigeria. It out Line good practices for using ICTs in these sectors. Examples include improved dissemination of public health information, enabled remote consultation, diagnosis and treatment through telemedicine, enhancement of effective health research as well as improving the efficiency of administrative systems in health care. Others include faster business transactions due to electronic money transfer, increase in productivity, and promotion of new economic and social opportunities as a result of the wireless platform. In addition the paper discusses the major constraints and challenges facing effective use of ICTs in the development of health and economic sectors. These among other things include incessant power failure, poor exploitation of ICT sources in educating the masses on health and economic issues. Recommendations made include provision of ICT gadgets, subsidizing the cost of internet services and providing alternatives sources of power supply.

Key Words: ICT, Panacea, Health and Economic Development

There is no gainsaying the fact that the world is fast becoming a global village and the effects of information communication technology on health and economic development in the information age need not be over-emphasized. If the economy must be meaningful and relevant to the contemporary time. The World must channel their resources, business, educational programmes and library services in such a way to keep pace with the new ideas Information and Communication Technology pose in the country.

Information and Communication Technology, (ICT), simply means the convergence of computer system with telecommunication network to acquire, process,

store, retrieve, analyze and transmit data and information. But in a broad sense, it encompasses information storage tools such as compact disc, magnetic tapes, computer files, data bases and networks, (Omekwu 2004).

Virkus (2007) defined ICT as any technology that facilitates the processing, transfer and exchange of information. World Bank (2008) stated that ICT “is a set of activities that facilitate the capturing, storage, processing, transmission and display of information by electronic means”. On the other hand Ifidon, (2006) opined that it is a study of knowledge and know-how, required for executing a given activity and it entails information, skills and processes necessary for the execution of such activities in the society.

Obviously, the new wave of technology driving virtually every activity in the world today is Information and Communication Technology. ICT plays an important role in the work and personal lives of the citizens. It encompasses a wide range of technology like telephone (Landline and Cellular phones), computer, satellite, telex, fax, radio, television, software, projectile video, bulletin board and microware etc. It has accelerated the rate of globalization in the universe. The force of market has been facilitated by advances in the new technology bringing about tremendous transformation in virtually every aspect of public, private and individual organization and giving rise to a more efficient and competitive system.

The Usefulness of ICT in Health Development

Integrating the use of ICTs into existing health systems has helped to improve the delivery of health care in a number of ways (Rodrigues, 2000a, 2000b; Polanskg.j 2001). World Health Organization affirms that the use of ICTs in health is not merely about technology, but a means to reach a series of desired outcomes, such as health workers making better treatment decisions; hospitals providing higher quality and safer care; people making informed choices about their own health; and people having better access to the information and knowledge they need for better health e.t.c. (Dzenowagis, 2005). This section discusses the role of ICT in meeting these benchmarks.

Uses of Telemedicine

According to the International Telecommunication Union (ITU, 2005), telemedicine is a powerful tool for improving health care delivery that has been successfully implemented in pilot projects in many countries. Telemedicine involves the use of medical information transferred from one site to another through electronic communications, to improve patient’s health care, including diagnoses and treatment. (WHO, 2007). Although telemedicine can be highly effective, Greenberg, (2005) notes that cost is an issue: “in its high-tech implementations, it is unlikely to be cost-effective or affordable in widespread use. Used wisely, however, telemedicine can be a cost-effective method that richer countries can employ to aid capacity building in the health care systems of poorer countries. (Johnson,k,Kennedy c and Murdoch I (2004). A study on the use of teleophthalmology found that the technology transfer was effective in

reducing the burden of eye disease and that practitioners in South Africa also learned novel procedures that could help future patients and improve cost-effectiveness. The use of teleconsultations has been assessed in a number of specialties (Campenella, N. & Hannafin, R.D (2004). Some, such as laboratory, dermatology, and cyto-pathology teleconsultations, are not time consuming and are reliable.

Studies have demonstrated efficacy of telemedicine in health care delivery. For example in rural areas it has been used to improve maternal health (Martinez, 2005), and in urban areas ICT has been used to contribute to the prevention of mental health (Finquelievich, 2000). Similarly, distance education has been used to encourage breastfeeding (Musoke, 2001). Infact in Africa, most people are based in rural areas, and the people come to towns and cities for their health care in huge numbers and at enormous cost. ICTs are beginning to be used innovatively to bring health care to the people in a more effective manner. Telemedicine is one way this can be done.

In Bangladesh, a project was developed to register, schedule, and track immunization of children. Based in the city of Rajshahi, a computerized system was introduced to replace a manual record-keeping system (Ahmed, 2004). Over a period of three years, the new system was able to increase immunization rates from around 40 percent to more than 80 percent. The project reduced the time health workers spent searching for records;

Access to Health Information

In a key paper produced as part of a global review on access to health information, Godlee F. and Sowunmi R. (2004) concluded that “universal access to information for health professionals is a prerequisite for meeting the MDGs and achieving Health for All. Lack of access to information remains a major barrier to knowledge-based health care in developing countries (as well as in many parts of the ‘developed’ world). ” Using ICTs effectively offers the promise of changing this situation for health workers. In Nepal, the unique ability of radio to reach, entertain, and educate isolated, less-educated, rural health workers and communities made it an ideal medium for improving the quality of health services and support the continuing medical education of grassroots health workers, (Ballantyne, 2002). In Uganda use of a VHF radio and mobile walkie-talkies to help empower a network of traditional birth attendants, to partner with the public health service centers to deliver health care to pregnant women. This resulted in increased and timelier patient referrals, as well as the delivery of health care to a larger number of pregnant women (Musoke, 2001). It also led to a reduction in maternal mortality from 500 per 100,000 in 1996 to 271 per 100,000 in 1999.

Information and Communication via the Internet

There are increasing numbers of health-focused portals and information sites aimed at providing information to consumers as well as sites dedicated to health workers, individuals and a range of health-related communities of interest. Navigating

these information sites and determining which are worthwhile is becoming an increasing challenge for patients and health workers alike. A systematic review of "Web based therapies" intended to encourage an individual's behaviour change found that 16 of 17 studies revealed the outcomes of improved knowledge and/or improved behavioral outcomes for participants using Web-based interventions (Wantland, 2004). Outcomes included increased exercise time, knowledge of nutritional status, and slower declines in health. Bessell and her colleagues (2002) concluded from another systematic review that there were some positive effects on health outcomes from the use of information sites on the Internet.

ICTs are also being used to improve access to communications for health centers and the communities they serve. Research in Zambia, Botswana, and Mozambique found that access to information about HIV and AIDS was a major concern (Geers and Page, 2005). Recognizing that it was not possible to provide individual access to such information, the study recommended developing community access points (CAPs) which could act as HIV and AIDS "knowledge centers," telecenters, and local service providers. Use of such services could be increased by either basing or placing such centers close to primary client organizations – those that were likely to make extensive use of the service – such as the media, schools, and health clinics.

Another form of community access comes from the availability of village-level mobile phones. In Bangladesh, for example, such phones have helped increase household income and led to improvements in food security, as well as investment in health and education, (Keogh and Wood, 2005). While not directly targeted at the health sector, the Bangladesh example demonstrates the way an integrated approach to using ICTs can contribute to the achievement of several MDGs – reduction of poverty and hunger, access to basic education, improvement in child health – at the same time. Similarly, reducing illness can have a very direct impact on livelihoods. Every day that is not spent being ill or taking care of a child sick with a recurring disease such as malaria can be used productively (Greenberg, 2005).

The Usefulness of ICT in Economic Development

The huge advancement in Information and Communication Technology has tremendously accelerated the process of globalization. Okorie (2005) aptly orally that the development and spread of technologies like internet, e-mail, low-cost international phone services, mobile phones and electronic teleconferencing etc have made the world become more interconnected. People can share knowledge without having to be in the same place. Communication network has made life very simple. All the major development, poverty alleviation and related issues have been linked in one way or the other with the phenomenon of globalization via ICT (Onitiri, 2001).

Information and Communication Technologies have drawn attention to the opportunities to expand exports attract foreign investment and acquire modern

technology of doing things. The knowledge from ICT has brought about increased human technical and social know-how as well as transfer of successful policies and programmes.

Individual, families and societies can now get accurate and timely information which enhance their productivity and empowerment training and education (Synder and Tadesse, 1995). It also enhances commerce and trading by reducing the time lag, face to face interactions, long distance travel and the risk of carrying huge sums of money across border for international trade. Money can be paid for goods and services through electronic money transfer such that trading becomes faster and easier throughout the world.

ICT provides economic opportunities to both urban and rural population; it increases productivity and makes the market work more efficiently, although the magnitude of the impact on economic growth is likely to be different. The fact that virtually all new mobile customers in the coming years will be in developing countries and more specifically in rural areas means that the ICT platform is reaching population with low levels of income and literacy.

ICT is becoming the largest distribution platform of providing public and private services to millions of people in rural and poor areas. Market information, financial services, education and health service had largely been unavailable in those areas in the past due to lack of connectivity of any kind. Now the wireless platform is promoting new economic and social opportunities at all levels for the poor population. Internet has many sites that can expose young people to different cultures. Technology innovations like computers, computer software, web browsers and servers have contributed to globalization by supplying infrastructure for world connection. This interconnection has impacted on all aspects of social, cultural, health, economic and political life of people (Akpan, 2004).

In Bangladesh, the installation of telephones in rural territories in increased the residents income by 25% over five years Mashi (2006) in a study of six week African countries, find a relationship between ICT expansion and GDP growth for the period 1997 – 2003.

It is a well established fact that telecommunication is infrastructure and services in the age of information and transnational communication. ICT is the backbone of business activity, productivity, trade and social development. It is a prerequisite in developing countries economic success. The ability of developing countries to thrive in global economy depends on the nations knowledge of ICT and their ability for proper implementation. (Agagu, 2006)

Some of the developing countries such as South Africa, Nigeria, Ghana, India and China have been making progress in telematics – the convergence of

telecommunication by linking production to industrialization. Some nations, such as Malaysia, Indonesia and Singapore have all adopted a strategy which aims at industrialization through applications of micro electronics, computer products, services in management, finance, health care, distribution, manufacturing as well as education. The success of these few is already having an impact on the world production patterns, trades and both the social and political environment (Kosakowski 2005)

Challenges (Barriers/Constrains) to Health & Economic Development

The fact is that despite obvious advantages of information and communication technology, particularly in the acquisition, storage, retrieval and communication of information in the contemporary information age, libraries in developing countries including Nigeria are still technologically backward. The modern Electronic library, otherwise called the Digital virtual or library without walls internet, cable television or some other types of electronic connection are not functioning as expected (Selnow, 1998). Mulla (2006) sums up the advantages thus “libraries have witnessed a great metamorphosis in recent years both in their collection, development and in their service structure”.

Ahiauza (2003) is of the opinion that critical advances in information and communication technology (ICT) have changed the way people live and do business so much that nearly all electronic gadgets these days have processors. These range from wrist watches, pocket calculators, type writers and televisions etc.

Inadequate funding: Some of the ICT projects in the country are not properly funded and are allowed to decay. For instance the federal government in collaboration with School Net Nigeria established five pilot internet centers in each of the states of the Federation, including Abuja. But these internet centres are not functioning, especially the ones in Anambra State. Why should such huge investment be allowed to decay?

Inadequate power supply is a very serious problem as ICT equipment is powered by electricity. Many ICT Centres such as cyber café and other computer related businesses have been on steady decline due to inadequate or absence of power supply. Emeagwali, (2009) opined that good number of these establishments have folded up due to incessant erratic power supply.

Cost of internet services is on the high side, mainly attributable to high tariff charged by the service providers. In addition, since most cyber cafés make use of generator sets due to power outage, this resulted to increase of the cost of internet services. This has resulted to folding up of many internet centers. Esu, (2005) identified high fees charged by internet service providers as the cause of poor participation in ICT activities.

Slow network is a problem of ICT usage in Nigeria This has made ICT services expensive for the users, the slowness of network is attributed to a narrow band width and poor telecommunication infrastructure. Additionally, inadequate ICT infrastructure is also a big challenge to access to ICT facilities. Few existing cyber café centers cannot take care of numerous Nigerians who cannot afford personal internet facilities. Free access to internet facilities is desirable in a nation with low income per capita. Some Nigerians cannot afford to buy phones as recharge cost is bound to put them off.

Okonkwo, (2008) identified another challenge in the development of ICT as inadequate personnel to operate the system and shortage of man power to cater for the technical know-how of the new age. Uwaje, (2008) on the other hand suggested that Illiteracy is a major constraint in ICT development. According to him a good number of people in Nigeria and Africa as a whole cannot read and write. This group of people may not be comfortable with ICT education. They need mass literacy program to bring them up. Similarly, most of the existing ICT facilities are concentrated in urban centers at the neglect of rural communities.

The global use of ICT have greatly exposed children and youths to many programmes which have negative effects on their values and behaviours. For example exposure to internet pornography has put them at increased risk of development of sexually deviant tendencies (Awake, 2002). For the fact that many of the children and youths are gaining more access to the internet, they can run into information that could corrupt their minds and make them dishonest.

Members of this golden age have no choice than to use these technologies if they are to remain relevant to themselves and to society. Nigeria and African as a whole form part of this ICT society and can hardly survive if they are not equipped enough intellectually, socially and educationally to join the ICT band wagon.

Conclusions

Information and communication Technology is so crucial to the information management business in recent times that librarians, information managers and health educators cannot afford to stay aloof in the use of ICTS. Essentially, there ought to be a strong institutional support by way of providing regular financial assistance for infrastructures and training of librarians, health-educators and businessmen. The challenges are obviously around the world and if only Nigerians can come to terms and grapple with the challenges and effect changes in the policies and services, the sky will be their limit.

Now that the technology is here with everybody, including the government, various organizations, business world, schools and universities should brace up for the new way of communicating and transmitting information with the government, taking the lead.

If well implemented in the country and other parts of the world, where the ICT has a foot print, it will create ICT jobs, boost knowledge, economy and bring government nearer to the grassroots, because it can penetrate everywhere. It will also help bring down the cost of internet services and explosion of broad band internet services and allied technologies.

Recommendations

The following recommendation shall be taken into consideration.

The most serious ICT problem in Nigeria today is inadequate power supply. Something very urgent should be done in this sector, if Nigeria hopes to meet up with the goals.

The cost of internet services should be subsidized to make it affordable to poor Nigerians. If possible the services should be made free in some cases. This is bound to assist in solving the problem of internet access.

There is urgent need to employ professionals in various field of information communication technology to train people in production and handling of technological facilities. This will help nation achieve their dream and solve the problem of inadequate man power to cater for technical know-how of the new age.

Ministry of Education, policy makers and government should organize seminars, conferences and workshops on the need for ICT Literacy. Career retraining programmes should be mounted by the government and non governmental organization from time to time which offer computer courses for free or at a considerably low fee.

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