

102

INFORMATION AND COMMUNICATION TECHNOLOGY AS A CATALYST FOR PART-TIME STUDIES

By

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Abstract

It is a known fact that, despite the rapid increase of information communication technologies in developed countries, there exists a digital divide between, rich, poor, urban, and rural/remote areas in developing countries. As the pace of the technological revolution increases, so does the digital divide? The majority of the more than 6 billion people who inhabit our planet have been completely shut out of the digital revolution and the promise it holds. And this situation is clearly visible in the under developing countries of the world. ICT is not a panacea for all the problems of developing countries. However, the digital divide has important implications for these countries as the uneven distribution of ICT access may mean that segments or groups who have no or limited accessibility to these technologies may be denied of socioeconomic opportunities as the case maybe. This implies that the digital divide, as commonly known, signifies the lack of access to the ICT between the "haves" and the "have not's" In this paper, the writer will ex-ray this gap and proffer some solutions and benefits of Information Communication Technology

Keywords: *ICT, Digital Library, Digital Divide, Access, Technologies*

1. Introduction

Access to information and knowledge are fundamental for education and development as well as being an essential requirement for improving the quality of life for people living in many under-developed places where the population has not yet reached a high level of economic and social development. Libraries play an important role in the educational and research development process. "Libraries provide access to information on ideas and works of imagination in any medium and regardless of frontiers. They serve as gateways to knowledge, thought and culture, offering essential support for independent decision-making, cultural development, research and lifelong learning by both individuals and groups. Libraries and information services contribute to the development and maintenance of intellectual freedom and help to safeguard democratic values and universal civil rights. Consequently, they are committed to offering their clients access to relevant resources and services without restriction and to opposing any form of censorship" (IFLANET, 2004) A digital library can provide access to many of the knowledge networks around the world, which is a necessary component of any research experience. Levels of access to information and communication technologies vary from individual to individual, community to community, and country to country; this is referred to as the "Digital Divide". In addition, this disparity is not necessarily confined to computer or Internet use but may involve accessibility to other forms of information such as fixed-line telephone, mobile phone, and pager. This is what gave birth to the term 'digital divide', which encompasses a broader and more vast meaning than 'information gap'. Today, 3.2 billion are connected to the Internet; of which 2 billion are from developing countries. As the Information Telecommunication Union's report puts it, for every Internet user in the developed world there are two in the developing world. This demonstrates the digital divide which, according to the OECD, "refers to the gap between individuals, households, businesses and geographic areas at different socio-economic levels with regard both to their opportunities to access ICT and to their use of the Internet for a wide variety of activities". The digital

divide between the developed and the developing world could be seen in the mobile broadband penetration rates, 84% in developed countries and 21 % in developing countries, as well as the rates of the fixed broadband penetrations, 27.5% in developed countries and 6% in developing countries. Dynamic Report, ITU (2013).

As we are told in information society, applications of information and communications technologies (ICT) are making dramatic changes in economic and social development that these tectonic economic and social changes have been characterized by terms such as "knowledge economy" and "learning society", conveying the notion that knowledge and learning are now at the core of economic productivity and social development. Nowadays information communication technologies are the nervous system of contemporary society, transmitting and distributing sensory and control information, and interconnecting myriad interdependent units. These technologies consists Electronic Mass Media such as Cable Television, pay Television Services, Interactive Television, Wireless Cable Systems, Streaming Media, Radio broadcasting , Direct Broadcast Satellite, Computers and Consumer Electronic such as Multimedia computers Video Games, The Internet and the World Wide Web, Office Technologies, Internet Commerce, Virtual and Augmented Reality, Home video and Digital Audio and Technology and Satellite technologies such as Local and Long Distance Telephony, Broadband Networks, Residential Gateways and Home Networks, Satellite Communication, Distance Learning , Wireless Telephony, Video conferencing. *Today, many people could not imagine daily life without the use of increasingly sophisticated information and communication technologies (ICTs), from television and radio to the mobile telephone and the Internet. Yet for millions of people in the world's poorest countries, there remain a "digital divide" excluding them from the benefits of ICTs asserted Anna Koffi (2004) and Susan Crawford (2013).*

Digital divide is a term that become popular among concerned parties, such as scholars, policy makers, and advocacy groups, in the late 1990's , is used to describe the growing gap, or social exclusion, between those

who have access to the new services of the information society, and those who do not. This can be for a number of reasons: access to education or training, lack of money to buy the required equipment, or lack of access because of the problems obtaining the required communications links or services to get online. Some states have produced good research than others. Although accessing to Internet is not the only criteria and other factors such as the quality of connection and auxiliary services, processing speed and other capabilities of the computer used must be considered. SciDevNet (2014). It is clear that developed nations with the resources to invest in and develop ICT Infrastructure are reaping enormous benefits from the information age while developing nations are trailing along at a much slower pace. There are many challenges faced by governments, political leaders, and business entrepreneurs around the world, especially in developing countries. Governments, industries, non-government organizations and policy makers have made little progress in expanding internet connectivity so internet is distributed unequally across nations.

Attempts to bridge the digital divide include a program developed in Durban, South Africa, where very low access to technology and a lack of documented cultural heritage has motivated the creation of an "online indigenous digital library as part of public library services (Grayling, E.; Zulu, S. 2010). This project has the potential to narrow the digital divide by not only giving the people of the Durban area access to this digital resource but also by incorporating the community members into the process of creating it. This paper, therefore, will ex-ray the gap created by this divide and proffer solutions at mending the gap. It will also try as much as possible to show the benefits of communication Technologies in creating an enable palace to bridge the Digital Divide, especially in Nigeria as a developing nation.

2. Literature Review

The review of this research will be presented in this manner so that it will capture most the objectives of this paper.

It is becoming a relative inequality between those who have more and those who have less. Traditionally, the nature of the divide has been

measured in terms of the existing numbers of subscriptions and digital devices. Given the increasing number of such devices, some have concluded that the digital divide among individuals has increasingly been closing as the result of a natural and almost automatic process opined Hilbert (2013). Another attempt to narrow the digital divide takes the form of OLPC. (2009) this organization, founded in 2005, provides inexpensively produced "XO" laptops (dubbed the "\$100 laptop", though actual production costs vary) to children residing in poor and isolated regions within developing countries. Each laptop belongs to an individual child and provides a gateway to digital learning and Internet access. The XO laptops are specifically designed to withstand more abuse than higher-end machines, and they contain features in context to the unique conditions that remote villages present. Each laptop is constructed to use as little power as possible, have a sunlight-readable screen, and is capable of automatically networking with other XO laptops in order to access the Internet as many as 500 machines can share a single point of access.

2.1 Digital Divide in Developing Countries

Despite rapid increases to information communication technologies in developed countries, there exists a digital divide between, rich, poor, urban, and rural/remote areas in developing countries (see table 1 below) The challenge of expanding the telecommunications network in developing countries to reach the whole population needs to overcome two separate 'gaps'. ... These gaps are The market efficiency gap and the access gap Eszter Hargittai. (2003).

TABLE 1: World Internet Users and Population Stats

World Regions	Population (2005 Est.)	Internet Usage, Latest Data	Usage Growth 2000-2005	World Users %
Africa	896,721,874	16,174,600	258.3 %	1.7 %
Asia	3,622,994,130	323,756,956	183.2 %	34.5 %
Europe	731,018,523	269,036,096	161.0 %	28.7 %
Middle East	260,814,179	21,770,700	311.9 %	2.3 %
North America	328,387,054	223,392,807	106.7 %	23.8 %

Table 1, source: http://www.itu.int/newsarchive/wtd/2004/unsg_message.html

To address the divide "The Gates Foundation" began the "Gates Library Initiative". The Gates Foundation focused on providing more than just access, they placed computers and provided training in libraries. In this manner, if users began to struggle while using a computer, the user will be in a setting where assistance and guidance were available. Further, the Gates Library Initiative was "modeled on the old-fashioned life preserver: The support needs to be around you to keep you afloat" said *Blau, A (2002)*.

The article by W. Edward Steinmueller (2001) boldly suggests that ICTs have the potential to support the development strategy of "leapfrogging", whereby developing countries could bypass stages in the accumulation of human capabilities and fixed investment previously required for their economic development, and for narrowing the gaps in productivity and output levels between industrialized and developing countries. He analytically and empirically supports the claim that technological leapfrogging in the production and use of ICTs is feasible, opening up the prospect of narrowing not only the digital divide but also the economic divide between the developing and industrialized countries. Finally, though this issue of the Review focuses exclusively on the dig

In nations where poverty compounds effects of the digital divide, programs are emerging to counter those trends. Prior conditions in Kenya - lack of funding, language, and technology illiteracy contributed to an overall lack of computer skills and educational advancement for those citizens. This slowly began to change when foreign investment began. In the early 2000s, The Carnegie Foundation funded a revitalization project through the Kenya National Library Service (KNLS). Those resources enabled public libraries to provide information and communication technologies (ICT) to their patrons. In 2012, public libraries in the Busia and Kibera communities introduced technology resources to supplement curriculum for primary schools. By 2013, the program expanded into ten schools. *Pingo, Z. B. (2015)*. Others point to persistent lower levels of connectivity among women,

racial and ethnic minorities, people with lower incomes, rural residents, and less educated people as evidence that addressing inequalities in access to and use of the medium will require much more than the passing of time *Kathryn Zickuhr. (2013), Eszter Hargittai, (2003) and Susan Crawford (2013)*. Recent studies have also measured the digital divide, not in terms of technological devices, but in terms of the existing bandwidth per individual (in kbit/s per capita) *Martin Hilbert (2013)*. Investment in ICTs and effective applications of these technologies for economic growth are likely not to be straightforward for developing countries. One of the major challenges confronting developing countries has been that investments in ICT compete with the provision of basic necessities for the poor *Ochieng, (2000)*. Investment in ICTs and their enabling infrastructures constitute an expensive affair for developing countries, which tends to bear a high burden of debts *Y. Chen, Farnelli, Johansson, (2004)*. In addition, such investment will involve a long pay-back period because of the nascent demand conditions in their market, which usually are weak or inadequate

According to *Mossberger, Karen; Tolbert, Carolina J.; Gilbert, Michele (2006)*, Connecting to the Internet creates another set of means by which to achieve repeated interactions. ICTs and Internet connectivity enable repeated interactions through access to social networks, chat rooms, and gaming sites. Once an individual has access to connectivity, obtains infrastructure by which to connect, and can understand and use the information that ICTs and connectivity provide, that individual capable of becoming a "digital citizen".

Also since gender, age, racial, income, and educational gaps in the digital divide have lessened compared to past levels; some researchers may suggest that the digital divide is shifting from a gap in access and connectivity to ICTs to a **knowledge divide** asserted *Graham, M (201)*. A knowledge divide concerning technology presents the possibility that the gap has moved beyond access and having the resources to connect ICTs to interpreting and understanding information presented once connected *opined Sciadas, George. (2003)*.

As the technological digital divide is decreasing between those with access to the Internet and those without, the meaning of the term digital divide is evolving.¹¹¹ Previously, digital divide research has focused on accessibility to the Internet and Internet consumption. However, with more and more of the population with access to the Internet, researchers are examining how people use the Internet to create content and what impact socioeconomics are having on user behaviour suggested by Graham, Mark (2014) and Correa, Teresa. (2008).. New applications have made it possible for anyone with a computer and an Internet connection to be a creator of content, yet the majority of user-generated content available widely on the Internet, like public blogs, is created by a small portion of the Internet using population. Web 2.0 technologies like Facebook, YouTube, Twitter, and Blogs enable users to participate online and create content without having to understand how the technology actually works, leading to an ever-increasing digital divide between those who have the skills and understanding to interact more fully with the technology and those who are passive consumers of it asserted Reilley, Collen A. (2011) many are only nominal content creators through the use of Web 2.0, posting photos and status updates on Facebook, but not truly interacting with the technology.

2.3 Nigerian Experience

According to *Ogundipe T (2015)* at a training he recently participated in, one of the facilitators did say that anyone who is not on the internet in 2015 is deliberately hiding. This was very shocking and revealing because it could mean that a good number of potential actors may not know that access to the internet can be reliably said to be limited to only a small group of urban elite. According to Alliance for Affordable Internet (A4AI)'s Affordability Report 2014, "almost 60% of the world's populations most of who live in developing countries are offline. Close to 70% of households in the developing world do not have Internet access, and while Internet penetration rates have increased dramatically in recent years, the pace of change seems to be slowing."¹¹² The report particularly identified that women belong to certain groups that are far

less likely to be able to connect to the Internet affordably. Other groups identified are those living in developing economies and those living in rural areas. Sum this up for the average Nigerian woman, and the picture becomes very dismal. Of the two billion people in developing and emerging countries that are priced out of accessing the Internet, women and rural communities are the least likely to be able to connect affordably.

2.4 Gender Digital Divide In Developing Countries

In a focus group discussion which took place in Ajegunle community Lagos, Nigeria, in February 2015, involving 23 women between the ages of 30 and 50, only 3 of the women use the internet to one degree or other and only one of them uses it regularly for social interaction and for staying informed. The other 2 of the 3 who use the web go after it only when they need information. Four of the women own smart phones and only one of them owns a desktop computer. Over half of the group struggled to comprehend the meaning of such words as "the internet, "the web" or "browsing." This would seem very strange because Lagos is the commercial nerve centre of Nigeria, with a teeming population estimated at about 12 million. Yet, in one of the most popular and most populous slums in Nigeria, majority of the women go about their struggle for survival, completely cut off technology and the web. One of the women asked him, as the writer struggled to describe web-enabled ICTs, whether he was speaking of a typewriter. Another woman responded to her: 'No, I know what she is speaking of. I have seen it with my son.' could not decipher what device her son used, or what exactly he does on but one thing that rang true; literacy is a big issue and so is cost cost of devices and cost of internet access.

We found out from those who use the internet how much they spent on data in a month, on the average. This is between N1, 500 (\$7.50) and N2, 000 (\$10) per month. Many of the women are not able to afford this. The same barriers of poverty and illiteracy they face when seeking access to training and education are the same now responsible for the rise of this gender-based digital divide.

The Lagos State Ministry of Women Affairs and Poverty Alleviation, in their 2013-2015 Medium-Term Sector Strategy (MTSS) document, listed five laudable goals and fifteen programs aimed at alleviating unemployment and poverty issues amongst women in Lagos State. None of these programs includes empowerment through web-enabled ICTs. Generally, the role of technologies in empowering women and girls is yet to be fully appreciated on the African continent. Technology is key to overcoming the barriers that women and girls face in the first place. Women cannot be empowered without quality access to information, and ICT is nothing without access. And access goes beyond availability of ICT infrastructure and web-enabled devices, to understand the benefits of web-enabled ICTs.

Becoming technologically skilled can play a major role in enabling women to overcome poverty. Access to web-enabled ICTs can be essential for women entrepreneurs in starting and growing a business, in getting jobs and being competitive in the job market. Access to social media is a particularly effective way to reach out and mobilize at the grassroots level in campaigns against gender-based violence. ICTs can also allow grassroots women's movements to organize public actions and reach out across borders to mobilize international support.

In terms of communication, women can benefit from faster and cheaper communication, which can facilitate and strengthen relationships among family, friends, and business-related social networks. Unfortunately, mobile phones have also been a source of conflict between spouses, which may have the inadvertent effect of reinforcing traditional gender power differentials. There have been anecdotal accounts of husbands dictating women's use of mobile phones and reports of mistrust and jealousy that have resulted in physical and verbal abuse. As such, "new technologies can become another aspect of oppression of women by men and a source of inequality between them" submitted by Melhem, S.; Morrell, C.; Tandon, N. (2009.)

In short, access to web-enabled ICTs has the potential to radically improve the lives of women, safeguard their rights, and position them as key actors in a rapidly changing global economy. The world has spent some time focusing on the subject of the global digital divide, at least from the first World Summit on the Information Society. It is important that all actors focus on this rising second digital divide. Women are half the world's population and the first educator for most children; we must connect them with the opportunities that web-enabled ICTs provide.

1. - Conclusions

The fact has been noted that information communication technology is viable medium to bridge this ugly situation created by the Divide. This could be an eye-opener to the developing so many countries of the world, especially in Africa where majority are still illiterates. Their leaders should expunge themselves from greed, avarice, and misappropriation in order to provide some socioeconomic ventures, so that, such issues like these technologies could be provided for the eventual development of Africa as a continent and other developing countries of the world. Otherwise the advanced can stop developing their environment rather they grow from strength to strength thereby creating more gap for the Digital Divide to travel faster than what we know.

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