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# The growth of information communication technologies (ICTs) in less developed countries: Problems and prospects

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### Abstract

Information and Communication Technology (ICT) has been a major topic around the globe since its inception. The realization that it has the capacity to change culture, influence thoughts and usher in a world devoid of distance and barriers makes it more interesting. The concern today is that the West (developed countries) is conversant with the terrain while the South (developing countries) is on a sight-seeing mission. This paper discusses the importance of ICT and impediments of its growth in less developed countries. Data were obtained through review of relevant literature and global statistical records. The result of which shows that fewer people in less developed countries especially Africa have access to the internet and its usage is grossly low compared to the Western world.

**Keywords:** Africa, countries, developed, global, ICT, internet, Nigeria, village

### Introduction

New technologies have increasingly brought changes to the mass media as was correctly predicted by Marshall McLuhan, Daniel Bell, as well as Joseph Licklider many decades ago. The invention of the movable type and high-speed presses was the first breakthrough in the communication industry. It made printing technology an attractive enterprise and the most dominant form of mass communication at the time. Motion pictures, radio and television broadcasting followed suit and became very popular as well as the most patronized ahead of Newspapers and the dying Telegraph. This is because the audience realized at the advent of the then new media that its messages delivers instantaneously and its effect was to a large extent immediate, a reminiscent of the hypodermic needle theory.

Going forward, a lot of advancements have taken place in the media landscape which have tremendously widened its horizon. Today, the print and the electronic media are merging with new digital technologies driven by the internet to create “the age of the new media.” This is a bold move from the old way of doing things to the modern way which is technology driven. The coming together of these technologies, known as convergence gives room for an interactive process where-by information sources get instant feedback from receivers while messages can also be stored and retrieved in electronic form.

Defleur and Dennis (1998) <sup>[2]</sup> note that “without convergence, the new media would not be possible. That convergence or coming together has required revolutionary changes in the economic structure and operation of media industries. They must work together for new media to occur.” Here, the world is faced with the dynamics of media culture, a culture that blends together, interconnects devices and components to bring about a robust, user-friendly communication system as was never seen before.

Millions of internet users across the globe are online in banking, education and commerce. They access information and sieve elements that are not regarded as useful. They do business, learn and exchange ideas through the internet. This kind of “mass communication” brings to reality, Marshall McLuhan’s idea of the world being a “global village,” a world in which people encounter one another closely at all times, where distance will no longer be a barrier. According to Baran (2004) <sup>[1]</sup>, Marshall McLuhan’s idea was that new communication technologies would allow people become increasingly involved in one another’s lives’. McLuhan believed that the electronic media would permit the human tribe to become one family.” Okoro (2002), also explained that “the emergence of personal computer and improvements in telephone technology have pushed the computer into the

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world of mass media and opened up the frontier of online communication services in what is today metaphorically called the information super-high way.”

However, this global information and communication order reflects and represents an environment of the developed world where the population has maximum access to the internet which is not the case in less developed countries. Less developed countries experiences has proved that the ICT system does not flow with its pattern.

In this paper, the word “Third world” is replaced with “less developed countries” to show variation in technological advancement.

In less developed countries like Nigeria, “issues concerning information and communication arouse both passion and intense interest. This global invasion has not helped the Nigerian media to grow. The Nigerian media are affected negatively in many ways.” (Enahoro 2002).

Citing Gifford (1999), Enahoro notes “that the internet is the fastest growing medium which started in 1989 as a top secret military project in the United States of America whose aim is to create a secure computer network that could survive damage to part of its systems. In the 1980’s, the internet was established as an effective way for academics to share knowledge and by the early 1990’s, the general public were using it for education, entertainment and business.”

The number of people using the internet grew by about one million each month. Nearly 86.7% of all internet users are in developed countries with United States and Canada alone accounting for over 57% of the total. In contrast, internet users in the entire Africa account for only 44.4% of the global internet users.

If this represents the population of internet users in less developed countries, then the earlier assertion that ICT do not suit all cultures especially the less developed countries is not therefore in doubt.

### **Information and Communication Technology**

ICT has opened the door to enhanced information flow as well as improve shared ideas across international frontiers. It is a medium of mass communication that has greatly changed the behaviour of man. In fact, one way to describe it according to Rodney (2005), is that “it appears to be the largest, most uncensored communication equipment that has ever existed in human history.” For one thing, the internet is just growing with apparently no master plan for explanation. It speeds up mass communication feedback. It is instantaneous and interactive, allowing users more control in shaping their messages.”

The ICT is gradually changing the traditional systems of mass communication. Feedback in traditional mass communication is delayed but online feedback can be and very often is immediate and direct. It is more similar to feedback in interpersonal communication.

Baran (2004) <sup>[1]</sup> explained that “the internet would be a major factor in redefining the meaning of the mass media. He said, for instance, “When a news event occurs, interested parties immediately post messages on the internet for others to read. “He went further to argue that this new dimension represents a shift from traditional journalism where editors decide what to cover and send reporters to collect the facts. The consequences, no doubt would be the tendency to surf in the cyberspace with irrelevant materials for the ‘global village’ consumption.”

The traditional freedom of expression becomes excessive in the new information and communication order. There are no central location, no on and off button for the internet, making it difficult to control for those who want to do so. But for free expression advocates, however, this freedom from control is the internet’s primary strength. It gives its users immunity by making them relatively anonymous and that alone provides their expression even the most radical and vulgar ones a reasonable level of protection. Not only that, it has given a voice to those who would have otherwise been silenced. This anonymity according those who advocate for the control of the internet is a breeding ground for abuse. But again, opponents of control counter those claims and believes strongly that the internet’s affordability and ease of use make it our most democratic medium.

### **ICT in Less Developed Countries**

Technological advancement has also reared its head in less developed countries of Africa such as Nigeria, Ghana, Ethiopia etc. These are less developed countries that are dominantly in the equatorial zones and Southern hemisphere. These are countries with the highest number of people living below poverty line and afflicted with disease. They are countries with the least literacy level and technological growth. Which brought about their classification as less developed. That does not imply that these countries do not undergo a process of development which may eventually place them on the level of advancement.

To paint a worse picture, less developed countries depend on technologies of the developed countries of the West that are in most cases outdated and obsolete.

Information communication technology which is determined by relatively high literacy level is gradually developing in the less developed countries like Nigeria. In this part of the world, only a few people have access to the internet and its usage is very low, creating a wide gap between them and the developed world.

The current African ICT statues according to Defining Disparity (2019) states that, “in a population of over 816 million people, only one in four people have access to radio, one in thirteen have access to television, two in thirty five have access to a smart phone while one in one hundred and thirty have access to a personal computer, one in one hundred and sixty have access to the internet and one in four hundred have pay-television.”

In Africa, each computer with an internet or e-mail connection usually supports a range of three to five users. This puts current estimates of the total number of Africa’s internet users at around 5 to 8 million. This is about 1 user for every 250-400 people.

It is estimated that, the total number of computers permanently connected to the internet in Africa exceeded 35,000 in 2010. However, these figures have also become increasingly meaningless in Africa with the widespread use of .com and .net domains and the frequent use of internet address space behind firewalls due to the difficulties of obtaining public internet space. As a result, many of the African countries surveyed by network wizards show zero of hosts when in actual sense there might be hundreds if not thousands of machines connected to the internet there.

Furthermore, due to the relatively small number of people who can afford a smart phone, let alone computer, public access services are very much in demand in the urban areas.

As is most evident in Nigeria, Senegal and other less developed countries where telecom operators have relied on the private sector to provide public phone services. But also, in most other major urban areas, there is a rapidly growing number of kiosks, cyber cafes and other forms of public internet access such as adding personal computers to community phone-shops, schools, police stations and clinics which address low income levels by sharing the cost and maintenance of equipment and access among a large number of users.

Again, due to high international tariffs And lack of circuit capacity, obtaining sufficient international bandwidth is still a major problem in most countries and although conditions have improved over the years, users generally still have to contend with substantial congestion in peak times.

In 2002, Egypt overtook South Africa as the country with the most international bandwidth (550mpbs vs 380mpbs), following the lurch of government backed international connectivity provider, "nite-online."

Today, over 20 countries have links carrying 5mbps or more, and 13 countries have out-going links of 10mbps or more. Algeria, Botswana, Egypt, Kenya, Sudan, Tanzania, Tunisia and Zimbabwe.

Also of note is that the range in available international bandwidths is continuing to increase, with some eight countries still on international links that are less than the average small or medium sized business user in Europe or North America.

In the area of internet content and applications, the African web space has continued to expand. Countries are now striving to establish and host their own web server which represents the country officially or unofficially. Many governments in less developed countries are now taking digital technologies more serious but yet, there are still little discernible government use of the internet for existing administrative purposes especially in Africa.

According to International Development Research Centre (2003), "web presence is higher in some sectors, particularly those involved in tourism and foreign investment, and these often have more mature sites, aimed at developing an international market presence. Recent estimates for the number of personal computers in Africa put the total at about 7.5 million as at 2001, an average of about 1 per 100 people. A survey carried out by ACCTs states that "this maybe an over estimate by between 3 and 6 times, making the average closer to 1 per 500."

### **Changing the Paradigm**

Less developed countries have begun adopting measures aimed at making the benefits of information and communication technology broadly available to their people. For instance, in March 2006, an ICT provider, Intel, lunched its 'Discover the PC initiative' which focuses on delivering products and technologies that are specifically designed to meet the unique needs of people in developing countries.

It has an easy to use interface designed to introduce a new set of people to the world of technology. It also provides access to the full range of PC applications and experiences that allow people to find new ways to learn, communicate, work and play.

According to Baran (2004) <sup>[1]</sup>, "developing countries can adopt ICT from developed countries and reap the benefits of

higher economic growth and welfare without passing through all the stages of economic development as the developed countries have done." This is what researchers call "leap frogging". However, reaping ICT benefits require human capital in terms of technical education which less developed countries often do not have. Therefore, less developed countries must be determined to invest in technical education. By not passing through all the stages of economic development, the less developed countries have not gradually built the necessary educational institutions which presently, in developed countries, produce knowledge required to fully exploit ICT usage.

Furthermore, a cursory study of the African society, Nigeria in particular, shows that only a few urban dwellers have access to computers and fewer still to the internet. But there is significant progress in e-banking, e-commerce etc which makes trade a global activity.

Nigerians are now becoming aware that ICT is part of mankind, and should be embraced. Computer education is gradually advancing and many, though urban based, continue to enroll in institutions where basic computer application, especially word processing and recently internet usage are taught. This appreciable but slow growth reflects the character of the ICT use in less developed countries.

### **Impediments to Growth**

Constant electric power outages: Less developed countries pose a serious threat to the survival of ICT. These power outages last for many hours or days and have become a common occurrence in almost all towns and cities of less developed countries.

The road, rail and air transport networks are limited, costly and often in poor condition, resulting in barriers to the increased movement of people and goods needed to implement and support a pervasive ICT infrastructure. The general business climate for increased investment in less developed countries needed for ICT sector is not conducive because of non-transparent culture and political instability, exchange controls and inflation. Communication equipment and peripherals are changed at higher rates.

Above all, the literacy level among the population is extremely low, thereby creating a great scarcity of skills and expertise. Many cannot even read and write let alone understand the uses of ICT which is a recent breakthrough.

### **Recommendations/Conclusion**

- ICT infrastructure must be strengthened for increased economic and social activities to thrive in less developed countries.
- Governments of less developed countries should invest in computer literacy programmes including internet use so that their population could catch up with a highly technologically advanced world.
- Infrastructure such as road networks, rail and electricity must be put in place to enhance efficiency in ICT adoption.
- Less developed countries should intensify effort to reduce import duties on computers and subsidize it if the need be for everyone to have access.
- Less developed countries must invest heavily in human development and literacy so as to enable their population benefit from information, communication technology.

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