

Appraising the Role of the Internet in Mass Communication Research as an Apparatus for Development

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Abstract: Researchers in Nigeria have traditionally depended on conventional libraries, and information centers, where they can physically access their needed information. Their main source of information before now has been traditional sources such as books, journals, and newspapers, until recently when this process was altered by the invention of the internet. The Internet has simplified the research process. This paper therefore examines the role of the internet in mass communication research; how the Internet has become a tool for academic research, and also a publisher that Nigerian academics and researchers should maximally use. The study therefore, focuses on the role played by the Internet in academic research and highlights opportunities and challenges it presents. It explores the status of Internet connectivity in Nigeria and examines the role of the Internet as a medium for academic communication, collaboration, interaction, and publishing. It discusses the contribution of the Internet to the development of education and research in Nigeria. It analyses the status of mass communication research in Nigeria, and identifies some technical and general systemic problems. The study was anchored on the Technology Acceptance Model (TAM) and technology determinism theory. Using qualitative research design; it employed descriptive statistical tools to ascertain the role of the internet in mass communication research. The paper concludes that, if the medium is used properly, it will break down the barrier of dependency on traditional resources, and the information gap which exists. The researchers among other things recommend that, there is need for regular training and re-training of media practitioners on the use of the internet. This is important as the findings of this research show that the mere availability of these facilities cannot help matters unless the people they are meant for can effectively utilize them.

Keywords: Apparatus for Development, Internet, Role, Mass Communication Research.

INTRODUCTION

It is commonly believed that a decade ago researchers and students in Nigerian higher education institutions battled with the problem of inadequate and out of date materials. It could be argued that the only way to pursue knowledge is through research; however, there are noticeable changes towards research approaches with the advent of the Internet as a developmental agent. This has created a profound impact on the research process and dissemination of information. Rosenberg [1] remarks that “the internet is the most remarkable technological breakthrough of the 1990s, and it will continue to play an important role in transforming higher education.”

Developing countries, particularly in Africa, have difficulty accessing materials from developed countries because of distance and financial limitations

among other things. Ng'etich [2] notes that “socio-economic and technological changes ushered in by globalization demand that researchers devise new ways of addressing emerging research challenges” The Internet has introduced a new form of learning, in which the dispersal of knowledge becomes easy, quick, and with minimal cost. In spite of the Internet, Nigerian researchers have continued to depend on traditional ways of doing research. This dependency on traditional methods is contributing to the low level of research output in Nigeria.

Historically, scientific research in mass communication began in Japan through interpreting and reexamining the theories and hypotheses developed during the 1940s and 1950s in the United States and Europe. A major part of the research has been carried out by universities and research institutes established by

media associations. The Japanese Society for the Study of Journalism and Mass Communication, the nation's largest academic association for mass communication research, now has more than one thousand members including journalists and mass communication researchers and scholars. The research interest is widely dispersed today and articles and books appearing every year covers a wide range of issues.

Mass communication research dealing with the Internet and World Wide Web offers an excellent opportunity to track the changes of focus within a discipline. In just the past decade, online communication has captured the attention of researchers in all "channels" of mass communication. And, as print, broadcast, advertising, and public relations rush toward a fused medium, the web offers researchers a new channel, rich with possibilities.

The Internet arose in the late 1960s out of efforts to share expensive computer resources provided by the military to universities across the United States. The initial network, called ARP Anet, went online for the first time in the fall of 1969. The network operated using packet switching, a method of transferring information that breaks down messages in to small packets that are transmitted separately across the network and reassembled once they are received. Through e-mail and file sharing, ARPAnet soon became a tool used by academics to collaborate and communicate across the country. As the number of incompatible networks grew in the 1970s, Bob Kahn and Vint Cerf developed the TCP/IP protocols that would allow the networks to communicate with each other. In 1983 ARP Anet started using the TCP/IP protocols. This is commonly seen as the true beginning of the Internet.

The Internet is unique among the mass media in allowing interpersonal communication through e-mail and instant messaging; group communication through listservs, newsgroups, and discussion boards; and mass communication through the World Wide Web. The World Wide Web was developed in 1989 by a British physicist Tim Berners-Lee, while he was working at the European Organization for Nuclear Research in Switzerland. His goal was to produce a decentralized system for creating and sharing documents anywhere in the world. The Web has three major components: the uniform resource locator (URL), the hypertext transfer protocol (http), and the hypertext markup language (HTML). Berners-Lee published the code for the World Wide Web on the Internet in 1991 for anyone in the world to use at no cost.

The Internet in general and the Web in particular were based on a set of values known as the hacker ethic. This ethic holds that information should be freely distributed and that individuals should have as much control over computers as possible. The World

Wide Web has turned the Internet into a major mass medium that provides news, entertainment, and community interaction. The Web offers a mix of content providers, including traditional media companies, new media companies offering publications available only on the Web, aggregator sites that offer help in navigating the Web, and individuals who have something they want to say.

Over the past several years, users have moved increasingly from slow dial-up connections to high-speed "always on" connections that have changed how people view and use the Internet. Media are making use of these high-speed connections to deliver content that includes a rich mix of video, audio, photos, and text.

Furthermore, given the online world's rapidly changing features, mass communication researchers have embraced this new platform for quantitative and qualitative growth. Hence, the need to appraise the extent of the role the internet has played in mass communication research.

Statement of Problem

Unequivocally, intelligent communication policies depend on the availability of information that only research could provide. This statement was part of a plea for more research and development of communication policies and related research policies, and it seems reasonable to suggest that, together with many other forces and pressures, it played a part in the growth of mass communication research in recent years.

The emergence of the Internet has brought a tremendous change in the mass communication research all over the world. The media in various countries especially in the Western World are seriously adopting and utilizing the numerous opportunities provided by the Internet for greater efficiency, better quality, faster production, and delivery of more reliable and cost effective services. However, preliminary investigations from literature reviews show that most mass communication researchers in Nigeria and Africa are yet to fully catch up with the trend of the new media. According to the Economic Commission for Africa (ECA), only "very few countries in Africa have embarked on the ICT policy formulation process, while in many, the mechanism still falls short of the required standard" [3].

The mass communication researchers in Nigeria are also faced with the problem of adopting foreign technologies to suit local needs. Again, there are still serious lapses in infrastructure especially in the areas of electricity and telecommunications, as well as in the training of media personnel to handle some of these new sophisticated operational tools. Thus, Mbachu [4] cited in Ogah [5] observes that:

The newly emerging trends regarding Technology and the mass media globally indicates that the mass media in Nigerian will increasingly be left behind unless the country breaks the chain of economic stagnations and achieves a higher level of development that will guarantee its citizens a higher standard of living that will be a strong stimulus for production and consumption of the new technologies.

Meanwhile, it suffices to state categorically at this juncture, that the problem of this study is to ascertain the roles of the internet in mass communication research. The issue of serious concern is to empirically determine the extent of the relevance of the internet in mass communication research. This is particularly important as prior investigations show that there is already a dichotomy in information diffusion, resulting into a digital divide between the “information haves” or “digital highway users”, who can afford to acquire and use multiple sophisticated media technologies, and the “information have-nots”, who may not be able to afford and operate the computer or pay the bill for internet service connection and subscription. Hence, a study of this nature became imperative, because if the subject is ignored or overlooked, the existing knowledge gap resulting from absence/use of the internet would continue to widen, leading to a widespread ignorance, illiteracy, poverty, wars, hunger, diseases and wants.

Objectives of the study

The purpose of this article is to establish a broader examination of the role of Internet in mass communication research. The specific objectives include:

- To ascertain the level of application of Internet in mass communication research.
- To identify the factors responsible for that level of Internet application in mass communication research.
- To assess the implication of the present level of internet application in mass communication research.
- To recommend ways of improving the adoption and enhanced application of the internet in mass communication research.

LITERATURE REVIEW

Regardless of how the word research is used, it essentially means the same thing: an attempt to discover something. Research can be very informal, with only a few (or no) specific plans or steps, or it can be formal, where a researcher follows highly defined and exacting procedures. The lack of exacting procedures in informal research does not mean the approach is incorrect, and the use of exacting procedures does not automatically make formal research correct. Both procedures can be good or bad it depends on how the research is conducted. The important thing for all researchers to

understand the correct methods to follow to ensure the best results.

Research is divided into two major sectors, academic and private, which are sometimes called “basic” and “applied,” respectively. The two sectors are equally important and in many cases work together to answer mass media questions.

Research phases in Media

There is an interest in the medium itself. What is it? How does it work? What technology does it involve? How is it similar to or different from what we already have? What functions or services does it provide? Who will have access to the new medium? How much will it cost?

Secondly, uses and users of the medium begin once the medium is developed. In this phase, specific information is accumulated about the uses and the users of the medium. How do people use the medium in real life? Do they use it for information only, to save time, for entertainment, or for some other reasons? Do children use it? Do adults use it? Why? What gratifications does the new medium provide? What other types of information and entertainment does the new medium replace? Were original projections about the use of the medium correct? What uses are evident other than those that were predicted from initial research?

Effects of the medium include investigations of the social, psychological, and physical effects of the medium. How much time do people spend with the medium? Does it change people’s perspectives about anything? What do the users of the medium want and expect to hear or see? Are there any harmful effects related to using the medium? In what way, if any, does the medium help people? Can the medium be combined with other media or technology to make it even more useful?

Research is conducted to determine how the medium can be improved, either in its use or through technological developments. Can the medium provide information or entertainment to more types of people? How can new technology be used to perfect or enhance the sight and/or sound of the medium? Is there a way to change the content to be more valuable or entertaining?

One theory of mass media, later named the “hypodermic needle” model of communication, suggested that mass communicators need only “shoot” messages at an audience and those messages would produce pre-planned and almost universal effects. The belief then was that all people behave in similar ways when they encounter media messages. We know now that individual differences among people rule out this overly simplistic view.

Media Research and Scientific Method

Scientific research is an organized, objective, controlled, qualitative or quantitative empirical analysis of one or more variables. The terms that define the scientific research method describe a procedure that has been accepted for centuries. All research, whether formal or informal, begins with a basic question or proposition about a specific phenomenon

Historical Development of Internet

Rijsenbrij [6] cited in Adamu [7] explains that the internet is currently the most important driving force behind the revolution in ICTs. Baran [8], however records that, there are conflicting reports on the historical development of ICTs. According to him, one school of thought believes that as early as 1956, a Psychologist, Joseph C.R. Licklider, a devotee of Marshall McLuhan's thinking on the power of communication technology foresaw linked computers, consoles and television sets connecting people in a nationwide network. Baran [8] further writes that scores of computer experts enthused by Licklider's vision joined the rush towards the development of what we know today as the Internet.

The second school of thought which is perhaps the common one has it that the Internet is a product of the cold war. According to this school, the U.S Air Force in 1962, in her quest to maintain the military ability to transfer information around the country even if a given area was destroyed in an enemy's attack, commissioned leading computer scientists to develop the means to do so. Baran [8] recorded that it was shortly after the launch of the *Sputnik* in 1957 by the Soviet Union that the United States felt that her undisputed supremacy was being challenged. This led to the immediate establishment of the Advanced Research Project Agency (ARPA), to sponsor and coordinate sophisticated defense related research. ARPA commissioned Paul Baran in 1962 to produce a plan that would enable the United States military to maintain command over its missiles sites and planes if a nuclear attack knocks out their conventional means of communication. The U.S Military thought that a decentralized communication network was necessary. In that way, no matter where the bombings occurred, other locations would be available to launch a counter attack. As part of this plan, Paul Baran introduced what he called *Packet Switched Network*. Using Honeywell computers at Stanford University, the University of Santa Barbara and the University of Utah, Paul Baran's *Packet Switch Network* went online in 1969 and was fully operational and reliable by 1970. In 1972, an engineer called Ray Tomlinson created the first e-mail programme, he introduced the @ character. The word "Internet" was however coined by Vinton Cerf of Stanford University and Robert Karn, a U.S. military man in 1974. In 1979, a graduate student at the University of North Carolina, Steve Bellovin, created the USENET. In 1992, the Internet society was chartered

and the same year, the World Wide Web was released. Ticker [9] cited in Adamu [10] indicates that, today, there are more than 37 million users of the internet worldwide, serving a seemingly limitless number of persons.

Appraising Internet Application in the Nigerian Mass Media: The Experts' Views

Internet has become powerful weapons not only in the economic, industrial and academic spheres of life, but have also pervaded and virtually transformed the world from what we know barely few years ago. The media of mass communication – radio, television, newspapers, etc, all over the world, have definitely not been spared from the great revolution. The industry in the last few years had begun to take and appreciate seriously, the economic and productive values of adopting and applying the new technologies in their operations. Before the ICTs revolution, media operation was very cumbersome, slow and expensive. However, Internet has changed the situation positively in various aspects.

However, many scholars still argue, and strongly too, that while the developed countries of the world can be said to have fully embraced these technological innovations, and integrated them in their media, the less developed countries like Nigeria are still left far behind in their adoption and application. Reasoning along this line, Osuala [6] observes that: The diffusion of ICTs into Africa is at a snails speed, such that the gap between the information rich developed countries and African countries continue to increase everyday..... Africa has 13% of the world population but only 2% of the world telephone lines and 1% of Internet connectivity. Consequently, most African countries including Nigeria have not been able to reap the abundant benefits of the global information revolution in all areas of life.

In the same vein, Eze [10] presents what appears a more worrisome development as it concerns ICTs diffusion and adoption in Africa. According to him, "even within the African continent, there is now a digital divide between Southern Africa, Eastern Africa, North Africa and West Africa". He concludes that "as long as there remains a lukewarm attitude towards the adoption of ICTs by developing countries especially in Africa, they will continue to lag behind in both human and material development". In his own views, Aginam [11] observes that "Nigerians and indeed sub-Saharan Africans are still spectators in the ICTs world". This is in agreement with the submissions of Uwaje, cited in Terngu and Ternenge [12]. According to him, "ICTs are still on low ebb in Nigeria, and there is a serious and fundamental need to refocus the nation's information mindset from the current standard of who you know to what you know". Ndukwe [13] chronicles the state of ICTs in Nigeria thus: We live in a global village where ICTs have direct impact on a nation's ability to compete

globally; we must therefore ask ourselves how we have fared in comparison with other nations of the world in providing access to these vital infrastructures for our people..... While countries like Sweden boasts of about 100 percent access, Nigeria's figure is at a level of less than six percent. Even in the African continent, we are still far behind countries like Egypt, South Africa, Botswana, etc..... Nigeria remains a "Lilliputian" in the international development index as far as Internet penetration and usage is concerned.

The above scenario is equally applicable to the mass communication research. Although the mass communication researchers in the country are catching up gradually with the explosive information and communication technologies, yet, the extent of intent uses, adoption and application so far, still cannot be compared with what is obtainable in the advanced world.

Internet Connectivity in Nigeria

Many scholars have written about Internet connectivity in Nigeria. According to Adeya and Oyeyinka [14] the level of access and connectivity is far below that of developed countries. Nigeria as a whole has only two percent of the Internet connectivity in the developed world. However, this has continued to improve as a result of many universities and other institutions achieving direct access either through telecommunication or VSAT (wireless). As access grows, Nigerian researchers, scholars, and the general public have the opportunity to undertake research, teaching, learning, and other activities via the Internet.

Manir [15] reported that most of higher education institutions in Nigeria are connected with the Internet via VSAT facilities with Pamsat at their university computer centers. Most of universities have a base station with at least a 150 foot mast/sectoral antenna that supplies service around campus. With installation of VSAT, the use of the Internet for research has skyrocketed, as it has with the existence of many private and independent Internet cafés in the cities.

Internet as a Medium of Research

With the introduction of the Internet, researchers have been able to consult more information resources. Research is an important aspect of human development, and our libraries alone cannot provide us with adequate and current materials for our research needs. In view of this, mass communication researchers continued to seek the best platform to obtain quality research and growth. As a result, the internet's arrival was a quick response to the many societal problems. Yet, many criticized it as the beginning of the social problems and a downturn to quality research. However, it is evident that Internet also provides us with the means of carrying out research online by acting as the main engine for exchanging information and publishing.

According Manir [15], internet "will lead the academic community (in Nigeria) to exploit opportunities that will make them to be educated, more literate and conscious of the potentials for research". Buckle [16] states that "scholar and researchers will use this medium to transform ways of reviewing and using information in conducting research."

The use of the Internet for the exchange of research materials gives rise to the concept of Electronic resource sharing. This has reduced the shortage of information resources in Nigeria and consequently increased the output of research publications.

The Internet as a Medium of Communication and Collaboration

The Internet is a means for exchanging information and ideas among researchers and scholars, and is a medium for communication and collaboration among colleagues. In Nigeria, censorship has been a distortion to academic freedom. Mandari and Diouf [17] assert that "Internet technology provides the means to circumvent most of the constraints to academic freedom. This is because the Internet technology pays no attention to geographical boundaries and provides possibilities to thwart the censorship of scholarly publication in print media." Thus the Internet has the capacity to provide an enabling environment for Nigerian scholars and researchers to overcome the barriers of communication and collaboration.

The Implication of the Internet and Electronic Libraries for Research

Nigerian institutions and libraries lack current materials. Even when these materials are available, they are difficult to be accessed due to poor records management systems. Yet many Nigerian scholars and researchers largely depend on traditional information sources, particularly print, for their scholarly activities and research.

Accessibility to library materials in Nigeria has been constrained by various factors including:

- Inadequate library collections.
- High cost of postal service, which makes interlibrary loan and resource sharing almost impossible.
- High cost of international journals and books.
- Poor funding of libraries and universities.
- Inadequate and poor information infrastructure
- High level of poverty..
- Negative attitudes by the Government and its agencies towards library development.

The aforementioned problems have led to an extreme scarcity of books and other information material for research. However, presently, the advent of internet is a welcome development to every section of

the society, mass communication researchers inclusive. The use of the Internet has the potential to solve all these problems through electronic publishing and digital resource sharing. Use of the Internet for academic activities afford the opportunity for Nigeria to wake from its information coma. 'Several studies have shown that publications are rapidly migrating to the Internet' [11]. The power of Internet publishing is overtaking paper publishing worldwide. It is anticipated that Nigerian scholars and researchers will take electronic publishing seriously as an alternative.

Theoretical Framework

In every academic discipline, there is a body of theories that provide explanation for observable phenomena in that field. Ohaja [2] argues that "knowledge does not exist in vacuum". This study was anchored on Technology Acceptance Model and Technological Determinism Theory.

Technology Acceptance Model

Technology Acceptance Model (TAM) was developed by Fred Davis and Richard Bagozzi in 1989. It is an information systems theory which explains how users come to accept and use a technology. TAM postulates that the acceptance and use of a particular technology by an individual depends on how the individual perceives that technology to be useful to him. Factors such as Perceived Usefulness (PU), which include relative advantage, attached prestige and cost effectiveness, and Perceived-Ease-of-Use (PEOU), are significant in user's choice of acceptance of technology.

Giving his views on the postulations of TAM, Bagozzi [5] explains that people could be reluctant to accept new technologies because of the technologies' complexity and element of uncertainty which exist in the minds of decision makers with respect to the successful adoption of the technology.

The model is used as a framework for this study based on the fact that mass communication researchers may decide to either use the internet in their practice of carrying-out mass communication research or refuse to use it based on their perceived usefulness of the internet to their journalistic research activities.

Technological Determinism Theory

Technological Determinism Theory: This theory was propounded by a renowned Canadian communication researcher, McLuhan [18], who Baran and Davies [8] cited as stating that "changes in communication technology inevitably produce profound changes in both culture and social order." According to Adler [19], Technological determinism theory is the idea that technology has effects on our lives. The bearing of this theory to this work stems from the fact that internet as technological inventions are making dramatic influences on the users' communication today. In a nutshell, the internet is transforming the manner of

the Nigerians' interaction and exchange of feelings, experiences and ideas. So, apparently, they go a long way to determine how and what the users communicate. McLuhan as cited by Agba [20] asserts;

The medium is the message...each medium activates a particular mixture of the senses, which makes the form of the medium, rather than the message, determine ways of perceiving and articulating understanding.

The internet commands a unique perception in sending and receiving of information, messages and ideas. This would be different from the perception other mass mediated messages could ignite in their audiences. From all scenarios, the significant immediate effects of the new media on the lives of the people become crystal clear. This could redefine mass communication research. This was why the technological determinism theory was applied in this study as a relevant theoretical pedestal or base befitting it.

With regard to technological determinism theory and the role of the internet on mass communication research, Bakker and Sadaba in their 2009 study entitled 'the impact of the internet on uses' submit that:

The fact that technologies are used in a social context and have to fulfill existing needs cannot be emphasized enough [21]. The use of a technology is better explained by looking at the user than at the possibilities and potentials of the technology. Choosing a 'Uses and Gratifications' approach [22, 6] instead of a technological-deterministic perspective, however, does not mean that technologies have no impact on users. It would be very hard to argue that the Internet has not affected the way in which people work, study and look for information or communicate with others. [23].

The social media are exerting influences on their users. That is, means of exchanging messages, information and ideas. This could be seen in the interactive characteristics of the internet; as such they give the users a different taste of communication other than what has been. The above study found out that the internet has some effects on their users'. Thus, the researchers agree that, "the Internet plays enormous roles on the mass communication research. In general, the younger generation's use of traditional media, particularly newspapers, radio, and television has dropped as a result of emerging social media.

Moreover, one of the propositions of technological determinism theory that makes it germane to this study is that "each technology has a ...particular communication forms, contents and forms which distinguish them from other conventional media. These characteristics are perhaps what give the social media their own special appeals which are why their audiences make use of them. For example, it is a common

knowledge that the social media are highly interactive and participatory media genres.

Also, Capra [24] cited in the same study by Laskewicz [25] comments on what the modern means of communication has wrought in human society. Part of his findings is that, "technological growth is seen as determining our lifestyles, our social organizations, and our value systems. This has led people to believe that technology determines the nature of our social relations."

By and large, the forms, contents and uses of the internet ultimately have phenomenal influences on the users' lives and their perception of contemporary human communication. The use of the internet has significantly redefined the information dissemination and consumption patterns among the audience as well as altered the services of the conventional mass media systems. This is quite different from what used to be obtainable before now, particularly in the realm of traditional journalism.

METHODOLOGY

The Researchers adopted qualitative research design for this study. The approach used for the generation of research data was desk study; data collection from secondary sources. Newspapers, Magazines, Libraries, Internet and Archives were among the sources the researchers consulted to drive home his points. Descriptive statistics tool was used for the data analysis.

CONCLUSION

Nigerian researchers and scholars must move from traditional to modern practices in order to exploit the benefit and potentials of the Internet. Researchers can only make a profound achievement and optimally contribute to the development of knowledge by using the Internet to enrich their research and to disseminate their findings.

Internet has become a powerful force in every facet of contemporary life, mass communication research inclusive. Its significant roles in the mass communication research are enormous. In the media industry, it is even a more serious matter, because the media is a product of science and technology. However, our analysis so far has shown that despite the inevitability of these new technologies in all aspects of modern day research, Nigeria, Africa, and indeed the third world is still seriously lagging far behind, in their adoption and utilization of the internet features. Notable among the impediments are lack of infrastructure, poor knowledge of ICTs at all levels, from suppliers to users, few trained or skilled personal, high cost of acquisition and maintenance, absence of ICT policy or its implementation, corruption and political instability, poverty, wars, hunger, diseases and fear of insecurity, among others.

However, regardless of these impediments, Nigeria has recorded considerable progress in the use of the internet in different sectors. Many Nigerian media for instance, are now on the Internet. The NTA, AIT, MBI, Channels TV, Ray Power FM, Dream FM, Solid FM, Urban FM and a few others are now embarking on satellite broadcasting and online research. This is a good development. It is however believed that if the current pace is sustained, the internet in Nigeria will take the mass communication research to a greater level to catch up with their western counterpart.

The study has again, confirmed that the underutilization of Internet in mass communication research has hampered the quality and quantity of their operation.

RECOMMENDATIONS

The following recommendations are however made to consolidate the study and proffer solution to the problems raised:

- In order to encourage the growth of the internet in the country, government should intervene by providing enabling environment that would attract both local and foreign investments in the area of technological acquisition and development.
- The media organizations should make efforts to invest in Internet development and acquisition, where the local development is difficult, they should follow the global trend and ensure that only the standard and latest equipment are procured.
- The government should assist the media to go global by completing and launching the nation's communication satellites as soon as possible, as this would go a long way in boosting the quality and quantity of media outputs.
- Government should endeavour to improve the Nigerian currency so that the media can afford to import the new media gargets less costly.
- The government can also subsidize the cost of importation by removing the import tariffs in the importation of ICTs equipment into the country.
- The government and the private sector should embark on planned and sustained research activities towards technological improvement. These activities should involve considerable investments in both material and human resources; this is because, without efficient human resources, technological resources will continuously elude us.
- It is also our humble submission, that most of the factors militating against effective use and growth of ICTs in Nigeria can be eliminated or minimized with good governance, proper planning and good ICTs policies.
- Government should ensure extrication of exploitative charges being complained of PHCN, GSM, and internet providers which remains an important factor militating against meaningful ICTs

development. The need for the operators to consider subsidies is very necessary.

- There is need for regular training and re-training of media practitioners on the use of the latest ICTs. This is important as the findings of this research show that the mere availability of these facilities cannot help matters unless the people they are meant for can effectively utilize them.
- Again, we strongly recommend that efforts should be made to tackle the problem of brain-drain in the country. A situation where the nation is in serious lack of experts to handle and maintain most of the sophisticated technologies, and the few available ones are constantly enticed to abandon the country and seek greener pastures overseas, is not good enough.

REFERENCES

1. Rosenberg N. Challenges to the social sciences in the new millennium. In Tokyo Social Science and Innovation Workshop 2001 (pp. 7-27).
2. Ng'etich AK. Old problem, new strategies: internet as a tool for research in Africa. Available at: http://codesria.org/IMG/pdf/Kibet_Ngetich.pdf Accessed. 2003;29:12.
3. Ebo S. Harmonizing information management for specialized reporting. Nigerian Society For the Promotion Of Indigenous Studies, Enugu, Nigeria. 1998.
4. Tiamiyu M. Information and Communication Technologies for social development: Issues, options and strategies. Communicating for development purposes. Ibadan: Kraft Books Ltd. 2002:29-60.
5. Soola EO. Communication in global, ICTs and ecosystem perspectives: insights from Nigeria. African Council for Communication Education (Nigeria Chapter), Office of the Director/Editor-in-Chief, Institute for Development Studies, University of Nigeria in association with Precision Publishers; 2007.
6. Rijsenbrij DBB. *The role of ICTs in the 21st century*. www.daanrijsenbrij.com. 2005; Retrieved 12/12/2009.
7. Idemili SO, Sambe SA. The Nigerian media and ICTs Implication and Challenges. Nwosu I. E. Soola O. E. (Eds.), *Communication in Global, ICTs & Ecosystem Perspectives: Insight from Nigeria*. 2007:181-8.
8. Baran SJ. *Introduction to mass communication media literacy and culture*. Boston: McGraw Hill publishers. 2002.
9. Maida A. New technologies and transformation of communication process: Challenges for the Nigerian mass media in the 21st century, in Duzang (Ed). *The media in Nigerian agenda for the 21st century*. Abuja: The NUJ Abuja council publishers limited. 1990.
10. Ezeoha U. *The Influence of ICTs on Nigerian broadcast Industry: A study of ESBS and NTA, Enugu. Unpublished B. Sc. Project, EBSU*. 2008.
11. Byork B & Turk Z. How scientists retrieve publications: An empirical study of how the Internet is overlapping paper media. *Journal of Electronic Publishing*. 2001; 6(2). Available:<http://www.Press.umich.edu.edu/jep/06-02/bjork.html>
12. Terngu CC, Ternenge ES. The journalist in the age of information and communication technology: threats and opportunities. *Communication in Global ICTs and ecosystem perspectives: Insights from Nigeria*. 2007.
13. Ndukwe E. Connecting the next 10million people in Nigeria. *New Age*, February. 2002; 7.
14. Adeya B, Oyeyinka CN. The internet in African Universities: case study of Kenya and Nigeria NU. INTECH Discussion paper; 2002.
15. Manir AK. Availability and Utilization of the Internet for Academic Activities in selected federal universities in Northern Nigeria. Unpublished master's thesis. 2007.
16. Buckle D. Internet: strategic issues for libraries and librarians—a commercial perspective. In *Aslib proceedings 1994 Nov 1* (Vol. 46, No. 11/12, pp. 259-262). MCB UP Ltd.
17. Federici S. Academic freedom in Africa. *Quest: An International African Journal of Philosophy*. 1993;7(2):57-65.
18. McLuhan M. *The gutenberg galaxy*. 1962.
19. Mojaye MV. Pattern of utilization of the internet and the World Wide Web by Nigerian newspapers. *Nigerian Journal of Communication*. 2006;4(1/2):158-63.
20. Chuba A. *International Communication: Principles, Concepts and Issues*. Teaching Mass communication: A multi-dimensional Approach. Okunna (ed). Enugu: New Generation Books. 2002.
21. Castells M. Universities as dynamic systems of contradictory functions. *Challenges of Globalisation: South African Debates with Manuel Castells*. Cape Town: Maskew Miller Longman. 2001:206-23.
22. Wright KB, Rosenberg J, Egbert N, Ploeger NA, Bernard DR, King S. Communication competence, social support, and depression among college students: a model of facebook and face-to-face support network influence. *Journal of health communication*. 2013 Jan 1;18(1):41-57.
23. Bigne E, Aldás J, Hyder A. Web site engagement: the influence of online choice behaviour. 2009.
24. McCauliffe DP, Zappi E, Lieu TS, Michalak M, Sontheimer RD, Capra JD. A human Ro/SS-A autoantigen is the homologue of calreticulin and is highly homologous with onchocercal RAL-1 antigen and an alypsia. *The Journal of clinical investigation*. 1990 Jul 1;86(1):332-5.

25. Jensen M. *ICTs in Africa: A Status Report*. 2008;

<http://www3.wnape.org>, retrieved 23/11/2009.