International Journal of Capacity Building in Education and Management (IJCBEM), Vol. 6, No. 5, 2024.
Available online at http://journals.rcmss.com/index.php/ijcbem. ISSN:2350-2312(E) ISSN: 2346-7231 (P)
Covered in Scopedatabase- https://sdbindex.com/Sourceid/00000432, google scholar, etc.
Hassan Achimugu, Isah Nurudeen Mohammed & Adaji Abdul, 2024, 6(5):1-18

Information Communication Technology and the Management of the Federal University, Lokoja, and Kogi State Polytechnic, Lokoja, Kogi State, Nigeria

Dr. Hassan Achimugu, Isah Nurudeen Mohammed, Adaji Abdul

Department of Public Administration, Faculty of Management Sciences, Prince Abubakar Audu University, Anyigba, Kogi State, Nigeria

ABSTRACT

This study examines the extent of the adoption of ICTs in the management and internal operation of the Federal University, Lokoja, and Kogi State Polytechnic, Lokoja. It examined the adoption of ICT in the institutions and the level of knowledge of the management, staff and students of both institutions as far as the issue of ICT is concerned. Descriptive Survey was adopted as a study design. Quantitative data were gathered by means of in-depth interview of selected respondents from the institutions of study. Hence, the paper relies on quantitative and qualitative method of data collection. Hence, it leverages on primary and secondary sources of data collection and content analytical method. Findings show that the selected institutions have not sufficiently imbibed the technologies required to ensure full implementation of ICT. While there were indications that the leadership made appreciable use of technologies like phone calls and text messages, e-mail, and social media platforms like Facebook and twitter, there were also indications that video/picture/audio sharing channels (like Podcast, Instagram, YouTube and Skype), intra-net etc. were not given considerable attention. It was therefore established that the institutions still heavily relied on ink/paper administrative system while making skeletal use of the e-aspect. It was therefore recommended, amongst others, that the institutions' leadership should commit substantial resources required for the actualization and effective utilization of ICT, consider imbibing the most popular new media outlet(s) in their respective area of operations in line with the popular demand of their audiences and constantly update the knowledge of staff and students in strategic aspects of the new technology.

Keywords: *Information, Communication, Technology, Tertiary Institutions, Education.*

INTRODUCTION

There is no gainsaying the fact that technological advances have changed the way people go about their daily activities. Whether in the checking of e-mails or texting or sending messages with phones, communication through the cyberspace is assuming an evolutionary dimension. The dimension extends into online shopping, internet banking, booking flight tickets, checking the weather, etc. (Onuigbo and Emeh, 2015). It is therefore, not surprising that studies over the years have been highlighting the role of technology and its advancement in the management of institutional affairs (Richards, 1993; and Fidler, 1997; Oshionebo & Fatoke, 2017). What the studies suggest is that the adoption of all facets of technology to deliver and conduct business and render services is a compelling phenomenon; and must be embraced to ease management functions. In essence, human resource management cannot be an exception in this regard, and it has been deeply encroached by the technological waves (Gasco, 2003). An aspect of technological incursion that is much relevant to management is e-governance; a phenomenon that has virtually altered the traditional relationship between government and citizens and created a new virtual government-and-citizen interface.

As the use of technology in general grows, so too does its use by government and its agencies; leading to the trend of e-governance (ICT) as a concept. Therefore, e-governance has become an accepted methodology involving the use of Information Technology in improving transparency, providing information speedily to all citizens, improving administration efficiency, improving public services such as transportation, power, health, water, security and municipal services. As the reach of governance has spread into new areas of the globe as well as new aspects of hitherto personal relationships, it has come to rely upon more complex assemblages of technically stored and disseminated knowledge (Coleman, 2008). This takes us into the issues of e-administration, an aspect of e-governance that supports back-office administrative tasks (Sánchez, 2006; cited in Onuigbo and Emeh, 2015). The potential for electronic platform to transform public administration has been heralded at various points throughout the past half-century. As increasingly sophisticated Information and Communication Technologies (ICTs) spread across all organisations during the 1980s and 1990s, politicians jostled to claim credit for "information age movement". By the beginning of the twenty-first century, as use of internet became increasingly widespread, claims for the transformative power of ICTs became correspondingly enthusiastic (Margetts, 2005).

In Nigeria, e-governance has been found to be effective in overcoming barriers of coordination and cooperation within the public administration. Centralized databases and standards could be made available to several government agencies, allowing for increased interoperability and reduced duplication of services. This cost-effective governance approach can be particularly beneficial in a country like Nigeria where common standards and timely data resources are shared (Fatile & Obafemi, 2012). Improved services resulting from e-governance may also enhance decision-making in governance. In 2001, the Nigerian government took noticeable steps to develop and utilize ICT in governance, launching the National Information Technology Policy (NITP) and establishing the National Information Technology Development Agency (NITDA). The private sector in Nigeria also played a significant role in ICT integration. A joint venture called National e-Government Strategies Limited was formed, with ownership comprising of the government (5%), a consortium of banks (15%), and strategic partners (80%). This joint venture was tasked with creating a practical strategy and single architecture to guide the evolution of digital government solutions with consistent standards, operating platforms, and applications across agencies and government systems. The first project undertaken by NeGst was the e-registration of teachers in Nigeria in May 2006 (Adeyemo, 2011).

The above is an indication of the country's interest in joining the rest of the world in the race for deployment and use of ICT resources in governance and administration. There is no doubt that the efforts have yielded considerable results: many government ministries, departments and agencies now have website; even though most of these websites are simply information board which rarely gets updated (Adeyemo, 2011). In addition, research evidence in recent times have indicated that e-administration has strong positive effect on service delivery and can increase process-based interactions and employees' responsiveness, and thereby enhancing job performance in strategic sectors of the country (Chukwuemeka, Ubochi and Okechukwu, 2017). While the development on the global scale of e-administration efforts in Kogi State and Nigeria generally could be at least described as significant, its sectoral performance still leaves considerable gaps by way of research evidence. In essence, there is not much to show, in specific terms, how Ministries, Departments and Agencies (MDAs) have adopted it as a means of managing both human and material resources. One crucial aspect of the MDAs where there is dearth of data in this regard are the institutions of higher learning. The emphasis on such institutions is hinged on the fact that factors that hinder the effective implementation of e-governance as means of management are much more noticeable at such level

(Adeyemo, 2011; Mundi and Musa, 2010, cited in Onuigbo and Emeh, 2015). These factors range from poor financial and technical know-how to lack of political will. It is therefore important to interrogate machineries of governance in such institutions with the view to discovering the extent to which e-services are deployed to ensure administrative efficiency in the institutions.

Studies have shown that the implementation of e-Governance has begun in Nigeria, but there is little evidence or research to suggest that a clear framework for the adoption of e-administration is being followed by most Departments, Ministries and Agencies (MDAs). As observed by Ifinedo & Uwadia, 2005) and United Nations (2002), Nigeria has an e-governance development index of 1.02, which is below the UN's benchmark measure of development at an index of 1.62. This is corroborated by Yusuf (2005) who stressed that e-governance activity in Nigeria is low. According to him, most government websites are in the *publish* stage and a few government organisations are at the transact stage. Some studies further indicate that some organisations have by-passed the *interact* stage, thereby giving no opportunity for citizen requests and feedback.

At the State level, Olatokun and Adebayo (2012) observed that findings from a study by Mundi and Musa (2010) showed that only 30% of the Nigerian state websites could be described as having reached the second stage of e-government and 70% of them were still very much in the publish stage of e-government. These states were Lagos and Imo and the Federal Capital Territory, Abuja. They provided services that invite citizens to interact with them such as message boards and chat forums, as well as providing facilities for users to give online feedback. (Fatile and Olufemi, 2011). The findings as reflected above are a pointer to the level of involvement of e-administration in the management of public sector, especially institutions of higher learning in Nigeria. It is instructive to aver that despite the import of the adoption of ICTs in our institutions, the problem of ICT skill, knowledge and competence of the management, staff and students persists. This is perhaps due to technophobia and lack of commitment to the ideals of ICTs. This gap therefore calls for interrogation of governance issues as they relate to the adoption of ICT in the management of two of such institutions of higher learning in the State; namely the Federal University, Lokoja and Kogi State Polytechnic, Lokoja.

1.3: Research Questions

The research questions of this study are:

i. What is the extent of the adoption of ICT in the management of both institutions?
ii. What is the level of knowledge of management, staff and students of both institutions in the use of ICT?
iii. What are the core impediments to the adoption of ICTs in the management of Federal University, Lokoja and Kogi State Polytechnic, Lokoja?

1.4: Objectives of the study

i. To determine the extent to which ICTs have been adopted in the management of Federal University, Lokoja and Kogi State Polytechnic, Lokoja.
ii. To investigate the level of knowledge of the management, staff and students of both institutions on ICT.
iii. To identify the core impediments to the adoption of ICTs in the management of Federal University, Lokoj and Kogi State Polytechnic, Lokoja.

CONCEPTUAL FRAMEWORK

E-Government and E-Governance

E-government connotes different things to different people. While some view it in terms of digitalization and acquisition of computers by government, other observers see it more narrowly in terms of government conducting her services online. In essence, there is no universal definition of e-government. It is, however, noteworthy to consider some definitions from notable agencies and experts.

According to the United Nations (2008), e-government can be described as utilising the internet and the world-wide-web for delivering government information and services to citizens. The OECD (2003) defines e-government as "the use of information and communication technologies, and particularly the internet, as a tool to achieve better government". In this description, the internet is defined as a requirement and a possible medium for e-government. It also emphasises that ICT and the internet should be viewed as tools for better government, not as goals to be achieved in their own right. The World Bank (2001) provides a more detailed approach to e-government when it defines it as "government owned or operated systems of information and communication technologies that transform relations with citizens, the private sector and/or other government agencies so as to promote citizens' empowerment, improve service delivery, strengthen accountability, increase transparency, or improve government efficiency". This definition stresses that ICT, the internet and mobile computing are e-government tools. Whichever way it is seen therefore, e-government simply revolves around the use of information and communication technologies to accomplish governance in the public sector.

Although a complete review of e-government definitions is outside the scope of this work, the definitions presented above have one re-occurring theme, and that is the transformational aspect of e-government. Obviously, e-government presents African countries with copious prospects to resolve some of her inherent contradictions. E-Government proffers development prospects in these sectors: public sector reform, accountability, citizen engagement, tax system management and strengthening democracy. African governments need to develop policy frameworks, supported by political will to drive this process.

On the other hand, e-governance is the public sector's use of information and communication technologies with the aim of improving information and service delivery, encouraging citizen participation in the decision-making process and making government more accountable, transparent and effective. It entails the digitized coding, processing, storage and distribution of data relating to three key aspects of governing societies: the representation and regulation of social actors; the delivery of public services; and the generation and circulation of official information (Coleman, 2008).

The ICT has become an accepted methodology involving the use of Information Technology in improving transparency, providing information speedily to all citizens, improving administration efficiency, improving public services such as transportation, power, health, water, security and municipal services. Governance has always been dependent upon technology, in the broadest sense of knowledge, skills, techniques and epistemological strategies, as well as devices, hardware, software and power circuits. As the reach of governance has spread into new areas of the globe as well as new aspects of hitherto personal relationships, it has come to rely upon more complex

assemblages of technically stored and disseminated knowledge (Coleman, 2008). E-governance therefore, is more than just a government website on the Internet.

E-Administration

The European Commission (2007) defines e-administration as an application using Information and Communication Technology (ICT) to support back-office administrative tasks. Sánchez (2006) pointed out that e-administration is the use of communication technology to support information flow either in or outside the public authority. Heeks (2003) describes that e-Administration covers G2G (Government to Government) relation to improve administrative processes in hierarchical organisation.

Heeks (2003) describes e-Administration, as any mechanism or process which converts what is traditionally processed by means of papers a pen into electronic processes, with the goal of creating a paperless office. E-Administration is, therefore, a part of e-government which handles internal administration within government instead of external users such as citizens and businesses. This is an ICT tool, with the goal being to improve productivity and performance. E-Administration can encompass both intra-office and inter-office communication for any organization. Its objective is to introduce total transparency and accountability leading to better e-Governance within any organization. The implementation of any e-administration solution should be people centric rather than organization centric, should remove dependence on specific individuals, and should introduce transparent systems of working. Examples of e-administration include online timesheets and expense account. These can be used to help reduce costs to an organisation. There are many drivers of e-Administration towards Change. They include economic factors, organizational issues, political and technological drivers. From the economic point of view, there is need for cost savings and increase efficiency of work processes. The overall benefit and cost impact can be measured not only from government side, but also by user side, such as better service quality and savings of user time. In terms of organisational issue, e-administration can lead to a break-up of cuts bureaucracy within government by breaking down organizational boundaries (Dunleavy & Hood, 1994), streamline processes and reduce duplication and inconsistencies. From the political perspective, it can ease decision making and policy implementation stimulates implementation while in terms of technology, electronic networks allow cross-matching and integration of data indifferent places and different departments. They also enable flexibility and connectivity to acquire much more autonomy (Fang 2002).

E-Service

Electronic service is the service provided through electronic medium like mobile, kiosk and online (Bhuiyan, 2011). E-Service as a term is not only about “electronic” and “service” as argued by Sukasame (2004), but the true e-service operation may be where part if not all interaction between service provider and customer is done via internet. This was also substantiated by Surjadjaja, Ghosh& Antony (2003). E- E-Service concept unites the important trends in the business world, the shifting of the economy from goods to services (Rust, 2001). The quick development of information and electronic networks has helped in e-service growth (Rust, 2001). In Nigeria today, most government and private agencies still depend on employee’s honesty to give accurate account in using public funds and collection of revenue to support economy development (Gberevbie, Oyeyemi, and Excellence). Information technology through e-service in this area is seen as an enabler to give appropriate and open accountability in revenue and resource management (Gberevbie, et al, 2014) due to high corruption in the country (Ayoola, 2013).

The role of information technology in economic development cannot be measured as e-service has helped to check fraudster's activities in the collection of various government revenues in Nigeria (Ikponmwosa and Ezomo, 2013). The living standard of citizen could be improved with developmental projects if fund is available (Ikponmwosa and Ezomo, 2013). Governments should avoid consequences connected with technological change be it economic or social (Asgarkhani, 2005). Though, there are many benefits with the use and application f digital and e-Government services (Asgarkhani, 2005). However, the use of the technology (e-Service) might not be able to totally remove challenges facing the economic growth. It will, therefore, encourage the actualization of economic development goals through prompt availability and exchange of information (Ikponmwosa and Ezomo, 2013).

ICT and the Management of Tertiary Education in the Developed World

In the 21st century, ICT has changed the role of education and information professionals in handling, processing, and managing information to provide timely and improved information services in information resources format. Furthermore, according to Dhanavandan, et al (2012) the developments in ICT expedited the development of new electronic materials and devices. Developments in library and information have evolved to a shift in paradigm from printed publications to electronic formats, from document ownership to easier accessibility to information, intermediate handlers of information to end-user service models, as well as locating particular libraries to virtual libraries. In agreement to other empirical literature, Sharma (2009) posits that improvements in applications of ICT through the past few decades have resulted in drastic and radical evolutions as regards information storage, gathering, accessibility, organization, retrieval and consumption, and developments in this sector has brought numerous products and service delivery. Diyaolu, (2018) is of the view that the advent of technology has advanced the expedition of human activities in the world today. Further, Egberongbe (2011) cited in Oluwayemi & Ndakasharwa (2020) also opined that developments in global economies have been moulded by far-reaching changes in the ICT industry. The advent and utilization of ICT are perhaps the most important development influencing scholarly communication. Applications of computer technology to information handling and dissemination has resulted in the delivery of numerous products and services.

ICT and the Management of Tertiary Education in the Developing World

The use of Information and Communication Technology (ICT) in managing tertiary education in the developing world guarantee access to education. ICT bridges the gap in access to education by offering online courses, virtual classrooms, and digital libraries, reaching students in remote areas where traditional infrastructure is lacking (Sunday, 2015). ICT systems streamline administrative tasks such as student registration, fee payments, course scheduling, and academic record management, reducing paperwork and manual errors. Thus, it enhanced learning experience in that the interactive e-learning platforms, multimedia resources, and educational software enhance the learning experience, catering to diverse learning styles and enabling self-paced learning. Fatile and Olufemi (2011), averred that ICT facilitates collaboration among students, faculty, and institutions globally through virtual classrooms, video conferencing, and online forums, fostering cross-cultural exchange and collaborative research initiatives. Digital repositories and online libraries enable institutions to share educational resources, research findings, and teaching materials, reducing duplication of efforts and promoting knowledge dissemination (Fatile and Olufemi, 2011). Jameel and Ahmad (2020) posited that integrating ICT in tertiary education in the developing world equips students with digital literacy, critical thinking, problem-solving, and collaboration skills, enhancing their employability. However, challenges such as inadequate infrastructure, limited internet

connectivity, digital divide, and resistance to change must be addressed to fully harness the potential of ICT in managing tertiary education in the developing world. Collaborative efforts between governments, educational institutions, and the private sector are crucial in overcoming these challenges and realizing the benefits of ICT in education (Fatile and Olufemi, 2011).

Information and Communication Technology (ICT) plays an essential role in all sectors of an economy including education. In the higher education sector, the usefulness of ICT cuts across all disciplines of study from mathematics to social science. ICT transforms the educational system by replacing traditional ways of teaching and learning with modern, computer-based infrastructure (Kehdinga, 2019). Education is a powerful instrument in the development every nation. According to Adeoye et al (2013), the pervasive influence of ICT has brought about rapid technological, social, political and economic transformation, which has paved the way for societal networking. Information and Communication Technologies (ICTs) are broadly defined as technologies used to convey, manipulate and store data by electronic means. These include e-mail, SMS, text messaging, video chat (e.g., laptop, desktops and smart phones) that carry out a wide range of communication and information functions (Mathevula and Uwizeyimana, 2014,)

Information and Communication Technology (ICT) serve as a change agent in the method and quality of teaching and learning in educational institution all over the world. However, it should be noted that, ICT is not merely restricted to primary and secondary educational levels; it extends to the tertiary. In the estimation of Kaka (2008), ICT is not just a bloom of educational activities, but also it will be a viable means to improve the academic standard of African institutions of higher learning. Information and Communication Technologies potentially offer increased possibilities for proliferation of knowledge which brings about innovation, (Larsen and Vincent-Lancrin, 2005). Adams (2003) notes that in developed countries, governments play a key role in creating conducive environment for the flow of knowledge. Such overwhelming fact cannot be said for many African countries whose governments bluntly neglect this aspect of education. Note that negligence indirectly or directly puts up barriers that makes it harder for ICTs and knowledge diffusion to thrive. This has greatly affected the knowledge economy in Africa except in a few nations like, South Africa, Kenya, Nigeria and Uganda where significant change have been witnessed in the higher education sector especially as relates to the use of ICT. This is confirmed by Murgor (2015) who argues that universities in countries like Tanzania, Uganda, South Africa, Mozambique, Nigeria, Ghana, Kenya and Rwanda are increasingly emphasing the need for the use of ICT and taking steps to usher that both the resources needed and the environment required for profitable engagement with ICT is made available.

ICT and the Management of Tertiary Education in Nigeria

The integration and use of ICT in tertiary education institutions in Nigeria is gradually taking shape with several institutions appreciating its potential to improve, enhance and assist teaching and learning processes for both teachers and students (Modibbo & Fashola, 2022). The National Policy on Education in Ijov & Wombu (2019) recognizing the role of ICT in the development of skills, abilities, and competencies for effective development offer that it should be integrated into education in Nigeria at all levels. The integration is taking the form of the use of computers, the internet, TV, radio, video conferencing, and mobile learning (Lubega, 2017). The deployment of ICT in Nigerian Tertiary Schools has been supported by government and non-governmental organisations, such as banks, and individuals (Modibbo & Fashola, 2022). For example, Firms such as Nigeria Communications Commission (NCC), Education Trust Funds (ETF), MTN Nigeria, and Zinox Computers, have at intervals and at separate times, shared laptops and other ICT apparatuses to

teachers and students in tertiary institutions. The role of Information Communication Technology (ICT) in Nigerian tertiary institutions is very extensive and widespread. In the management and administration of tertiary institutions, ICT has been found to have played a great role in improving and modernizing the processes and methods being used. Most administrative and clerical processes, for activities including admission processing, course registration, fee payment, and purchase of academic materials have been computerized individuals (Modibbo & Fashola, 2022). Most tertiary institutions have websites from which students can perform several functions by themselves and submit them to the institution. Most tertiary education institutions in Nigeria are now utilizing ICTs to address the majority of their administrative issues as well as provide qualitative and quantitative instructions. Tuition, hostel, and other costs that were formerly paid in cash or by bank draft are now mostly paid online. This implies that with the introduction of ICT in tertiary institutions, administrative services are faster and better implemented, thereby boosting efficiency and effectiveness in the institutions' service provision individuals (Modibbo & Fashola, 2022).

An Overview of E-Governance and Administration in Nigeria

Prior to this time, Nigeria has set an ambitious goal of being one of the world's top 20 economies by 2020 (vision 20:2020). The government aims to enhance national competitiveness to drive economic growth and achieve this vision. Introducing ICT in governance is seen as essential for making the public sector more efficient. Currently, traditional forms of ICT such as television, radio, and newspapers are still widely used in many developing countries, including Nigeria. However, these methods of communication are generic and do not cater to individual interests or needs. Moreover, they are more suitable for literate individuals and the elite classes of society (Rogers, 2003).

According to Rogers (2003) the nature of the information exchange relationship in individuals determines the condition under which an individual exchanges or does not exchange information and the impacts of such transfers. Therefore, the nature of exchange of information regarding e-governance products and services in Nigeria will be between individuals knowledgeable or experienced in using ICT/(e-governance) and individuals who have no prior knowledge or experience of e-governance product and services. Nigerian communication channels are generally mass media channels (television, radio, newspapers- UNDPs "old forms of ICTs"), interpersonal channels (social gatherings, one to one informal meetings) and recently, the newer forms of ICTs interactive communication channels (internet). In Nigeria, e-governance research based more on secondary data has been undertaken to identify the challenges and impediments that e-governance poses for Nigeria (Ifinedo & Uwadia, 2005).

In Nigeria, there are several initiatives geared at accelerating development via the technological platform in the polity. E-Nigeria initiatives geared towards connecting communities, vital agencies, institutions of Government and educational institutions at all levels with ICT are currently being pursued by the government. From the National Rural Telephony projects to other laudable initiatives like the Nigerian telemedicine initiative, public service network initiative, internet exchange point initiatives, State and local Government ICT facilities, loan scheme initiative and wire Nigeria initiative. According to Ekeh (2007), these initiatives are aimed at enabling the rapid development of the Nigerian nation. In addition, and as a matter of necessity, the only skill and tool a nation needs to actualize them (the initiatives) is by making computers affordable and flexible for Nigerians to acquire. Currently, one can access the local/states allocations over the Ministry of Finance website and compare with the estimated values locally (through the in-house package) within the local Government and reasons on how and where the expenditure has gone into can be deduced almost instantaneously.

Most of the understanding of the information age comes from the theory and experiences gained in the developed world. There is little in-depth knowledge of issues that are specifically relevant to the Nigerian context in particular and Africa in general. There are major areas of the economy and society where the impact and potential of ICTs have not been fully harnessed at all in the Nigerian context. Although the implementation of e-Governance has begun in Nigeria, there is little evidence or research to suggest that a clear framework for the adoption of e-Governance is being followed. According to Yusuf (2005), e-governance activity in Nigeria is low. Most government websites are in the publish stage and a few government organisations are at the transact stage. Some organisations have even by-passed the interact stage, thereby giving no opportunity for citizen requests and feedback. Olatokun and Adebayo (2012) observed that findings from a recent study by Mundi and Musa (2010) showed that only 30% of the Nigerian state websites could be described as having reached the second stage of e-government and 70% of them were still very much in the publish stage of e-government. These states were Lagos and Imo and the Federal Capital Territory, Abuja. They provided services that invite citizens to interact with them such as message boards and chat forums. They also provided facilities for users to give online feedback.

Some other state governments in Nigeria have launched official state websites so as to give all those seeking information on the state access to whatever information they sought and participate in the decision-making process of government. In a study conducted by Awoleye et al. (2008), it was found that a significant number of both government and non-government employees in the states were informed about e-Governance through mass media. However, despite this high level of awareness, only half of the population were proficient in using e-Government. In response to this, the government established the National Information Technology Development Agency (NITDA) under the Ministry of Science and Technology (MoST) to promote Information Technology (IT) development in Nigeria and oversee the implementation of the national IT policy. NITDA is also responsible for executing e-governance initiatives through the National e-Governance Strategy Limited (NeGSt), a Public-Private-Partnership (PPP) as a special purpose vehicle (NITDA, 2001). NeGSt's mandate is to drive the development of Nigeria's e-governance initiatives, create a practical strategy and single architecture to guide the evolution of digital government solutions with consistent standards, operating platforms and applications across agencies and government systems.

The Nigerian government has already introduced some components of e-governance. For instance, the Nigerian Customs Assycuda Programme, the computerization of Resident Permit by the Nigerian Immigration Service, and the computerization of land and Certificate of Occupancy in the Federal Capital Territory Administration (FCTA) are now in place. Additionally, the payroll of some organizations is being computerized through e-Payment. Online checking of exam results for the West Africa Examination Council (WAEC), the National Examination Council (NECO), the Joint Admission and Matriculation Board (JAMB), as well as National Youth Service Corps (NYSC) postings are now available in real time and are cost-effective. It is important to expand and integrate e-governance into other services that have not yet been incorporated, as well as to rural areas in Nigeria (Muhammed, et al, 2010; Adebiyi, Akpan-Obong & Abasilim, 2016; Ridman, 2015). The National Information Technology Development Agency (NITDA) has emphasized that e-governance reduces waste, saves time, and promotes simple, ethical, accountable, responsive, and transparent conduct in the delivery of government services (Ridman, 2015).

Import of Information and Communication Technology (ICT) in the Institutions of Higher Learning

The use of ICT in administration is a basic shift from the traditional setting of administration to the Information, Communication and technological in the 21st century. The Information and Communication Technology (ICT) has ushered in a new dimension in the management of information. Consequently, Electronic Administration (E-Administration) has become an integral tool in the hands of some tertiary institutions in Nigeria. This has been shown to have offered affordable, efficient, and flexible learning environment for rapid growth (Osakade, et al, 2017). It has also been shown to have revolutionized higher institution in various ways; such as, increasing access to post-secondary instruction, improving the availability of educational resources, and facilitating meaningful interaction amongst learners.

The need for educational administrator in Nigeria tertiary institutions to acquire electronic literacy skills cannot be ignored, every modern administrator ought to acquire knowledge and skill in information technology, and to use internet to browse to obtain or circulate information that will enhance organizational productivity and efficiency in their jurisdiction. In addition, the administrators have to be knowledgeable with the various software packages available like the Microsoft word, Microsoft word excel, data base etc for the use of data processing or management of information technology in their respective field. Hence E-Administration enables administrator in the running and management of institutions of higher learning and more importantly changed induced in the way staff interact and participate in the administration of the system. E-Administration has gained it course in Nigeria higher institution because of the mandate by the NUC that Universities should be assessed and ranked through the level of the functionality of its website, network structure and its associated academic portal (Mormah, 2010). However, there are many challenges confronting the model such as information intelligibility, database security, data interoperability, learning and adaptation through virtual platforms, adoption of expert systems and awareness creation for an e-institution. The challenges are indeed numerous and cover all domains of educational administration, such as course registration, accurate and updatable staff/students data profile, hand-out syndrome, financial records and control, staff research and development, academic programs, Geographic Information systems and many other exogenous factors.

The foregoing notwithstanding, the high cost of administering tertiary institutions reinforces the need for an alternative management framework that reduces cost at the long run but optimizes the University's objective function. This scenario fits the e-concept. The National Universities Commission of Nigeria has over the years argued that for universities to achieve their mandate they need efficient management of its internally generated resources and an open access to data and information needs of the community. It is foreseen that the introduction of e-Administration will act as a pathway in generating significant or even massive benefits for staff and Economic development in tertiary institutions. For example, the economic impact of establishing an Enterprise Portal which presents an electronic bundle of online resources which functions with increasing effectiveness in database creation and relevant data access is a point to remember. The expected benefit accruable from an efficient E-Administration and its impact on administrator will enhance prompt institution profitability (Mormah, 2010). In addition, e-administration is used in some tertiary institutions to try and improve efficiency, reduce costs and improve on the existing education delivery system. Since it is the fundamental assignment or responsibility of the administrator to plan or initiate administrative processes as well as store and retrieve former policies, decision reached at past meetings to guide the boards or committee decision, it is then necessary that the administrator has to

acquire electronic literacy i.e. that ability to make proper use of the computer, assess the internet facilities, process, store and retrieve information for the progress of the system (Osakade, et al, 2017). ICT and E-administration makes room for fast access to data. It keeps storage requirements to a minimum. It allows data to be accessed by more than one person at a time. There is better security. Data can be coded. Fewer staff needed to be employed etc. Data is kept inside the computer system and cannot get misplaced. Facilities to share common data such as stores, records, employees' records, financial records with the government can be held in a central computer which allows different departments within the organization to view information that will be of help to them in their planning and taking decision for the future (Mormah, 2010).

Information and Communication Technology and the Management of Federal University Lokoja

The Federal University Lokoja was established along with other eight (8) new Federal Universities on the 16th February, 2011 following a pronouncement by then President Goodluck Ebele Jonathan. Soon afterwards, a Vice-Chancellor and Registrar in the persons of Professor Abdulmumini Hassan Rafindadi and Mrs. Habiba Anavoza Adeiza were appointed. The second Vice-Chancellor of the University, Professor Angela Freeman Miri, was appointed on 25th February, 2016, while the third Vice Chancellor, Professor Olayemi Akinwumi, assumed duty on Monday, 15th February, 2021. The institution currently has its second Registrar in person of Mr. Usman Suleiman Obansa. The University is sited at Lokoja, the Capital city of Kogi State of Nigeria, in the North Central political zone.

The utilization of ICT in the administration of Federal University, Lokoja, is as old as the university itself. This is because the University started with the establishment of ICT centre, which was charged with the responsibility of all online activities. Since then, students' admission processes, student registration, payment of school fees, and upload of students' results have been done online. The University software is developed and coordinated by the ICT of the institution. The ICT of the University is entirely domesticated; hence its operations are not under any external service developer.

The First Strategic Plan of the University (2013-2018) essentially made provisions for the growth and expansion of e-administration as encapsulated in its ICT development roadmap. In the Strategic Plan, the University intended to procure and install internet facilities and additional telephone lines in all offices to enhance timelines in information delivery and save cost on personnel. It was also in the University Plan to enhance the existing ICT infrastructures through acquisition of more effective facilities, recruitment of more qualified personnel, creation of more internet hotspots for staff and students and the establishment of stronger relationship with the Nigerian Communication (NCC). Also in the Strategic Plan is the establishment of E-learning Management System (e-LMS) to enhance teaching, learning and research.

Information and Communication Technology and the Management of Kogi State Polytechnic, Lokoja

Kogi State Polytechnic was founded in December 1992 by the first Executive Governor of Kogi State, Prince Abubakar Audu, under an amended edict No. 6 of 1994. The Polytechnic commenced operations in January 1993 at the Government Science Secondary School, Lokoja and Osara Campus with Dr. Isa I.A. serving as the first Rector. The primary mission of the Polytechnic is to produce skilled and competent manpower for commerce and industry using standard facilities and efficient

personnel for the benefit of humanity (Kogi State Polytechnic, 2024). The Polytechnic has, since inception produced competent men and women in the Sciences and allied disciplines, Social Sciences and the Humanities who are doing very well in their chosen endeavours. Below is the total number of National Diploma and Higher National Diploma graduates produced by the institution in the last five years. The use of ICT in Kogi State Polytechnic, Lokoja started as far back as 2009 when the service provider called Cyber Space took over the online activities of the Polytechnic. Since then, all admission processes, students' registration as well as payment of school fees have all been done online. The Polytechnic ICT monitors and coordinates all the software developed by the Cyber space, and their contract lasted for ten years. After the termination of the Cyber Space contract, the Polytechnic went into partnership with a service provider called DTHRIZ, which is now responsible for the online transaction of the Polytechnic. Currently, all admission process, students' registration and payment of school fees are all done online. DTHRIZ are currently working to key into other areas to make Kogi Polytechnic complete ICT compliance.

In May, 2020, the new administration of the institution under the leadership of Dr S.O. Usman, announced that its priority was the promotion of e-governance in the institution. As a first step towards actualizing the goal, the ICT Unit was upgraded into a full directorate known as the Information Technology Resources Centre, and a director was immediately appointed to oversee its operations. In general terms, the Information Technology Resources Centre (ITRC) was charged with the responsibilities of coordinating a seamless transition from paper to paperless administration, facilitating the conduct of Computer Based Tests (CBT), harmonising and fortifying the admission process to check on fraud and strategising for effective deployment of internet services in the Polytechnic. These are principally done with the aim of minimising cost and exploring ICT-based revenue potentials for the Polytechnic. In specific terms, the Directorate was charged with the following mandates:

(i) Responsible for providing infrastructure for automation.
(ii) Implementer of governance for the use of network and operating system.
(iii) Assisting operational Units by providing them with the functionality they need.
(iv) Providing support to computer users in the Polytechnic such as installing new software, repairing hardware problems installing hardware.
(v) Trouble shooting problems and training staff on how to use new software programmes.
(vi) Eliminating security risks.

Impediments to the Adoption of Information and Communication Technology (ICTs**) in the Management of Tertiary institutions in Kogi State**

Information and Communication Technology (ICT) generally is faced with many challenges. Some of these challenges include: a large urban-rural imbalance in infrastructure, instructional materials and the required human resources for the use of ICT. High costs of hardware, software and other infrastructural facilities. Obsolescence of hardware and the need for replacement after just a few years of use. Inadequate and poor utilization of existing resources, includeing Radio and TV in the instructional processes (Ijov & Wombu, 2019). According to Nwankwo (2013) as cited in Ijov & Wombu (2019), the obstacles to ICT implementation in tertiary institutions include: insufficient number of computers, teachers' lack of ICT knowledge and skills, difficulty in integrating ICT into instruction, scheduling computer time, insufficient peripherals, inadequate software copies, limited teacher time, inadequate simultaneous access,

inadequate supervision staff, and lack of technical assistance. Other common problems associated with the effective implementation of ICT include lack of qualified ICT personnel, equipment cost, management attitudes, inconsistent electrical power supply, inadequate telephone lines, particularly in rural areas, and non-inclusion of ICT programs in teachers' training curricula and at the basic levels of education. Nwankwo (2013) cited in Ijov & Wombu (2019), summarizes these challenges as limited equipment, inadequate skills, minimal support, time constraints and teacher's own lack of interest or knowledge about computer.

According to Gbadamosi (2006), the major challenge against the use of ICT in higher education is funding. Education is grossly underfunded in Nigeria and this has affected many areas in education. For example, the funding of ICT project, training and retraining of teachers, provision of technological infrastructure, development of software packages and maintenance of electricity reducing station. The ever-increasing complexity in the modern society and rapid modification of technologies call for a continuous expansion of the volume and variation of required knowledge, skills and abilities to thrive the technological environment. The quest for new information technologies and continuous improvement remains a challenge in ICT (Johnson, 2007).

Theoretical Framework

Fidler's **theory of Mediamorphosis** is considered most relevant to this case study. For the purpose of justification, it is important to take a brief look at the central tenet of the theory once more. According to Fidler (1997), the mediamorphosis framework attempts to explain the processes of change and the effects of these changes on media technologies and the people who use them. It takes a broad view of the technological changes that occur in the media landscape by considering the social, political, and economic factors that affect when and how new communication technologies are introduced into, and evolve within, a society over time. Fidler established six principles based on Roger's evolution model, which highlight the significant impact of technological change in the media environment on society. These principles include delayed adoption, co-evolution and co-existence, metamorphosis, propagation, survival, and opportunities and needs.

The conceptualization was based on the Darwinian theory of survival and struggle for limited resources; and it is driven by three key factors (Fidler, 1997). These are:

i. Complex interplay of perceived needs: The collective requirements of companies, technologies, and social forces that generate and develop new media technologies.
ii. Competition and political pressures: The increase in economic activity due to market liberalization and the political push for transparency, free speech, and reduced state control over media have led to more options for consumers. This has resulted in competitive behavior among media outlets, such as the rise of broadcasters in India.
iii. Social and technological innovations: Social and technological innovations have played a significant role in the transformation of media over time. Social developments, such as the use of symbolic paintings and carvings for storytelling, have been complemented by technological inventions, including the mechanical printing press created by Johann Gutenberg. These have evolved from analog computed devices to modern digital technologies and computing systems.

Considering the principles earlier explained and the factors outlined by Fidler therefore, the theory could be considered as the most appropriate for the study. To make the relevance clearer, it is important to emphasize that the thrust of this study is the determination of the extent of the adoption of e-administration in the effective management of both human and material resources in tertiary

institutions in Kogi State Government, North Central Nigeria. In making such determination, the six principles of the theory would readily come into mind. In essence, there is bound to be interrogation of the mode of the adoption (early, late or none at all), whether the adoption was radical (without due regard to the hitherto existing means of governance), whether there were changes in the adoption and usage of the technology as developments occur (metamorphosis and propagation), and whether the deployment of the governance mode is specifically targeted at solving problems in specific areas of needs or as dictated by opportunities. These, it is hoped, will go a long way in addressing the issues raised in the objectives of the case study. To apply the theory to the case study therefore, it is importance to recall the conceptual understanding of e-administration with a view to contextualizing the discourse in synergy with the general direction of the theory. In this regard, attempts at clarifying the subject matter of e-administration essentially capture the following concepts as integral:

i. Application of information and communication technology
ii. Diminishing pen to paper involvement
iii. Ease in communication or information flow
iv. Improvement of administrative processes
v. Ease of administrative processes and quick actions.

But considering the needs factor, the political pressure and the innovations in technology as witnessed globally (as espoused in the Darwinian Principles), can we say that higher institutions in Kogi State have adopted this technology in a way that would ease means of doing business? In essence, the six principles of the theory, namely delayed adoption, co-evolution and co-existence, metamorphosis, propagation, survival and opportunities and needs require being brought into focus to see how they interrelate in the management of the affairs of the institutions. This will create opportunities to pick possible loopholes and advance measures that will lead to the effective administration in the institutions involved.

From the application of the theory of mediamorphosis, it is quite clear that the following issues can be interrogated to address the objectives of the study:

i. whether it was a case of no, delayed or early adoption of the tools of e-administration in the institutions and what effect any of those variables could have had on the running of those institutions;
ii. whether it was/is a case of co-existence or co-evolution of the old means administration in those institutions and what could have been the situation of general administration in the midst of such interrelationship;
iii. Whether the application of e-administration in the institutions was/is an optional measure that depends on a particular and what interest was/is involved.

The analysis of the positions of these contending issues (which are the central tenets of the Theory of Mediamrphosis) in the management of the institution would clearly situate how the e-administration is deployed in managing tertiary institutions in Kogi State. It therefore makes the theory central to the fundamentals of the study.

Findings

1. The full entrenchment of ICT was a policy priority of both institutions, but that the institutions were, however, still combining the electronic and paper/ink as means of institutional governance. In other words, it can be deduced that while there were efforts to entrench e-administration in the institutions, such measures had not yet fully manifested in the governance process.

2. The ICT competency of members of management, staff and students of both institutions with particular emphasis on issues related to e-administration shows that the members of management and staff of both institutions were yet to acquire the skills required for the automation of e-administration. That notwithstanding, respondents were of the position that students of both institutions had considerable level of the ICT skills.
3. The policy direction of both institutions had not touched positively on the use of e-facilities required for the discharge of the e-administrative responsibilities. This is however with the exception of library resources which show that both the Federal University Lokoja and Kogi State Polytechnic have committed resources to ensure e-presence.
4. The obstacles to effective ICT implementation in tertiary institutions include: inadequate infrastructure, limited internet connectivity, digital divide, resistance to change, lecturers' lack of ICT knowledge and skills, difficulty in integrating ICT into instruction, scheduling computer time, insufficient peripherals, inadequate software licenses, insufficient teacher time, inadequate simultaneous access, inadequate supervision staff, and lack of technical assistance.

Conclusion

Findings in this study have shown that the selected institutions have not sufficiently imbibed the technologies required to ensure full implementation of ICT. While there were indications that the leadership made appreciable use of technologies like phone calls and text messages, e-mail, and social media platforms like Facebook and twitter, there were also indications that video/picture/audio sharing channels (like Podcast, Instagram, YouTube and Skype), intra-net etc were not given considerable attention. It was therefore established that the institutions still heavily relied on ink/paper administrative system while making skeletal use of the e-aspect. While it is discovered that the relatively new status of some of the new technologies and low ICT competency on the part of the institutions might be responsible for such imbalance, it can also be stressed that the institutions could still do in the area of resource commitment for robust e-administration.

Recommendations

In view of the findings, the following recommendations are hereby put forward for proper guidance and necessary actions.

1. Although there were considerable indications that both institutions' leadership were desirous of adopting ICT in all sphere, they still need to commit substantial resources required for the actualization of the desire. This can be achieved via strategic planning and effective budgeting. The institutions should leverage on Public Private Partnership as an avenue for harnessing funds that would invariably ensure the availability and utilization of ICTs in the institutions
2. Although it is practically not advisable for an institution to make use of all available new communication channels while adopting e-administration, it is quite instructive for the institutions to consider imbibing the most popular outlet(s) in their respective area of operations in line with the popular demand of their audiences and in a way that will strengthen their corporate presence both locally and internationally. Hence, the institutions should carryout policies that give priority to ICTs that have direct impact on educational activities in the institutions.
3. The twenty first century being a digital one with its evolving demand has imposed the need for managers of institutions of higher learning to constantly update their knowledge in

virtually all aspects of the new technology; this is more so as the study suggests that the knowledge of the members of management and staff of both institutions in respect of ICT competency still leaves much to be desired. The institutions should as a matter of urgency ensure adequate and periodic training and retraining of staff on ICTs for effective and efficient utilization. There should be proper orientation and sensitization of all the staff of the institutions to keep them abreast with the requisite knowledge about ICTs.

4. Challenges such as inadequate infrastructure, limited internet connectivity, digital divide, and resistance to change must be addressed to fully harness the potential of ICT in managing tertiary education. Collaborative efforts between governments, educational institutions, and the private sector are also crucial in overcoming these challenges and realizing the benefits of ICT in education.

References

Adams, L. (2003). Information and Communication Technologies in Higher Education in Africa: Initiatives and Challenges. Journal of Higher Education in Africa, 1(1), 195-221

Adebiyi, A. A., Akpan-Obong, P., & Abasilim, U. D. (2016). Information and Communication Technologies for Governance in Nigeria: Achievements, Challenges, and Opportunities. https://core.ac.uk/download/85162297.pdf

Adeyemo, A.B. (2011). "E-government implementation in Nigeria: An assessment of Nigeria's global e-gov ranking". Journal of internet and information system Vol. 2(1), pp. 11-19

Asgarkhani M (2005) "The effectiveness of e-service in local government: a case study". *The Electronic Journal of e-Government.* 3(4), pp 157-166.

Ayoola T. J (2013).The effect of Cashless Policy of Government on Corruption in Nigeria. *The International Review of Management and Business Research.* 2 (3).

Bhuiyan, M.S.H (2011) "Public Sector eService Development in Bangladesh: Status, Prospects and Challenges" Electronic Journal of e-Government. 9 (1). pp15 - 29.

Coleman, S. (2008), "Foundation of digital government" in Chen, H., Brandt, L., Gregg, V. et al (eds), *Digital Government: E-Government Research, Case Studies, and Implementation* New York. Springer Science+ Business Media.

Chukwuemeka, E.E.O, Ubochi, E.I. and and Okechukwu, E.U. (2017). "Effect of e-government on service delivery in Federal University Ndufualike Ikwo, Ebonyi State". *Review of Public Administration and Management.* 5 (1).

Dhanavandan, S., Esmail, S. M., & Nagarajan, M. (2012). Access and awareness of ICT resources and services in medical college libraries in Puducherry. *Library Philosophy and Practice (e-journal)*, *750*.

Diyaolu, B. O. (2018). Influence of demographic characteristics on utilisation of EIRs by postgraduate students in three selected universities in South-West Nigeria. *Library Philosophy and Practice*, 1.

Dunleavy, P., and Hood, C. (1994), "From Old Public Administration to New Public Management". *Public Money and Management*. 14 (3). pp. 9-16.

Fang, Z. (2002), E-government in digital era: concept, practice and development, *International Journal of the Computer, the Internet and Management.* 10 (2).

Fatile, J.O. (2012). "Electronic governance: myth or opportunity for Nigerian public administration". *International Journal of Academic Research in Business and Social Sciences September. 2 (9.*

Fidler, R. (1997). *Metamorphosis: Understanding New Media.*California: Pine Forge Press.

Gasco, M. (2003). "New Technologies and Institutional change in Public Administration", *Social Science Computer Review*, 21(1).

Gbadamosi, L. (2006). Challenges of e–teaching profession and ways forward: An educational planners' view. Paper presented at ICT workshop organizing teachers' Reguistration Council of Nigeria (TRCN). Adeniran Oginsasnya College of Education, Ijanikan, Laos, 2nd – 8th July.

Gberevbie D. Oyeyemi, A.I. and Excellence O, (2014). The role of information and communication technology on transparency, trust and good governance in Nigeria. *Electronic Journal of E-Government, Romania.*

Heeks, R., (2003). *Achieving Success/Avoiding Failure in Egovernment Projects,* IDPM, University of Manchester.

Ifinedo, P., and Uwadia, C. (2005). "Towards e-governance in Nigeria: Shortcomings, successes, swish or sink". In *Proceedings of the International Federation of Information Processing (IFIP) WG 9.4 Conference* (75-86), Abuja, Nigeria.

Ijov, T. M. & Wombu, R. N. (2019). Impact of Information and Communication Technology on Tertiary Institutions. BSUJEM Vol. I (2).

Johnson, I. (1997), *"Redefining the Concept of Governance*." Consultant for the Political and Social Policies Division Policy Branch Canadian International Development Agency (CIDA), July.

Kehdinga G. F. (2019). The Role of Information and Communication Technology in Tertiary Education in Africa: *International Journal of Civil Engineering and Technology* (IJCIET) 10(12), 60-69, Article ID: IJCIET_10_12_006

Larsen, K. and Vincent-Lancrin, S. (2005). The Impact of ICT on Tertiary Education: Advances and Promises. OECD/NSF/U. Michigan Conference "Advancing Knowledge and the Knowledge Economy" 10-11 January 2005 Washington DC

Lubega, J.T (2017). The Role of ICT in Africa's Evolving Higher Education Sector. Retrieved on May 20, 2019 from www.Ruform.Org

Margetts, H (2005). "Electronic Goverment: A Revolution in Public Administration", in Peters, B.G and Pierre, J (eds), *Handbook of Public Administration,* London: Sage Publications.

Mathevula, M.D and Uwizeyimana, D.E (2014). The Challenges Facing the Integration of ICT in Teaching and Learning Activities in South African Rural Secondary Schools. Mediterranean Journal of Social Sciences. 5(20), 1087-1097

Modibbo, J. H & Fashola, M. O. (2022). Impact of ICT on Tertiary Education Quality in Nigeria. International Digital Organization for Scientific Research IDOSR *Journal of Experimental Sciences* 7(1) 126-136, ISSN: 2579-0781

Mormah, F. (2010). Application of ict in e-administration in tertiary institutions: prospects and challenges. *The Nigerian Journal of Research and Production. 16 (2).*

Murgor, T.K. (2015). Challenges Facing Adoption of Information Communication Technology on African Universities. Journal of Education and Practice. 6(25).62-68

Olatokun, W.A. and Adebayo, B.M. (2012) 'Assessing E-Government Implementation in Ekiti State, Nigeria', *Journal of Emerging Trends in Computing and Information Sciences*, 3 (4). Pp. 497-505.

Onuigbo, R.A. and Eme, K.E. (2015). Electronic governance & administration in Nigeria: prospects & challenges. *Arabian Journal of Business and Management Review (OMAN Chapter)*. *5 (3.*

Osakede, K.O., Ijimakinwa,S.O., Arijeniwa, W., Adesanya, O.*T. and Ojo, D.A. (2017).* The impact of e-administration onservice delivery in Adekunle Ajasin University Akungba-Akoko, (AAUA) Ondo State, Nigeria. *Management Studies and Economic Systems* (MSES), 3 (3). Pp.173-182,

Oluwayemi, I. O. & Ndakasharwa, M. (2020). A Review of ICT Literacy Skills in African Tertiary Educational Institutions. International Journal of Information, Library & Society 9 (1).

Oshionebo, E.E. & Fatoke, A.S. (2017) Tertiary level e-governance and students' empowerment for future leadership role performance: a case study of University of Lagos, CUCEN.

Ricahrd, B. (1993). "Technophobia and technophilia". British Journal of Psychotherapy. 10 (2). Pp. 188-95.

Ridwan, S. M. (2015). Electronic Government and the Future of Digital Age: A Road Map of Nigerian Government (Prospects and Challenges). https://core.ac.uk/download/235049613.pdf

Rogers, M. E. (2003). *Diffusion of Innovations Fifth Edition*, New York: Free Press.

Sharma P. (2009). Approach to ICT in Library Training, Education & Technology: Issues & Challenges. ICAL,Poster paper.

Surjadjaja, H., Ghosh, S., & Antony, F. (2003) "Determining and assessing the determinants of e-Service operations." *Managing Service Quality Journal*. 13 (1), pp. 39-53.

UN E-Government Survey (2008). From E-Government to Connected Governance, United Nations Department of Economic and Social Affairs/Division for Public Administration and Development Management, ST/ESA/PAD/SER.E/112, New York.

Yusuff, M (2005). Information and communication technology, and education: an analysing the Nigerian national policy for information technology, *International Education Journal. 6(3): 316- 321*