THE EMERGENCE OF POST-MODERN LIBRARIES: FROM SCROLLS TO SCREENS

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Abstract

The essence of this paper is to examine the progress of information storage resources from stones, rocks, tablets and scrolls to screens. As an explanatory paper with some classic illustrations in reservation and transmission of knowledge, the paper notes that changes in human society are ubiquitous and pervasive; affecting all facets of human endeavor. The paper also notes that the most propelling factor in these changes is science and technology. It is the catalyst that brought about the changes; in other words, it is science and technology that define and continue to define social realities. Thus in the past, stones, rocks, and later scrolls were accepted as valid and practical means of preserving and transmitting knowledge. By the 15th century, when printing machines were invented, it was seen as a great progress in human society. In this contemporary era, life and human activities cannot be imagined without digital programme (hardware and software). The paper concludes that the progress in science and technology is pervasive and that the emergence of digital or post-modern libraries is to make learning, teaching, and transmission of knowledge and preservation of knowledge easier, simpler, and more convenient. To keep pace with other nations of the world, the paper suggests that scholarships should be awarded to Nigerians to study robotic engineering, machine learning, and artificial intelligence.

Keywords: Postmodernism, Digital Libraries, Digitalization, Information Resources, Internet Services, Scrolls and Screens.

Introduction

Across the globe, innovations brought into fields of humanities, agriculture, engineering, vocational studies, management sciences, journalism, library and information by science and technology, cannot be overestimated. In this contemporary era, science and technology have contributed immensely to generating enormous information that is better organized, processed, stored, easier to disseminate, and highly accessible across national boundaries (Adegbore, 2011). This has made librarians abandon traditional printed resources to digital library resources.

Chuku (2022) emphasized that the essence of science and technology is to make life and human activities easier, cheaper, convenient, and faster. This underscores the importance of postmodern libraries and/or digital libraries, with overwhelming advantages over traditional libraries. Digital libraries are faster, easily accessible, and less cumbersome to librarians and

users. Scholars over the globe can access the same material at their convenience, it is not time-bound, and it can be reproduced without wear and tear, (Akanwa and Anyanwu, 2017). In a nutshell, information resources have metamorphosed from stones, rocks, tablets, scrolls, and printed resources to screens.

To enunciate this, the paper is categorized into introduction, conceptual clarification, review, analysis, conclusions and recommendations. A critical examination of the subject indicates a quantum leap over the centuries with particular reference to the evolution of the library, what is responsible for this revolution is man's ingenuity, power of imagination, and creativity.

Conceptual Clarification

Library
The very pivot of any institution of learning and or any social institution is the collection of relevant works. Every discipline has its work; no institutions of learning claim its status without a library and or a professional who collects and manages the library - the Librarian. Agulou and Agulou (2002) defined libraries as social institutions created to conserve knowledge, preserve cultural heritage, provide information, undergird and underpin education and research, and serve as fountains of recreation. A library could also be conceptualized as a building or room containing a collection of books, periodicals, and sometimes films and recorded music for use or borrowing by the general public or the members of an institution (Online Oxford Dictionary). These two definitions are perhaps not comprehensive enough. Another dimension of a library as recorded by Miriam Webster Dictionary that a library is a place in which, musical, artistic, or reference materials (such as books, manuscripts, recordings, or films) are kept for use but not for sale (miriam-webster, 2022).

As apt as these definitions may appear, they may not appropriately describe today's library, as today's library includes physical or hard copies, digital or soft copies, the library may not be a physical location or maybe both physical and virtual often described as "library without walls" Modern institutions have e-libraries because the 21st-century library has become less of a physical space, but more of relationship between people who access, use and share information (Google scholar, Academia and Research gate). Librarianship is a profession concerned with acquiring and organizing a collection of books and relevant materials in libraries and servicing readers and others with these resources (https://collins-dictionary.com/liberian-ship). They can assist researchers in finding materials and resources. Worthy of note here, is that the responsibilities of Librarians varies depending on the type of library.

Digital library
Digital libraries are organizations that provide the resources, including the specialized staff to select structure, offer intellectual access to interpret, distribute, preserve the integrity of, and ensure the persistence over time of collections of digital work so that they are readily and economically available for use by a defined community or set of communities. The International Federation of Library Association, (IFLA, 2014), defines a digital library as an online collection of digital objects, of assured quality, that is created or collected and managed according to internationally accepted principles for collection, and development and made accessible coherently and sustainably, (Agha, Ukommi, Ekpenyong and Effiong, 2020) described a digital library as a special library with a focused collection of digital objects that can include text, visual material, audio material, and video material, stored in electronic media formats (as opposed to

print), objects that can include text, visual material, audio material, video material stored as electronic media formats (as opposed to print, microform or other media).

Review of Related Literature

Eguavoen (2011) notes that the emergence of computers has had dramatic effects on human society, more so in education, by extension; library science and information have noticed remarkable improvements from rocks, stones, and scrolls to screens. The development of computers in microelectronic and communication technologies has radically changed information resources. The traditional libraries were dominated by print publications and they were accessed manually, the traditional libraries were mostly stand-alone. A paradigm shift occurred as a result of the change from stand-alone libraries to Internet, automated, digital, and virtual libraries. Akanwa, et al (2017) also emphasized that multimedia and the internet have further reduced the tasks of librarians and information professionals.

In the past, the library was a book focused institution; catalogues were done via paper works. Mahmood (2010) notes that the emergence of new technologies has brought many changes to the way libraries function such as storage, retrieval, dissemination of information, and provision of services to users. In contrast, a post-modern library is fully automated. Libraries that cannot adjust to this new reality cannot survive. In this new trend, Adegbore (2011) emphasized that libraries use digital resources for better services and satisfaction of diverse users. For libraries to be up to date, it has to be digitalized. This is the process of converting analog information such as pictures, audio files, messages, and printed materials into digital formats. Effiong, Ekanem and Ottong, (2023) described digitalization as the process of preserving, liberalizing, and internationalizing access to documents with the ultimate aim of improving their usability. In other words, digitalizations are the representation of an object, image, sound, and document or signal usually an analogue signal into electronic devices.

Types of Library

It is a contentious issue among Librarians. Some authors identified four, and others identified more than four. However, Nnadaozie (2007) grouped libraries into 5 distinct categories; Academic libraries; Serving colleges and universities Public libraries; serving cities and towns School library; serving kindergarten Specialized libraries; such as hospital libraries, music libraries, military libraries, royal libraries, etc.

The History of the Library

Agulou and Agulou (2002) traced the efforts of man in the past to document his thoughts, images, impressions, and events through writing on rocks, stones, bark of trees, metals, clay, and paper to give some permanence and enable him to retrieve these records. The history of the library as traced and enunciated by Akanwa and Anyanwu (2017) could be traced under three epochs, ancient library, medieval, and modern library. The ancient library was traced to Sumerians 3000BC, they wrote on clays; this could be described as the first phase of the library. Others who followed within this era were the Egyptians, Assyrians, Greeks, and Romans. Medieval libraries could be traced to the activities of Christian missionaries who were able to collect manuscripts championed by France and Great Britain. The Muslim world also contributed to the medieval library. The modern library is characterized by the printing machine; the

manuscripts were replaced with books and for the very first time, books were arranged on shelves at the Vatican Library in Rome.

Other libraries established were the Sorbonne University Library in Paris and the State Royal Library in France; the same was applicable in Great Britain. Industrial Revolution: Virtually all developments today owe their origin to the Industrial Revolution; by far, the Industrial Revolution had a tremendous influence on the establishment of modern libraries and by extension influenced the profession of librarianship. The term industrial revolution was coined by a British economic historian, Arnold Tobey, he coined the term to describe the economic development in Britain from 1760-1840 (Ashton, 1975). Some historian refers to it as an era of stupendous achievements. The Industrial Revolution marked a fundamental alteration in human society as it transformed most traditional institutions into modern institutions (library inclusive) it had far-reaching consequences in all facets of human endeavor. The Industrial Revolution is a continuum with its first phase, 1760-1840, second phase 1840-1950, third phase 1950-2009 and then fourth phase currently running 2009-present (Chuku, 2022).Gunaratne (2001) affirmed that there are three communication revolutions in human history; they are writing, printing, and the advent of telecommunications-computer and digitalization.

Digital or Postmodern Library - An Analysis

The whole essence of science and technology is to make human activities easier, faster, more convenient, and more efficient (Chuku, 2022). Today, virtually all human activities are controlled by electronic devices. In the AI Revolution (artificial intelligence revolution), activities carried out by humans could be replaced by robots. Today's library can exist without walls, 50,000 copies of books in a library could be reduced to megabytes. This is contained in one single electronic device; an individual could therefore pocket a whole library in his suit.

Furthermore, research is much easier, as a researcher can log onto the internet and access millions of relevant materials from the comfort of their homes and offices. Through digital screens, graphic illustrations are better made as seen in architectural designs and medical studies. All these are achieved through electronic information resources. Electronic information resources (EIRs) are a generic term for all information resources in electronic formats such as CD ROMs, floppy discs, Ebooks, Epubs, etc.

Unarguably, this form of modern library today is comparatively easier to access and retrieve. In the past, Librarians would need to catalogue, index, and arrange heavy encyclopedias on shelves. But in this contemporary era, science and technology have made it much easier, thus enhancing Librarianship in the 21st century. However, its strengths notwithstanding, modern libraries are fraught with overload and sometimes some poorly designed programmes may mislead users. As for third-world countries, energy remains a great challenge. Furthermore, how can those in rural areas access modern libraries?

Post-Modern Society

The concept of post-modernism has continued to remain a great debate among scholars. Some scholars think that the contemporary era could still be described as modern. Exponents of modernity include Jurgen Habermas and Anthony Giddens. On the other hand, a group of thinkers, Jean Baudrillard, Jean Francois Lyotard, Frederick Jameson, and Arthur Keroker argue that society has changed so dramatically that we now live in a qualitatively different post-modern society. Furthermore, they argue that this new society needs to be thought about in new and different ways. The central theme in modernity is that life, the world, and its system are far more

similar to the ground narratives of the classical theories of modernity than they vary. For post-modernists, the post-modern era is a new historical epoch that is supposed to have succeeded the era of modernity. The post-modernists tend to reject the theoretical perspectives outlined previously, as well as how the thinkers constructed their theories. The post-modern society is dominated by productive technologies: TV, radio, internet, etc. The post-modern society is therefore a technologically sophisticated society that is preoccupied with consumer goods and media images on a mass scale. Postmodern theories take a global perspective and note the ways that aspects of culture cross natural boundaries. For instance, residents of the USA may listen to reggae from Jamaica, and eat sushi (a Japanese delicacy). Fast food, a way of life in the West is fast becoming an acceptable fashion in Nigeria (Chuku, 2017).

The modern library is therefore characterized by the application of the internet; pedagogy is also affected through *gamification,* augmented reality, mobile-based library services, and green libraries where the infrastructures used are mostly biodegradable. What has changed? In response to this question, the aforementioned features of modern libraries indicate what has changed, the library has changed from a traditional library to a digital/E-library. The big question is, would libraries continue to remain relevant in the future? Artificial intelligence has continued to characterize the fourth phase of the industrial revolution. Artificial intelligence is the ability of a digital computer or computer-controlled robot to perform tasks commonly associated with intelligent beings. They can reason, discuss, and could learn from past experiences, (https://brittanica.com/artificial-intelligence).

Artificial intelligence is a wide scope embracing computer/robot applications. They are applicable in industries, offices, homes, and for military operations. AI applications include advanced web search engines (Google, Bing, Duck Duck, Google Lens) and recommendation systems (YouTube, Amazon, Netflix). Some are advanced to the extent they can recognize human speech (Alexa, Siri, Google). It can also carry out facial recognition and others are programmed to drive cars and play games requiring high intelligence like chess and checkers. Would this imply that human intelligence is no longer required or that AI would completely replace human labor?

Challenges of Building Digital Libraries in Nigeria
As earlier enunciated, the purpose of new technologies is to make work easier, faster, and more convenient, it therefore follows that digital libraries, E-libraries, or post-modern libraries have some overwhelming merits against traditional libraries. These notwithstanding, post-modern libraries are fraught with some challenges, particularly in third-world countries, one of the problems in establishing and maintaining digital collections in Nigeria is Energy. Without energy, users cannot benefit maximally from internet services due to power outages. Babatope and Nwosu (2016) identified the task of converting print materials into digital form. It is fast becoming imperative to convert print materials to digitalized documents; closing this gap requires funds. The traditional libraries have materials in analogue forms - books, journals, laboratory records, sound recordings, manuscripts, and photographs, all of this need to be converted into digital forms. Conversion to digital forms is a fast response to the electronic revolution of the 21st century.

In this era of cybercrime, the use of legal rights such as copyrights, intellectual property, etc. should not only be legislated upon but protected and guided. Network issue; networks are not steady and most internet users experience glitches thus affecting the smooth process. Inadequate skill professionals; professionals that are current with the technical know-how are

very limited thus affecting how the services would be provided for the end users. Running costs: The costs of maintaining and managing E-libraries are quite expensive for low income countries like Nigeria.

Conclusions

The fear of technology replacing human labour is perhaps as old as technology itself. During the first phase of the Industrial Revolution, particularly in the invention of printing machines; it was assumed that it would render many people jobless as the printing machine replaced the works of scriptwriters. This fear was dispelled, instead of people losing jobs, it created more job opportunities. Every invention tends to create its multiplier effects. The same was said when the computer was invented; it would send many into the streets in search of jobs, on the contrary, it created more jobs. In the same vein, the fear of cell phones affecting workers in post offices never came through because it created more job opportunities. Its multiplier effects created a chain of beneficiaries (cell phone manufacturers and sellers, technicians, accessories stores, airtime, etc.). Then again, with the application of AI and robots, the fear of joblessness arises. If in the future, robots take over thinking for humans, then Albert Einstein's fear could be justified, "I fear the day technology would surpass human interaction, the world would have a generation of idiots".

In this paper, an attempt was made to explain how humans have used imagination and creativity to preserve and disseminate information. First on rocks, stones,bark of woods, and later to scrolls. The paper argues that the modern era saw the invention of printing machines. It was a great revolution that expanded the use of information resources. The contemporary era is characterized with sophisticated technology as expressed in high information technology such, as electronic devices, multimedia, and the application of artificial intelligence in all ramifications of human endeavor particularly in the use of information resources.

Recommendations

The twenty-first century is a fast-changing era. For any part of the globe to benefit maximally in the comity of nations, that region or area must follow the trend. On this note, Nigeria must make a conscious effort by sponsoring candidates abroad to study robotic engineering, machine learning, and artificial intelligence. Information communication technology directorate of higher institutions in Nigeria should be well equipped. Institutions of higher learning should have viable e-libraries.

References

Adegbore M.A (2011). University faculty use of electronic resources: A review of the recent Literature.

Agha E., Ukommi A., Ekpenyong O. and Effiong U. (2020). Establishing the Nexus between Technical Education and Industrial Development in Nigeria. *Journal of Research in Education and Society*, 11(1), 38-56.

Agolou C.C and Agulou I.E. (2002). Libraries and Information management in Nigeria; Jos, FAB Anieh Nigeria limited.

Akanwa, C. and Anyanwu, J. (2017). Information resources in libraries; Owerri, Supreme Publishers.

Ashton, T.S. (1975). The Industrial Revolution 1760-1830, London: Oxford Universitry Press.

Babatope I.S &Nwosu M.C (2016). Establishing and Managing Digital Libraries in the Dynamic Information Environment of Tertiary Institution in Nigeria, *Ebonyi Journal of Library and Information Science* 3(1), 158-178.

Chuku C.D (2022) Science and Technology: Redefining the human society. *Port Harcourt Polytechnic Academic Research Journal*, pp 241-248.

Chuku C.D (2022) Science and technology: The changing pattern of human society; Port Harcourt, Emu integrated Services Limited.

Chuku, C.D (2017) Understanding sociological perspectives; Port Harcourt, Emu Integrated Services Digital Library Federation.(2000) https://www.diglib.org/.
Retrieved: 15th September, 2023.

Effiong, U., Ekanem, A., and Ottong, I. (2023). *Inclusive Education and Sustainable Learning* Opportunities for Persons with Disabilities in Akwa Ibom State University, Obio *Akpa Campus, Nigeria.* In: Innocent V. O. Modo, Kingdom S.Mboho, Ekaette R.Udoh and Umo U.Effiong (Eds) *Academic Practioners Research for Sustainable Development Goals in Africa.* ICIDR Publishing House: Ikot Ekpene.

Eguaveon O.E.L (2011) Attitudes of library staff to the use of ICT: the case of Kenneth Dike Library, University of Ibadan, Nigeria; *Ozean Journal of Social Sciences* 4(1), pp 1-9

Gunaratne, S.A (2001) Convergence: Information, world system and developing countries in W.B Gudykunst, communication yearbook 25 pp 153-99

EncyclopediaBritanica.(2023).https://brittanica.com/artificial-intelligence.
Retrieved: 15th September, 2023.

Meriam-webster.com.(2023). https://miriam-webster.com/library.
Retrieved: 15th September, 2023.

Collins Dictionary.(2023).https://collins-dictionary.com/liberian-ship.
Retrieved: 15th September, 2023.

IFLA (2014), IFLA/UNESCO, manifesto for digital libraries: Bridging the digital divide: making the world's cultural and scientific heritage accessible to all

Mahmood .K (2010). Attitudes towards the internet: A survey of LIS professionals in Pakistan;

Registration Council of Nigeria (2014).Standards and guidelines for e-library in Nigeria.

Merriam-Webster Dictionary. (2023). https://www.merriam-webster.com/.
Retrieved: 30th August, 2023.

NnadozieChuma (2007) Foundations of Library practice; Owerri, Springfield publishers limited
Oxford Learner's Dictionary.(2023). https://www.oxfordlearnersdictionaries.com/.
Retrieved: 30th August, 2023.

Vasanthi M.C (2005) the changing environment of academic libraries: End-user education and
planning strategies for libraries: End-user education and planning strategies for libraries
in India. Library philosophy and practice (e-journal)