

CATCHING UP WITH INNOVATIONS AND TRENDS IN LIBRARY AND INFORMATION PRACTICE: THE NEW INNOVATIVE DELIVERY STRATEGIES IN TUNE WITH 21ST CENTURY REQUIREMENTS FOR ACADEMIC LIBRARIES IN NIGERIA

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Abstract

The paper going by its purpose unveiled new innovative delivery strategies to digital knowledge in tune with 21st century requirements that there acquaintance by knowledge managers and application in digital knowledge delivery would permit catching up with innovations and trends in Nigeria library and information practice particularly in academic libraries which the paper tailored. These includes creative use of social media platforms (yutube, instagram, whatsapp, facebook, linkedIn, twitter, reddit, etc), quantum-computing, edge-computing, 3D-printing tech, 5G-tech, AI-tech, block-chain tech, and drone technologies. Digital resources values and application in libraries and, developments of digitization in Nigeria libraries also highlithed. Recommendations were made for prompt provision of sufficient fund to the libraries for exploitation of new innovations contained there in, training and re-training of librarians in the 21st century, and personal efforts by librarians to improve their skills in order to remain competent and defend their profession in and beyond 21st century.

Keywords: *Innovations, Trends, Digitization, Academic Libraries.*

Introduction

A subtheme of this conference; '**Catching Up with Innovations and Trends in Nigeria Library and Information Practice**' motivated the formation of the title of this paper as a means of establishing new innovative delivery strategies in tune with 21st century requirements for academic libraries in Nigeria to catch up with innovations and trends in library and information practice. Moreso, as a result of challenge thrown to stakeholders in education on the 27th combined convocation ceremony of the Niger state college of education, Minna by the visitor and the governor of Niger state His Excellency Alh. (DR.) Abubakar Sani Bello, who on his speech says: ***“We all know that the 21st Century is the age of innovation and rapid change which call on us particularly as teachers to begin to research into ways of improving the professional competence and fund new innovative delivery strategies in tune with 21st century requirements.”*** A call for teachers is equally a call for librarians because teachers and librarians are related professionals with common goal towards knowledge delivery, and are among major stakeholders in education. Likewise the need for librarians to begin to research into ways of improving the professional competence and to fund new innovative delivery strategies. Relatedly, Zakari (2000) earlier precast that 'the application of more advanced IT facilities will certainly create a high degree of information glut and a perpetuation of the information and perhaps literature explosion syndrome in the 21st century. And that, the need for quicker access to the maze of information might force libraries and information centres to compete with private and commercial information providers to make any meaningful impact on the society they are meant to serve. Sagir (2021) in relation to this said libraries of 21st century would depend on digital technology for information service delivery. And that, the 21st century librarians are no longer just the guardians of books; they are information providers in an environment that is constantly changing with the digital technologies in providing information services. Interestingly, libraries in Nigeria, in particular academic libraries are on strong move with other libraries across the world competing with private and commercial information providers searching and initiating new innovative delivery strategies in tune with 21st century requirements, which mostly centers on digitization and use of cutting edge technologies.

Innovation is introduction of new things, ideas or ways of doing something (Oxford Dictionary, 2009). Related to this research, innovations are initiations of new ideas or ways of library and information practice, and these are the trends in 21st centuries. A trend is a general direction in which a situation is channeling, changing or developing (Concise Dictionary, 2011). Academic libraries can not afford to be left out of current trends in library and information practice. Academic libraries are libraries of tertiary institutions; colleges of education, mono/polytechnics, universities, and the likes. The trend of knowledge digitization and other innovative delivery strategies in tune with 21st century requirement are key to supporting learning, research and teaching in these institutions of higher learning. Digitization is a new way of managing knowledge. Knowledge management is an exercise that revolves round collection, organization, preservation, and dissemination of documented knowledge. A process describes as input, processing and out in other way. Digitization is a process of converting data to digital format for processing by computer (Reitz, 2005). In information systems, it is usually refers to as the conversion of printed text or images (illustrations) into binary signals using a scanning device that allow it to be displayed on a computer screen. In the business of the library, Saeed (2019) said digitization is the use of latest information technologies (computers and accessories) in perfecting range of operations from information acquisition to processing and dissemination.

Prior to the advent of ICT, information in libraries were packaged in predominantly print form. The present development in computer technology brought about new packaging format – the digital format, which has brought a lot of progress to knowledge management though also with few challenges (Anyanwu and Dudu, 2018). Many libraries, including Nigeria libraries, are now linked up locally and internationally using ICT facilities all geared toward providing timely and cost-effective information and elimination of information explosion and fragmentation.

Nigeria is one of the biggest countries in Africa. Precisely, it is in West-Africa sub-region with a population of over two hundred million people. The utilisation of ICT by this mass population perhaps exposed it to be one of the largest utilization of ICT in the sub-region and Africa as a whole as reported by Ndagi (2015). Similarly, the same report has it that academic libraries in Nigeria are lead deployers of digital resources and cutting edge technologies in satisfying users quests. Against this background this study was conceived with the main purpose of unveiling new innovative delivery strategies to digital knowledge in tune with 21st century requirements that there acquaintance by knowledge managers and application in digital knowledge delivery would Improve library delivery system and professional competence of knowledge managers/librarians particularly working in academic libraries in Nigeria.

Innovation in LIS and Improvement in Service Delivery Over the Year

Library and Information Science (LIS) has transcended over the years and that has brought unlimited improvements in service delivery in libraries and other information practices. Information preservation was not as it is today, but it is as ancient as man. Benedon (1978) stressed that the desire to leave a record of existence seems to be as ancient as man himself; from etchings on cave walls to machine-sensible records. This desire has manifested itself in archival, library and Internet holding around the world. This could be said to have started from the development of spoken written language down the developments of printing, typing machine, computers and electronic information preservation system. Muhammad (2015) said five distant stages of developments in information preservation. They are: (i) the development of spoken/written language (printing or writing on rock-hieroglyphics, clay table-cuneiform, animal bones/shells, papyrus, parchment, codex and paper); (ii) the development of movable-typing machines, (iii) the development of photographic techniques/miniaturization of information, (iv) the development computers and digital imaging (electronic information preservation systems), and (v) the invention of Intranet that has today turned the world into information/knowledge driven society and a global village. These transformations have changed faces of the libraries and information delivery strategies, the emergence of digitalized systems and digital libraries which today have moved out libraries from the bounded corners of the wall to wherever users are. A head of this are multi-media technologies otherwise known as social-media used today to improve library services that are discussed in this paper.

Digital Resources: Values and Application in Libraries

The emergency of multi-media, automated information packaging and internet transmission have consequently reduced reliance on traditional library methods of information gathering, storage, processing, retrieval and dissemination (Zakari, 2000). Across the world, both libraries and information technology companies are not holding back in the fight for relevance in digital space. Libraries especially, continue to launch digital products and services that are designed specifically for the online community and that ease access to relevant information. This is what has turned out as the field of digital library (Saeed, 2019). Digital resources hold many

advantages such as time and place convenience, ability to search directly the text as against the catalogue records, and ability to disseminate and share information globally. Ashaver and Ekere (2013) stressed that advantages abound in the use of digital resources, that the biggest advantage is the immediate accessibility of the information. And that with digital resources, the user is always availing with a variety of formats, including PDFs, word and HTML. Digital resources are clean and free of dust and mildew sometimes associated with books on the shelves of the conventional library formats (Anyanwu and Dudu, 2018). Reading through digital resources will never cause sneezing nor leave an ink stain on the hands of researcher. On advantages of digital resources, Ogwuona (2021) stressed that with ICT users are now able to access the libraries and circulation services rendered to them without being present in the library wall and could access the best materials online through web.

Varshnavi (2017) is of the opinion that the web resources (digital resources) has given the librarians a new dynamic role to play in the society and serve the new information based in better ways than ever before because of the powerful features of the web; heterogeneous, collaborative, multi-media and powerful protocols and architecture. That, the web holding online resources has revolutionized the way people access information and has opened up new possibilities in areas such as digital libraries. Digital library to Roy (2020) is the shifting of traditional library activities and programmes that were only available to library users when they are physically present at the building of a library to an online platform. It is the digitization of activities like; resources collection, organization, preservation, retrieving, serving, transfer and overall library resources manipulation.

Developments of Digitization in Nigeria Libraries:

Digitization in Nigeria libraries is quite commendable. There is no gainsaying it that the Nigeria library industry has evolved over the years, moving from the old-fashioned traditional over-the-counter information seeking to a more sophisticated information dissemination system that thrives on technology (Saeed, 2019). Time was when it took long time or days in some cases for a particular need to be established in the library. The days of queuing up in the library hall particularly circulation desk to brow a particular library material after collecting borrower's card are vanishing for good except for special cases. The era of travelling from a far distance to access resources of a particular library or borrowing limited number of printed materials for home use have now faded into distant memory. Digital library has shortened time to reach libraries, saved lives that would have been lost to bad roads and attacks and introduced privacy in library usage because with digitization users can now sit comfortably within their domain to use materials of the libraries connected with. From the traditional roles of charging and discharging, some libraries in Nigeria have become a one-stop-shop where information seeking for everything is established from one's end (domain) without stepping out and irrespective of the time (Muhammad, 2019). This digital achievement have kicked out limitation of time occasioned by conventional libraries' service hours of 8:00am – 10:00 pm, and total closure durring weekends and public-holidays in Nigeria. In digital libraries services are available 2-4-7, i.e. twenty four hours every seven days of the week.

Nigeria libraries have continued to thrive towards being relevant in a more digital world, especially as more and more libraries opened up library activities to information technology. All most all libraries in Nigeria with specific regards to academic libraries, are taking steps to boost

the utilization of internet and digital library system to reach out patrons (Muhammad and Bida (2019). Some libraries in Nigeria have engaged the use of RDA (Resources Description and Access) as a solution to difficulties faced while using manual catalogues for seeking library resources. Haroon (2019) said it is a credit for Nigerian libraries the acceptability and application of RDA, one of the innovations in digital library industry that allow easy and quick access to a particular information resource needed in the library. Credit most also be giving to some of Nigerian libraries for introducing users specific password for accessing library resources, thereby removing the borrowers cards that were prone to fraud and displacement. Some academic libraries of universities in Nigeria, particularly of new generation private universities, have introduced users password for accessing e-resources possess by them. These libraries have always been at the vanguard of presenting users with most current and most relevant materials, making them to be on the path of achieving global best practices in digital applications. Some of these libraries have been seen integrating online catalogue and chatbots among other digital channels towards serving their clients. Some of them have also adopted Whatsapp, an instant messaging application with chat reference enabler as a means of online interface with clientele. This medium has been used to offer reference services that allow clients to make enquiry or established their needs within short period of time without leaving the messaging app. The findings of the study of Nkeiru Emezie () revealed the benefits of these innovative services and practices in Federal University of Technology, Owerre (FUTO library). The findings prove that digital innovative services and practices have helped to improve the mode of service delivery in the library. As a result, there is increase in patronage, access to databases and e-resources through the OPAC. However, Ndagi (2015) stressed that many libraries in Nigeria are yet to launch Whatsapp reference services and similar cutting-edge technologies to harness the benefits therein. With specific regard to academic libraries in colleges of education in Nigeria, Jebba (2019) stressed that they are at the turning point in digitization and usage of ICTs in delivering services. That, during the 2000s, rapid advances in digital technology application in colleges of education have provided campus researchers and students with considerably options and making libraries face stiff competition from search engines like Google and Alfa vista. Infact, the recent google forays into scholarly contents and mass digitalization have blurred the already murky distinctions between libraries and commercial services and further-sending ripples of panic to libraries and librarians who fail to look for new ways of improving the professional competence and fund new innovative delivery strategies in tune with 21st century requirements.

New Innovative Delivery Strategies in Digital Knowledge Management in tune with 21st Century Requirements

Effort here was made to review some of the cutting-edge technologies to be used as strategies in digital knowledge delivery in tune with 21st Century Requirements.

THE INTERNET: the internet is a basic technology in the development of information technology. Lutu (2020) posit that the Internet is a borderless world that have become an important tool required by the knowledge-based society to present and manage contemporary information. Moh'd, sazili (2017) of the view that the Library being the hub for information dissemination cannot, but adapt the IT solutions to its routine activities as it were, as a living organism (Ranganathan) via the web, electronic network, in whereby content is transferred via the Internet.

THE MOBILE PHONES: Mobile devices like cell phones have improved communication and enhanced the way information is being created, delivered and accessed. According to Iwhiwhu, Ruteyan & Eghwubare (2010) the 21st century librarians can provide effective library services through mobile telephones like the GSM (Global Systems for Mobile Communication). That, in support of teaching and research, the use of SMS (Short Message Services) can be employed to answer reference queries, and alert users on new arrivals and upcoming events in the institution. This could be flashed through a facility called —broadcastll where one text message is sent to all the library contacts listed in the address book on the mobile phone at once.

SOCIAL MEDIA: Social Media Platform is a medium whereby content (sound, images, videos, messages files) is broadcast to the general or selected group of people. The library been in the business of connecting people with information utilises a social media platform of Web 2.0 technologies to connect clients with their needs. Kamba (2021) revealed that Web 2.0 tools such as facebook, twitter, reddit, blogs, online groups which are also known as social media have made it possible for people to actually connect to one another through the internet. Similarly, Oshile (2021) mentioned example of social media platforms for library service delievery to include; whatsapp, facebook, instagram, twitter, youtube, reddit, linkedin, snapchat and flickr.

WHATSAPP: This is an instant messaging service for android based cell phones or smartphones that allows users to send text messages, images, videos, etc. to each other freely. It also allows the attachment of files in other formats like word, excel, PDF, etc. Whatsapp can be used in the library to update patrons on library events, to provide library services without visiting the library e.g. Ask the Librarian chat room, interaction with library users through discussion groups, and to receive comments, feedback and suggestions on how to improve library services. Whasapp can also be used to provide notable professional services such as newspaper clippings, Current Awareness Service (CAS), Selective Dissemination of Information (SDI), and Electronic Document Delivery System (EDDS).

FACEBOOK: This is a free social media website that allows users to register and create profiles on the site. It allows upload of videos, photos, sending of messages and keeping in touch with others. A library can use Facebook to post updates, provide information literacy programme / orientation, link users to new and existing resources, and to engage users with online study group.

ISTAGRAM: This is an online photo-sharing service. It allows users to edit and upload pictures and short videos through a mobile app. Libraries can use Instagram App to share visual content that allow users know what the library is all about, share library space to give library users an inviting glance into the spaces they have access to, and to provide a sneak peak, share a sneak peak about the library's latest release, new resource, new program or an upcoming events.

YOUTUBE: YouTube is an online video sharing and social media platform. It is often used for sharing videos on events, lectures, special talks, etc. YouTube channels let users upload videos, leave comments, and create playlists. YouTube can be used in the library for posting videos on conferences, workshops, library events, library tour or bibliographic instruction for the benefit of the users.

TWITTER: Twitter is a free social networking microblogging service that allows users broadcast short posts called tweets. Users can broadcast tweets and follow other users' tweets by using multiple platforms and devices. Library twitter can be used to post library events and programs, new arrivals, pictures of staff and structures of the library, entertainment of library patrons, reply to comments about the library, and links to external resources.

However, other advanced but applicable technologies in delivering digital knowledge are;

QUANTUM COMPUTING: This is a computing library programme presently designed to provide ease of use and efficiency in service delivery. Libraries could adopt the use of quantum computing to save and protect data, and for bibliographic services.

EDGE COMPUTING: This is a combination of different technologies including grid computing, cloud computing and internet of things (IOTs). This technology brings the internet closer to users, and requires less time and bandwidth to receive, process and stores data. It has capacity to stores data that is too large to be stored on network.

3D PRINTING TECH: This is a new output device that creates physical objects from digital files. As an emerging technology, 3D printing tech has gained much attention as a rapid prototyping and small-scale manufacturing technology across the world. Ray (2021) reveals that 3D printing tech is gradually been integrating into library services to support user interaction with software contents.

5G TECH: The term 5G Tech is used to describe the 5th Generation cellular communication technology. 5G is linked with big data, internet of things, broadband and mobile communication. 5G is the fastest network for now. Library needs to adopt this network to stay useful to their users in terms of providing fast information to their users.

AI TECH: Artificial Intelligence technology is a computer technology that deploy machines to do intelligent exercises man does with high capability and proficiency, the ability to think, learn fact and skills to be able to apply them. The ability to develop intelligent computer that perceive think and behave like humans is the crux of artificial intelligence. At advanced level, AI-Robotic system performs sophisticated tasks such as washing, servicing and driving of cars, delivery of messages and goods, etc. In the library, this can be deploy in shelves reading, arrangement of books, answering queries and delivery of goods and services 2-4-7.

BLOCK CHAIN TECH: Block chain is the ledger or record keeping platform of transactions. It records the date, time, participants and crucial agreement in transactions, and cannot be modified unless agreed by parties. It involves the storing of information in a distributed, tamper-resistant setting. In the Libraries, the block chain could serve as another Digital Right Management (DRM) to print copies because it protects digital first sale rights. With block chain, libraries could have access to information and also have right to protect their information from being plagiarized.

DRONE TECH: Drones or Unmanned Aerial Vehicles (UAV), according to Ogwuona (2021) were first used for military operations but other companies have started using it in delivering of parcels to their customer for commercial purposes. That, this is an emerging technology that could be used in libraries for document delivery. Drones are controlled by remote ground control

system referred to as a ground cockpit. It could be used for delivery of documents, transportation of books to designated areas because they have anchor to carry books and can save time and effort in doing this.

Conclusion

The emergence of ICT with particular achievement of knowledge digitisation has brought a paradigm shift in knowledge delivery. This paper going by its purpose has unveiled new innovative delivery strategies to digital knowledge in tune with 21st century requirements. These innovations have become useful tools in digital knowledge delivery particularly in academic libraries whose mission is to support teaching, learning and research. Thus, there acquaintance by knowledge managers and application would surely Improve library delivery system and professional competence of knowledge managers/librarians particularly working in academic libraries. In view of this, recommendations below were made:

1. prompt provision of sufficient fund to the libraries, particularly academic libraries, for them to fund exploitation of new innovations contained there in.
2. Training and re-training of librarians in the 21st century should be given priority. This is because the success or failure of a library depends on the caliber of staff working in it.
3. Apart of official grants, brarians should make personal efforts to improve their skills in order to remain competent and defend their profession in and beyond 21st century.

References

- Abubakar, S. B. (2019). The 27th Combined Convocation Ceremony Book of Speeches. Minna: Niger state college of education.
- Behdja, B. (2010). Strategies for the delivery of e-information services to support the e-learning environment at the University of Sharjah, Sharjah, United Arab Emirates. *The Electronic Library* . 28(2). Emerald Group Publishing Limited 0264-0473 DOI 10.1108/02640471011033639
- Daniel, J.O. (2021). Tools for online conferencing and learning . A paper presented at National Conference of Librarians' Registration Council of Nigeria. November, 21st - 26th, 2021 @ Abuja.
- Haroon, R. (2019). Building Library Network to Meet Users' Yearnings. College Seminar Series, 102(4).
- Jebba, M. K. (2019). Introduction to Internet Studies. Minna: Chetec print.
- Kamba (2021). Creation and Use of Social Media Platforms Innovatively. Paper presented at National Conference of Librarians' Registration Council of Nigeria. November, 21st - 26th, 2021 @ Abuja.
- Lutus, C. (2020). Literacy and the Growth of Nigeria's digital economy. *Digital Economy SearchLight* 3 (2).

- Mohd, S. S., and Khafidhah K. N. (2017). The Influence of Internet Usage on Student's Academic Performance Faculty of Information Management, Universiti Teknologi Mara, Shah Alam UiTM Selangor, Malaysia DOI: 10.6007/IJARBSS/v7-i8/3301 URL: <http://dx.doi.org/10.6007/IJARBSS/v7-i8/3301>.
- Muhammad, A. M. E and Ndagi, S. (2019). ICT Utilization in Nigeria Libraries: An Empirical Study of Libraries of Colleges of Education in North-Central States of Nigeria. *International Journal of Academic Research in Business and Social Sciences*, 7(8).
- Muhammed, H. (2019). Knowledge Integration: Key to Rejuvenation of Islamic Value System in our Society. *GUJON [Gurara Journal of Humanity Studies] – A Multi-Disciplinary Edition*, 11 (1).
- Muthu, M. P. R., Baskaran, C. (2015). Rethinking of Innovative LIS Services for Libraries in Digital Era Knowledge Librarian. *International Peer Reviewed Billibrary E-journal of Library and Information Science*. 2(2). ISSN NO. 2394-2479 Impact Factor (IIFS) - 0.331 www.klibjilis.com.
- Ndagi, S. (2015). Enhancing Library and Information Management Through the Use of Social Media. The 3rd International Conference of School Technology Education Federal University of Technology, Minna, Niger state – Nigeria.
- Nkeiru, E. (2018). Stepping Up the Ladder To Meet User Needs: Innovative Library Services and Practices in a Nigerian University *Of Technology. Library Philosophy and Practice (e-journal) of University of Nebraska - Lincoln, 1767*. <https://digitalcommons.unl.edu/libphilprac/1767>.
- Ogwuona, C. S. (2021). Re-emerging Trends and Technologies in the 21st Century, Changing Landscapes, Challenges and opportunities for Library and Information Science: An Overview. Paper presented at National Conference of Librarians' Registration Council of Nigeria. November, 21st - 26th, 2021 @ Abuja.
- Oshile, S. (2021). Creation and Use of Social Platforms Innovatively in Library Services. paper presented at National Conference of Librarians' Registration Council of Nigeria. November, 21st - 26th, 2021 @ Abuja.
- Reitz, J. M. (2005). *Dictionary for Library and Information Science*. Chennai: Libraries.
- Roy, R.T. (2020). Virtual Reality in Afri-World. [Wikipedia.org.>wiki>Afri-world](https://en.wikipedia.org/wiki/Afri-world). 2021/11/15.
- Saeed, M. (2019). New version libraries and services revolving technology. Abidjan: Greenprints.

Sagir, M. A. (2021). Emerging Trends and Technologies in Library and Information Services. Keynote Address at 8th Mandatory Conference of Certified Librarians in Nigeria organized by the Librarians' Registration Council of Nigeria (LRCN). November, 21st - 26th, 2021 @ Abuja.

United Nations (2021). Catching technological waves Innovation with equity. Technology and Innovation Report 2021 issued by the United Nations Conference on Trade and Development. New York, New : United Nations Publications10017. <https://shop.un.org>.

Zakari, M. (2000). Averting Literature Explosion Syndrome in the 21st Century. Train-the-Trainers Workshop for Academic Librarians.