

¹Iyoro, Olaide Abiodun, & ²Akanmidu, Olumide Johnson (CLN)

¹University Librarian, Federal University of Lafia, Nigeria: E - Mail: abiyoro@gmail.com
Cell-phone Number +234 803772522

²Deputy University Librarian, The University Library Department, Federal University of Lafia, Nigeria. E- Mail: olumide.akanmidu@gmail.com
Cell-phone Number +234 706 439 1111

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Abstract

Purpose: *The uniqueness and functionalities of library services in acquiring, organizing, preserving and publicly make available and accessible information resources either in an electronic or printed formats have called for re-evaluation of all institutions that work with information, data and knowledge. Digital innovation trends has automatically paved the way for knowledge sharing among Libraries, specifically, within the information professionals and institutions. This paper explores and assesses comprehensively the various facets that are involved in knowledge sharing and digital innovation that would put vast development to the practicing of librarianship globally.*

Methodology: *The exploratory approach was adopted by the study. The exploratory literature review approach is a research method that involves systematically reviewing existing literature to gain preliminary insights into an emerging or under-researched topic. It is commonly used to identify knowledge gaps, generate new research questions, and establish a foundation for further study. The major elements of knowledge sharing and digitization of library practices enabled by socialization, externalization, internalization and combination (SECI) model, are explored in detail.*

Implication: *Library and information professionals need to brace up to meet the future challenges and take the lead in every competitive environment of information as communication technology evolves.*

Value/Originality: *The challenges of the emerging digitization and knowledge sharing innovation that develops the practice of librarianship has to be regularly updated to engage the rapid growth of knowledge accumulation. The paper also elaborates on how digital innovation and knowledge sharing among libraries have improved library services in the era of information digital economy.*

Keywords: *Digital Libraries, Innovation, Information, Knowledge Sharing and Librarianship*

Paper type: *Conceptual / Exploratory*

Introduction

This article presents a range of relevant and useful technological innovation and implementation of technology application tools that could benefit libraries and librarians world-wide. The emerging

technological innovations through digitization and knowledge sharing in the practice of librarianship identify the evaluation and implementation of the application of current use of technologies in the library management and services called information digital economy.

Libraries are specifically identified to be more important in this dispensation of information society. The development of information society has acknowledged library as one of the major elements for Open Access (O.A). The uniqueness and functionalities of library services in acquiring, organizing, preserving and publicly made available and accessible of information resources either in an electronic or printed formats have called for re-evaluation of all institutions that work with information, data and knowledge. The current trends of digital information society are pushing the whole ideal education on a stressing-hole more on independent learning, teaching and researching in this era of digital age. Therefore, library practicing which serve as the key source of information on the emerging technological innovation is to create networking infrastructural modalities. Otherwise, it might limit the potentialities of practicing the profession globally.

The emerging of digitization in the practicing of librarianship focuses on knowledge sharing, distribution, collation, organization, storage, dissemination, utilization and diffusion which are the core meaning of the Library profession. Information professionals possess some specialized knowledge skills that are involved in professional capabilities which influence knowledge management and information and communication technologies. Knowledge sharing starts from an individual's daily living. For example, we watch television news, read newspapers, and interact by communicating from person-to-person, contact others via social media and checking our mail messages etc. while doing all these, knowledge and databases are being created. In most cases, only few of these were retained to be remembered in our memories which eventually become tacit or explicit knowledge depending on the usage and interpretation of an

individual. Socialization, Externalization, Internalization and Combination (SECI) model, gave meaningful conversation of information dissemination between Tacit to Tacit and Tacit to Explicit and the combination of Explicit to Explicit and Explicit to Tacit knowledge of sharing. Therefore, knowledge could be in form of information that are processed, selected and synthesized by human creativities.

So, knowledge sharing and technological innovation as it has been in the practice of librarianship in the era of digitalization focuses on the efficient method of problem – solving strategies to complement managerial skills on information resource sharing through knowledge - based - technological innovativeness. There is no doubt that knowledge sharing and digitization in all organizational sectors, especially in the library setting, helps to forecast the latest development trends both in theory and practice nature of the profession. The overall purpose of knowledge sharing and technological innovation among libraries is to facilitate averagely the use of new technologies to transmit and share the available resources for quality and effective information service delivery in digital formats. This will bridge the gaps of the circumscribed library users in terms of service provisions by the library in a given community.

The orientation of using libraries by the users has been on the increase with constant changes. These changing factors have equally challenged the levels by which library services ought to be utilized as expected by users through the use of information technologies both in the academic and public libraries. The emerging technological innovation usage and knowledge sharing among libraries have been on the increase in the recent times. The concept of digitization according to Wikipedia is an expansion of an organization where technological-based information technologies are used as an important source of innovation.

Definition of Knowledge Sharing and Digitization in Organizations

Knowledge sharing and digitization are the most current trends that every organization devoted much attention to improve upon their performance in order to achieve their mission. Woods and Tasmin (2025) stated that effectiveness of knowledge sharing activities in organization has the potential of improving customer services by bringing new products to market and reduce cost of business operation. While Woods and Tasmin both echoed that knowledge sharing is a social system that supports collaboration and integration which is normally facilitated by technology. In order words, new information technologies are being discovered and used as channels to inform users and employers the latest innovation or development that are existing in the organization. However, Park and IM (2023) defined knowledge sharing as the process of transferring knowledge from a person to another in an organization. Prusak and Davenport (1918) described knowledge as a derived outcome of framed experiences, values, contextual information and expert insights that provide a framework for evaluating incorporating new experiences and information. The above definitions of knowledge sharing show that knowledge comprises all the attributes of creation, acquisition, control, organization, preservation, sharing and distribution in various means of communication devices as they are available to be used in the libraries. It is obvious that improvement can only take place upon what was created or invented. Therefore, the basic purpose of invention in any given organization is to produce new knowledge that can be developed upon. Innovation as defined by Akam (2011) is a practice and process which captures, acquires, manages and diffuses knowledge with the aim to create new knowledge which will support to produce and deliver distinctive and

idiosyncratic kind of products and services. However, innovation could take place primarily in reference to effect changes in form of productivity and functionalities in such a way that old inputs can be combined in new ways through technological innovation mechanism using reference digital services (RDS) in the libraries.

Digitization in the other hand is the process of using technologies to execute old or traditional or manual services in organizations. Technological innovation in the libraries can be referred to as the process of developing or implementing new ideas, which may be a combination of old schemes to challenge the present formula through electronic means of application called technologies to perform library routine services. Luke (2010) reiterated that technology has changed how information are being exploited and this has direct consequences for both the professional practices of librarianship and the theoretical ideas that underpin those practices. Libraries play a fundamental role in our society, therefore, the stress is high for librarians as professionals and being the collectors and stewards of the nations' heritage, adequate recognition should be accorded the profession in the society.

This is in line with Owoye, Abolarinwa and Timothy (2016), quoting Reding (2015) with the opinion that the practicing of librarianship encompasses the role of organizers of knowledge in the books collected, adding value by cataloguing, classifying and describing it to public as institutions who assures equality of access for all citizens to project knowledge of the past, present and lay it down for the future. Obviously, library collections in different countries represent their cultural identities. Therefore, knowledge sharing provides incredible opportunities to circulate and display the wealth and riches of the library's resources representing social,

cultural and economic point of view of any given nation. Consequently, technological innovation in the libraries should concentrate in the areas where library resources showcase lack of innovative attractions that are paramount to users. Such as the use of artificial Intelligence, security dictators, cctv-cameras, drones, eBooks, e-Journals, newspapers, film, photographs, maps that can be produced in electronic formats, which can also be transmitted through online service platforms. Besides, this would make it easier for citizens to further appreciate their own cultural heritage identified through knowledge sharing digitally.

Knowledge Sharing and the Changing in Information Landscape

The emerging technological innovation in libraries helps to forecast the latest developing trends in both theory and practice of the profession. Knowledge sharing and the use of ICT also help to reduce the barriers of time, space and allowing transaction cost effectiveness. Knowledge sharing started from knowledge creation. The process of changing information landscape depends largely on formal research, recorded information, and discussion, data collection like questionnaires, observations, analysis and so forth. Knowledge sharing among information professionals encompasses conference attending, articles that are scholarly published, digital video-conferences and meetings, seminars and workshops. These expressions of exchanging ideas and advices positively had meaningful impacts to human activities considered through knowledge sharing that influence information changing landscape.

Information changing landscape can be described as a seamless web of communication networks, which comprises the computers, data base, and consumer's electronics that put vast amounts of information dissemination at

the user's finger-tips. As simply put that knowledge sharing entails spreading of knowledge and making it accessible to the needs in form of information diffusion. Information diffusion actually refers to the transfer of knowledge from one individual or group to another. The digitization aspect of knowledge sharing is by means of transmitting knowledge in such a way the recipients absorbs and transfers it into personal action for positive goals. Generally, with the mapping of evolving digital technologies that are enabling, library services have simultaneously offered solutions to address the challenges of information landscape. The technological innovations absorbed by the accessibility of internet, coupled with the open access source to information resources encapsulate the changing phenomenon of information landscapes. The perception that the traditional means of providing information cost much comparing with the use of technologies networking services in organizations are still an on-going debate. Underwood (2017) made it clearer that automation in libraries has expedites and eliminates the traditional processes of information dissemination to users. The purview of the changing landscape of library and information services can be attributed to the stakeholders of the profession who probably take additional responsibilities through the application of information technology (IT) services. This has actually expanded the library services to effect opportunities and visions which the professionals must take a lead in an integrated information technologies' career trajectories.

Considering the above statement, Homlgren and Spencer (2024) published a white paper report of the Council on Library and Information Resources which investigated the changing landscape of library and information services. Going through the factors considered for making most promising future predictions and

expectations of information technologies in 2030, demonstration of information landscape changes in the last decades that shape the society or global interaction with technology and information with new products, which include Facebook, Apple, Google, WhatsApp and Twitter. Others are social media like Wikipedia, Video-Conferencing and high-tech devices such as 2.0 series of communication facilities that emerged in this era of information age. All of these enhance knowledge sharing automatically through electronic information and communication devices that aid digitization for easy and effective transmission and quality service delivery in libraries. The changing landscape of library and information services did not only offer easy opportunities through knowledge sharing locally, nationally and globally. It gives an insight on future predictions of how and what information technology would bring to bear in the nearest generations. Therefore, librarians should organize their institutions to accommodate and always prepare to meet the challenges of tomorrow's world of information technology changes because the only constant in life is the change.

Knowledge sharing is perhaps the major focus of the information society by definition when discussing information infrastructure. Without basic information infrastructure in place, the technological innovation that aids knowledge sharing among professionals and organizations cannot be easily achieved. Therefore, The National Information Infrastructure (NII) in a broad sense reiterated that the Internet and technology components which enable the transmission of vast amount of information and knowledge at high speed should be viewed in three ways. Namely:

i) There should be policy for National Information Infrastructure development.

ii) These should be seen as Federal programs to enhance and support development.

iii) Promoting wide range of applications that would demonstrate the tangible uses and benefits of the digitization.

McLoughlin (2021) view the above statements by NII as being in line with adequate prerequisite foundations of knowledge sharing and digitization embracement changes in information landscape emancipation. McLoughlin articulated that the NII programmes should be supported by every stakeholder of information providers. That policies advocated by the NII needs to be spearheaded and supported through major governing research and development agencies such as schools, libraries and other research institutions to grant efforts on the application on variety of technological innovations to aid knowledge sharing magnificently.

Knowledge sharing and Digitization in Librarianship

Knowledge sharing and digitization are the true reflection of the global network of the people, organizations, agencies, policies, processes and information technologies that are formerly organized in a loosely but co-ordinated system to enhance life cycle of information dissemination. Basically, there are two major terms of knowledge management that would be unfolded under "SECI MODEL" that enhances knowledge sharing and digitization practices in libraries. See the Socialization, Externalization, Internalization and Combination (SECI Model) below for further explanatory.

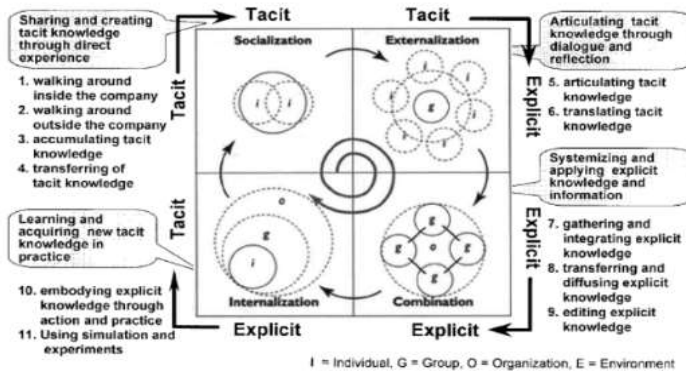


Figure 1: SECI model of knowledge creation (reproduced from [29])

The SECI Model (Nonaka and Takeuchi, 2000): Organizational knowledge creation theory.

Source: Akram & Kashif: Role of Knowledge Management to Bring Innovation: An Integrated Approach (2011). Adapted by the authors, 2025.

- 1. Socialization (Tacit to Tacit)**
Wandering and walking inside
Wandering and walking outside
Tacit knowledge transfer
Tacit knowledge accumulation

- 3. Combination (Explicit to Explicit)**
Collecting data and acquisition
Disseminating data and information

Akram (2011) echoed that knowledge transformation process creates the leverage within the organizations regarding knowledge sharing, creation, dissemination and integration of the knowledge within the organization. Ironically, knowledge sharing and knowledge transfer are sometimes used interchangeably. Knowledge innovation in organization consists of knowledge utilization, exchange and application of new ideas that are converted into goods and services. Knowledge creations emerge through tacit and explicit. It is the embedding of these two terms of

The SEIC model shows mode of information transformation and transmission to ease knowledge sharing through digitization in libraries.

- 2. Externalization (Tacit to Explicit)**
Dialogue
Metaphor

- 4. Internalization (Explicit to Tacit)**
Personal experience
Simulation, Editing and synthesizing data and information

knowledge management with multiple elements of networks that transform knowledge innovation to knowledge sharing and knowledge transferring using digital concepts within and outside the organizations. The emerging technological innovation techniques that supported knowledge sharing among practicing librarians in the profession consist of software technical data base where patents, arti-facts and research projects of the organization are kept or recorded in digital formats. Natarajan (2020) explained that by using software data base research and development, the professionals would

acquire an existing knowledge in order to apply it to a new content and context in combinations into their library services. For instance, like the explicit that can easily be documented, captured, written, recorded, and transferred. So, through socialization and interactions explicit knowledge can be transformed to tacit knowledge for conversation and vice versa.

The concept of knowledge sharing explore in all kinds of libraries where collections of library resources are in digital emancipation for ease of use, accessibility and proximity. Again, Natarajan (2010) maintained that most libraries have established construction approach for exploring knowledge sharing digitally to harmonized knowledge sharing culture among them with similar types of organizational contents by web links. Library services like the daily routine services that emanate from reference or circulation desk, activities from technical department and similar activities such as monthly meetings, annual meetings, seminars, workshops and conferences are the podiums that constitute knowledge and technological innovation in the era of digitization. Digitization in librarianship is to lay emphasis on the emergence of new methods of providing quality services in the best practices to users and implementation of innovation techniques in the library.

Emerging Technological Tools for Knowledge Sharing and Digital Innovation Strategies in Libraries

Innovation practices in the libraries are the core value of the library profession that must focus on the people as well as the users. Therefore, information contents of needs must be equitably distributed because users' needs are designed by the institutional service delivery platform. Most significantly on researches that are related to information transfer processes

that could ease knowledge sharing of individuals. Luke and Tredinick (2022) asserted that the use of digitization and innovation practices in librarianship increases information processing efficiency for individual users of the library and can as well promote technology and knowledge accumulation as part of competences available to the profession. However, Ryyananen (2015) reiterated that innovation practices in libraries depend on new technologies which offer new possibilities to raise service levels, given an example that can be found all over the world where internet is used as information dissemination and service rendering.

Given the main mission and the parameters of libraries to offer quality access to information services to every user, the evolution of building communication and associated equipment in libraries now encompasses digital devices, digital media, daily routine operating systems, and wireless networking services are being used to provide access to information resources. Technological innovation practices in libraries depend largely on the availability of the technology infrastructure in building a continuum processing of network connection in collaborations with utility service provisions within and outside the library premises. Barathi, Loganathan and Rajan (2017) emphasized that library automation systems should be designed to meet the needs of all information seekers so that both researchers and users can search the world's library collections using a seamless integrated link.

Moreover, there are some model library catalogues like online public access catalogue that are available via internet. This model library catalogues provides simple interfaces to catalogue new books, manage patrons, create reports, and used to control budgets and acquisition of library resources (Barathi, et. al, 2017). Users can

also check their loaning data profiles from internet so long they are connected. Renewal of these loans via library networking services through internet and social media services were equally made possible. Apart from those services rendered by libraries as their daily routine practices mentioned above, there are also versions of linkages of libraries called virtual libraries. Librarians collect and progress to high-level-link-ups-discussions that can take place by sharing their professional skills and knowledge and to also participate in developing the library policies. It is quite amazing to realize that some libraries that practice a total virtual library got richer in online resources than other libraries that kept mum. Sometimes, these virtual libraries offer users the needed satisfying request as expected. In most cases, these virtual libraries rejected printed collections for library acquisition from the day the libraries were established. These are the new trends of technological innovation technologies brought to libraries to ease knowledge sharing and skills transferable in the information age.

Garland (2018) listed some of the emerging technological innovation tools available for use in the libraries as follows: big data block chain technology, robots, digital interface for printed books, library bookmark applications, Internet Things, and other 2.0 device facilities. Knowledge sharing and technological innovation in libraries in the era of digitization emerges in various dimensions. This is absolutely true because web enabled technologies develops on virtual platforms that allow every institution or individual to generate greater opportunities of usage for various services. However, Kaushik and Kumar (2023) pointed out that libraries are nowadays using Cloud computing technologies to enhance services by adding more values and attracting more users with less cost to perform their duties. The value of these cloud libraries may not be known

in a hurry until the need arises because, the primary purpose of cloud libraries is to serve as an additional institutional or individual repositories. Due to information overflows or information explosion, problems of accessing the information need may arise. It is obvious that when services are under pressure in order to save time of the users, cloud libraries could be the last resort either for knowledge sharing or information dissemination at those particular hours.

Kaushik and Kumar further defined cloud computing libraries as the kind of libraries that are made of computing technology which facilitates sharing the resources and services over the internet rather than having these services and resources on local servers/nodes or in personal devices. Some of the available services in Cloud libraries include digital libraries, corporate cataloguing, acquisition, storage, and resource sharing on virtual environment on the web. The possible future predictions that are characterized with Cloud libraries according to Kaushik and Kumar are (i) pay as use or pay per use (ii) self-service interface (iii) its elastic capacity in nature and, (iv) it is associated with abstracted and visualized resources.

Frameworks of Collaboration and Digitization for Professional Development

An innovation can be defined as a process to change an idea or technique into a new innovative products or services that creates value for the customers (Yasini, 2016). The framework of collaboration involves a multi-step process that includes adoption, development and delivering from producers to end users. Technological innovation can be classified into product innovation and process innovation. The framework of collaboration for the development of technologies in the library profession entails the ability of the professionals to create and develop idea on production that will lead to the

organizational growth. Digitalization framework of collaboration for professional development of librarianship is critically involved in production innovative, where the outcome result is expected to be qualitative superior of services provided from a given amount of information resources. The processing innovation identifies the introduction of advances in management techniques that requires knowledge collaborations of the profession. Although, knowledge has been described as an intangible asset which tends not to depreciate in value when used rather it appreciates. Also, Opeke (2017) opines that knowledge abounds everywhere, even, in the space. But how people share and make use of the distinctive commodity for the benefits of others and the society is the yardstick measurement of the value. Those librarians are knowledge inventors who constantly find ways of using new technologies and novel ideas in pursuit of excellence.

An integration of innovation adopted by any library stand the chance of accumulation of knowledge acquiring through digitization thereby having the opportunity of knowledge sharing in collaboration and partnership initiatives. Knowledge sharing and technological innovation can be arranged among libraries to ease some of the barriers of the “haves” and “have nots” syndrome. The advantages of knowledge sharing for enhancement of professional development in the libraries are enormous and that alone is enough for libraries as institutions as well as professionals to take these advantages to perform their duties and vouch for quality services in all ramifications.

Conclusion

Knowledge sharing started with an individual's thought through tacit to explicit in socialization and combination. Obviously, there are implications that

knowledge management is an instrumental factor that facilitates digitization and networking processes which encourages knowledge sharing and information dissemination exponent to the fruition turn of users' satisfaction of needs. Knowledge sharing and technological innovation as in the practice of librarianship does not only transform the development of the profession but gives rooms for individual institutions and professionals the competence assurance that constant changes is what the profession stand to face as competitive challenges in the era of digital age. Therefore, librarians need to brace up to meet the future challenges and take the lead in every competitive environment of information as communication technology abounds.

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