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Library Philosophy and Practice (e-journal)

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January 2020

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Funmilayo Racheal, Ayo-Olafare, "GLOBAL TRENDS AND EMERGING TECHNOLOGIES IN LIBRARIES AND INFORMATION SCIENCE" (2020). *Library Philosophy and Practice (e-journal)*. 3835.  
<https://digitalcommons.unl.edu/libphilprac/3835>

# GLOBAL TRENDS AND EMERGING TECHNOLOGIES IN LIBRARIES AND INFORMATION SCIENCE

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## *Abstract*

*The trending technological advancement has brought a lot of changes to library and information services as well as societal expectations from librarians/information experts. Librarians are expected to also change with the system in order to render user centric service by adapting to the trending web technologies being used globally to provide library services to people. Any librarian who fail to keep abreast of the trending issues and adopt the latest technologies in rendering services to users will be left behind and redundant in the field of information science. Therefore, it is very important Librarian/information professional to change with the system by ensuring knowledge and skills update as well as the utilization of emerging web technologies in library service delivery. Based on this fact, this paper attempt to identify the global and trending issues as well as emerging technologies for library and information science so that readers can specifically focus on them for effective library services.*

**Keywords:** Global Trends, Emerging Technologies, Library and Information Science

## **Introduction**

The global and national economies have now become knowledge driven. Base on this fact, knowledge sharing has become the indispensable asset for further economic development. Local and international businesses are now benefiting greatly from library and information science in terms of access to new ideas, knowledge and information needed to grow their businesses. Libraries are viewed as important information sources and resources for people seeking mission-oriented information. It also serves as professional services provided by librarians in helping many business originator, researchers, students as well as educators in finding, accessing and utilizing information resources to the fullest extent, especially with regard to electronic resources.

Indeed, existence of libraries has been cited as areas on for a business' decision to relocate to a particular community and the strategic locations of beneficial infrastructural facilities. Studies also found that business information resources were significantly more valuable with expert help of library staff. In addition, modern democracy being practice globally and many national economic development programmes demands that the masses and people in the position of authority should be well informed about all important matters in the society. Although many are receiving the information in form of instruction in schools and through seminars but these cannot be complete without the backing of libraries and information centers. Libraries and information centers sare an indispensable companion to formal education. The library must give persons of all age groups the chance to keep abreast of information needed at a particular period of times for all matters.

This is achieved by offering them information that represent conflicting points of view and enables them to form their own opinions and preserve that attitude of constructive criticism

towards public affairs without which there is no freedom. According to UNESCO (1961), there will always be changes in the environment, and these changes will affect librarians and information professionals in terms of their role, job opportunities, self-image, motivation and even survival. Librarians and information experts therefore need to move with these environmental changes and trends through timely repositioning and role claiming. This is simply because we are now living in an information society where the development of information and communication technology and telecommunication networks are changing the operation and skills required in all profession and information profession is no exemption. The current technological era is accompanied by a corresponding increase in knowledge and skills with a rapid grow of information sharing. This new library and information science environment requires new skills, products, equipment and platforms in seeking, processing and disseminating information.

### **Current and Global Trends in Library and information Science**

It is pertinent to first identify some current trends discussed in most recent literature of library and information management. These current trends somehow or rather will have a bearing in shaping librarians and information services in the new economic era. These trends as pointed out in literatures are summarized as follows:

- Access role replace custodial role
- Competency- based assessment/training
- Customer-focused/customer-centered, user oriented approach in provision of services
- Globalization of information
- Growth of electronic / internet resources
- Information management recognized as an important discipline

- Information recognized as commodity
- Integrated and widespread ICT applications
- Knowledge management – leveraging organization
- Knowledge-based economy (information/knowledge as drivers to boost the economy)
- Leadership skills
- Librarians expanded & changes in digital environment
- Librarians are designated as cyber librarians
- Librarians need new management knowledge and skills
- Mushrooming of information systems – need for Information Management System (IMS)
- New breeds of information professionals (CIO, CKO, consultants and analysts)
- Role of digital/electronic/virtual library
- Specialized training in library and information management (Double degree –major and minor concept)
- Strategic alliances, partnership and collaborations
- Trend to develop digital contents to facilitate access

Furthermore, Barathi, Loganathan and Rajan (2017) explained that the use of digital or virtual library is among the trending issues in information service delivery

**Digital library:** digital library can be defined as one in which all the texts and spoken books are stored as digital files, which will take a long time to achieve. A digital or virtual library is the online access provided by other facilities or it may mean a website which offers links to various sites with a large store of information in a catalogue or archived form. The term may refer to all material related to any subject that is available on the Internet. A digital library generally is part of a network with linkages to other libraries. It is a library in which a significant proportion of

the resources are available in machine readable format (as opposed to print or microform), accessible by means of computers. The terms digital library and virtual library are used to refer to the vast collections of information to which people gain access remotely. A virtual or digital library can therefore be defined as a collection of library resources in electronic/digital format at various locations, which can be accessed and used with great ease using computer information technologies for the purpose of teaching, study, research, learning, leisure, and decision-making. New era librarians and information professionals should be able to manage the Digital Information System as this encompass the overall competencies (knowledge, know-how, skills and attitudes) necessary to create, store, analyze, organize, retrieve and disseminate digital information (text, images, sounds) in digital libraries or any type of information. Traditionally, libraries were collections of books, manuscripts, journals, and other sources of recorded information.

### **Emerging Technologies in Library Service for New Economic Era**

Emerging technologies provide librarians with a unique opportunity to substantially enhance user centered services and to facilitate and promote collaboration between libraries and their users. Emerging technologies provide opportunities for library professionals in identifying, collecting, organizing, customizing and delivering information products and services in a range of formats and varieties to the user community both on demand and anticipation at physical and virtual environments in real time. Though library is independent of technology given the fact that every library activity designed or built with active participation and feedback of its user community qualifies to the concept of Library but emerging technologies can help libraries to create collaborative and participative environment that is necessary to deliver user-centric library services and to create new resources and build-upon existing ones using collective intelligence of

users. Availability of technologies gives libraries the ability to offer improved customer-driven services to their users. As the web has been emerging predominant mode of communication, transaction and consumption, that has emphasized all spheres of human life. Web environment enabled the human resource potential as the foremost significant factor in developing the world. Higher education is being the major stake holder in human resource development must adopt newer technologies to reach the unreached and bridging the gap. Libraries are heart of the higher academic institutions always take a leading role in circulating the knowledge blood among the academics with a range of sources and services. E-resources have post great number of challenges and opportunities to the library professionals of higher educational institutions in enhancing the information environment.

Tools and techniques used for evolving Library environment as identified by Jagdish (2008) are described below:

**Instant Messaging (IM):** Instant messaging or IM is a form of real-time, virtually instantaneous communication between two or more people using textual format. Libraries are already deploying IM for providing “real-time reference” services, where patrons can synchronously communicate with librarians much as they would in a face-to-face reference context. Software used in libraries for “live reference services” are usually much more robust than the simplistic IM applications. This software often allows co-browsing, file-sharing, screen capturing, and data sharing and mining of previous transcripts. Libraries can benefit greatly by adopting this technology as it evolves since it facilitates reference services in an online mode quite similar to traditional reference services of the physical library.

**RSS Feeds:** RSS stands for Real Simple Syndication or Rich Site Summary. The technology, on one hand allows a web site (or e-publisher) to list the newest published updates (like table of

contents of journals, new articles) through a technology called XML; on the other hand, it facilitates a web user to keep track of new updates on chosen website (s). Like a personal search assistant, RSS feed readers visit pre-defined web sites, look for updated information and fetch it automatically on to the user's desktop. It provides users a way to syndicate and republish content on the Web. Users republish content from other sites or blogs on their sites or blogs, aggregate content on other sites in a single place, and ostensibly distil the Web for their personal use. Libraries are already creating RSS feeds for users to subscribe to, including updates on new items in a collection, new services, and new content in subscription databases. They are also republishing content on their sites.

**HTML Feeds:** HTML feeds are basically RSS feeds converted into HTML codes so as to facilitate peer-to-peer interaction amongst researchers and sharing of RSS search results. The HTML codes can be placed onto the web sites and the resulting HTML feed can be customised to compliment the page. HTML feeds allows quicker access information to visiting users. The Elsevier Science has implemented HTML feeds for Scopus, the citation database from Elsevier.

**Streaming Media:** Streaming multimedia is sequential delivery of multimedia content over a computer network that is displayed (or played back) to the end-user as it is being delivered by the provider. The streaming of video and audio media is an important application that existed before Web and finds its application in Web too. With availability of computer and network infrastructure to support multimedia streaming, library instruction delivered online began incorporating more interactive, media-rich facets. The static, text-based tutorials are being transformed to multimedia-based interactive tutorials. Several tutorials use Flash programming, screen-cast software, or streaming audio or video, and couple the media presentation with interactive quizzing; users respond to questions and the system responds in kind. Tutorials were



the first library applications to migrate into more socially rich Web. Besides its applications in computer-generated instructions, streaming media would also be available increasingly in its collections. As media is created, libraries will be responsible for archiving and providing access to them. Libraries are already beginning to explore providing such through digital repository applications and digital asset management technologies.

**Podcasting:** The word “pod casting” is derived from two words, namely “broadcasting” and “iPod” (popular MP3 player from Apple Computer). Pod casting is defined as “process of capturing audio digital-media files that can be distributed over the Internet using RSS feeds for playing-back on portable media players as well as computers. Users can subscribe to such feeds and automatically download these files directly into an audio management program on their PCs. A podcast is distinguished from other digital media formats by its ability to be syndicated, subscribed to, and downloaded automatically when new content is added, using an aggregator or feed reader capable of reading feed formats such as RSS or Atom. Several libraries use podcasts to support library orientations programmes. Taking advantage of podcasting and other consumer technologies as a deliver media of Library’s content and services is a great leap forward for library profession.

**Vodcasting:** The “VOD” in Vodcast stands for “video-on-demand”. It is identical to podcasting. While podcasting is used for delivering audio files, vodcast is used for delivering video content. Like podcast content, vodcasts content can be played either on a laptop or on personal media assistant device (PMA).

**SMS Enquiry Service:** Short Message Service (SMS) is a mechanism of delivery of shortmessages over the mobile networks. The SMS enquiry services in a library allow patrons to use their mobile phones to SMS their inquiries to the library. The reference staff deployed to

attend to such queries can respond immediately with answers or with links to more in-depth answers.

**Blogs:** A blog is a website, usually maintained by an individual, with regular entries of commentary, descriptions of events, or other material such as graphics or video. Entries are commonly displayed in reverse chronological order and they are usually considered as lightweight publishing tools. Blogs provide control to an individual or group of individuals for publishing contents or making commentary on it. Technologically, blogs are easier to use, platform-independent, and accessible online over the Internet. Broadly, blogs can be said to be online dairies, however, thousands of blogs are maintained by experts in different subject areas who are willing to share their knowledge, understanding and opinions with other people. Michael Casey, who coined the term Library for example maintains a blog called Library Crunch on Library. The most obvious application of blogs for libraries is to use it as a tool for promotion, publicity and for outreach services. Libraries can disseminate information to their users; make announcements for its new resources and events through its blogs. Blogs can be used to initiate debates and interaction amongst users and staff. Moreover, library staff and user can be encouraged to use Library blogs to get to know each other and interact at personal level.

**Wikis:** A wiki is a collection of web pages designed to enable anyone who accesses it to contribute or modify content, using a simplified mark up language. Wikis are often used to create collaborative websites and to power community websites (Wikipedia, 2008). For example, the collaborative encyclopedia, Wikipedia is one of the best-known wikis, that has broken down one of the golden rules of librarianship, i.e. content validation and authenticity of information. Wikis are also used in businesses to provide affordable and effective Intranets and for knowledge management. Wikis can essentially be equated to open web-pages, where anyone registered with

it can publish on to it, add to it, amend it and change it. As in case of blogs, Wikis do not have reliability as traditional resources. In spite of this, their value as information resource cannot be undermined. Libraries can use wiki as a communication tool to enable social interaction among librarians and patrons. Users can share information, ask and answer questions, and librarians can do the same within a wiki. Moreover, a record of these transactions can be archived for perpetuity. Transcripts of such question answer sessions would serve as a resource for the library to provide as reference. Furthermore, wikis will ultimately evolve into a multimedia environment, where both synchronous and asynchronous audio and video collaborations will take place.

**Social Networks:** A social network service is web-based software that facilitates creation of virtual social networks for communities of people who share interests and activities or who are interested in exploring the interests and activities of others. Most social network services are web-based interfaces that facilitate community of users to interact with each other deploying tools such as chat, messaging, email, video, voice chat, file sharing, blogging, discussion groups, etc. FaceBook, WhatSapp, YouTube, e.t.c. while FaceBook and WhatSappenable users to share themselves with one another (detailed profiles of users' lives and personalities), YouTube enables users to share Videos on the web resources. Social networking services could enable librarians and patrons not only to interact, but to share and exchange resources dynamically in electronic environment. Users can create accounts with the library network service; see what other users have in common to their information needs, recommend resources to one another. Besides, libraries can also recommend resources to users through their network, based on similar profiles, demographics, previously accessed resources, and a host of data that users provide.

**Tagging:** A tag is a keyword or term or subject heading assigned to a piece of information (a picture, a geographic map, a blog entry, a video clip etc.), thus describing the item and enabling keyword-based classification and search of information. Tags are usually chosen informally and personally by author/creator or by its consumer/viewers/community. Tags are typically used for resources such as computer files, web pages, digital images, and Internet bookmarks. While cataloguing is a fundamental skill of librarians, but the art of tagging is essentially a prerogative of user which enables them to assign keywords to a piece of information or object. The user can define and categorize information based on his or her own perception of given piece of information. In Library, users could tag the library's collection and thereby participate in the cataloguing process. The best thing about tagging is that everyone is allowed to categorize the information the way they want. The catalogues of Library would enable users to follow both standardized and user-tagged subjects, whichever is more convenient or makes better sense to a user. In turn, they can add tags to resources. The user responds to the system, the system to the user. This tagged catalogue would be an open catalogue, a customized, user-centered catalogue.

**Social Bookmarking Services:** Social bookmarking is a method of storing, organizing, searching and managing bookmarks of web sites using descriptive metadata. In a social bookmarking system, users can save links to web pages that they want to remember and /or share with other users. These bookmarks can be made public, or saved privately or shared only with specified people or groups of people. The authorized people can usually view these bookmarks chronologically, by category or tags, or via a search engine. Most social bookmark services encourage users to organize their bookmarks with informal tags instead of traditional browser-based system of folders, although some services feature categories/folders or a combination of folders and tags. These services also enable viewing of bookmarks associated with a chosen tag,

and include information about the number of users who have bookmarked them. Some social bookmarking services also draw inferences from the relationship of tags to create clusters of tags or bookmarks. Libraries can make use of social bookmarking sites using RSS feeds for subject disciplines or in areas of specialization relevant to them.

## **Conclusion**

The ever changing landscape of the information paradigm poses a host of new ways of service delivery using emerging web technology which will automatically bring new areas of skill acquisition for librarians in order to bridge the gap. The trending issues and emerging technologies pose challenges not only to the library and information professionals, but to the users, patrons and scholars and the publishing community as well. Indeed the new environment throws up a host of unprecedented features and avenues, and interestingly enough, if we know how to tap them well, we find there is a plethora of opportunities, and most of them even for free. Emerging technologies provide librarians with a unique opportunity to substantially enhance user centered services and to facilitate and promote collaboration between libraries and their users in this digital era. Adapting into some of these trends and implementation of some of the emerging web technologies are likely to improve reputation and standing of libraries in the community. Some of them may successfully attract new patrons to the library, others may help to retain existing members or make libraries even more important as centers of the culture and history of their cities and academic institutions. These new services and ongoing changes are likely to make libraries more interesting, more relevant, and better acceptable place. However, methodologies, applications and concepts will continue to change within libraries.

## References

- Uddin, J., & Hasan, N. (2012). Use of information technology in library service: A study on some selected libraries in Northern part of Bangladesh. *International Journal of Library and Information Science*, 4(3): 34-44. Retrieved from [http://www.academicjournals.org/app/webroot/article/article1379684073\\_Uddin%20and%20Hasan.pdf](http://www.academicjournals.org/app/webroot/article/article1379684073_Uddin%20and%20Hasan.pdf)
- Jagdish, A. (2008). Innovative technologies for building libraries of tomorrow. *Book of Papers at a seminar Organised by Ahmedabad Library Network*, 49-65. Retrieved from <http://ir.inflibnet.ac.in:8080/ir/bitstream/1944/1460/1/5.pdf>
- Barathi, S., Loganathan, G., & Rajan, V. R. (2017). Emerging technological innovations in library knowledge management and services. *Advances in Computational Sciences and Technology*, 10(5), 1479-1486
- Carole, M. P. N (2008). *Keys trends affecting librarians*. Office of Policy and Analysis, Smithsonian Institutes, Washington DC
- Rhoda, B. (2008). Current trends in libraries in the digital era. Book of papers at a seminar organised by Ahmedabad Library Network (ADINET), Information and Library Network Centre (INFLIBNET), and Ahmedabad Management Association (AMA). Retrieved from <http://www.alibnet.org/public/bookofpaper/6.pdf>