

THE ROLE OF SMART LIBRARIES IN EDUCATIONAL INSTITUTIONS

Dr. Ganesh Kulkarni (Takarwankar)*

* **Librarian,**

Shri. Sant Savata Mali
Gramin Mahavidyalay,
Phulambri, Dist.:
Aurangabad, Maharashtra,
India

QR Code



Abstract - The evolution of libraries goes through three phases – modernization and digitization. A smart library is an information hub with a network of numerous libraries and their services in a large learning ecosystem across the globe. Smartness refers to the development of new library tools and services based on real resource and user assessments. Smart is more user friendly than smart. As with every new model, smartness carries risks. In no time, libraries equipped with 'smart library' technology will be allowed to open freely to library readers without library staff. The technology library offers structure, self-service and installation to control and cover computers. It allows 24X7 resource utilization. So that the library can be used by the readers at any time. A 'smart library' requires 'smart librarians who provide user-centric and user-friendly services. Librarians and the role of libraries are currently changing due to the changing demands of their users. Part of SL requires three effects i.e. smart users, employees and services. Users are accepting libraries, especially academic libraries not only for their intellectual growth but also for their daily educational demands which will increase every day. The author elaborates on smart library, smart service, smart reader, cloud service developing 'smart librarian, service visibility, service exposure of smart academic library, advocacy, characteristics, vision of SL, impact planning, smart governance, smart library. Location, Smart Management, Smart Library Staff, Green Library Structure, Smart Librarians and their service in digital era. This paper is a purely proposition-grounded paper which describes the concept of smart library.

Keywords - ICTs, Library Resources, Library Services, Smart Libraries. Global Library, Smart Library.

Introduction

Libraries have undergone various stages of evolution. The evolution of libraries has happened through three stages: modernization, automation and digitization. In the same tone, library materials have also evolved from complexion tablets, papyrus, cuneiforms, books, CDs, microforms, e-books, database resources, and open access, to virtual resources. Daily, technology evolves. This elaboration

contemporaneously triggers changes in the management of libraries and confederated institutions as well. Each position of ICT advancement impacts the library. Moment, due to technological inventions, libraries have come smart. Being smart means having or showing a quick-witted intelligence. Some libraries have held this position of intelligence that has earned them smart libraries.

What is “Smart” about Smart Libraries?

For a library to be smart, it must have machines programmed with human intelligence to perform library functions as though it was a trained librarian. In other words, a smart library is a conglomeration of hardware and software what is “Smart” About Smart Libraries?

Installed to act as librarians. It is the authors’ expression that the term SMART as used in this paper is an acronym

For the components of a smart library. Thus, being SMART stands for:

S - Services

M - Methods

A -Automation

R - Resources

T - Technology

These five are components of a smart library system in our context

Concept of Smart Library

The conception of SL is to serve all library services briskly, better and smartly to its end users through digital technology in different software applications with the help of the Internet and Intranet. The expresses then that SL is a techno drive library with AI and IoT- grounded service providers to smart readers.

1. Creating a smart environment, Mobile access, New knowledge creation
2. Active content, Adaptively, Smart technology of content conformation
3. Organization of commerce with the user

4. Smart services e.g., particular information, & Mobile applications usage.

The vision of Smart Library

The vision of SL is to create an “indoor living lab”, where readers and scholars can develop, test and presents smart technologies, and access and analyse the collected data to carry out both qualitative and quantitative studies also by applying different types of open-source software as and when required accordingly. The author wants to express here that it is an online testing centre for readers and researchers on different subjects and different library open library software tools through which they get maximum service with unlimited time.

Basic Features

The smart library’s main motto is to provide skills and resources for the library community to bravely manage cyber issues and continue to embrace the positive aspects of online activities. It also provides a free and comprehensive result that helps libraries identify gaps in their programs and operations by offering a well-structured action plan that links to stylish practice resources The library can track progress and access resources using an online system tool by library professionals.

Smart Services

Smart services are grounded in artificial intelligence. In this case, technological devices carry out activities that librarians perform. Smart

library services aren't mutually exclusive from those rendered by library staff in a normal library. The services of the smart library can be separated into the services implemented in the physical spaces of the library as well as on the online, virtual interfaces. By furnishing smart services.

Smart Library Function

Smart libraries systematically libraries collections so that users can interact with digital technologies to serve themselves. SL renders library services faster, better and dashing to its end users through digital technology in different software applications with the help of the Internet and Intranet. Smart libraries are technologically driven by artificially intelligent systems. Smart library services were categorized into 8 as follows:

1. Library Marketing & Promotion Service, Newsgroups Newsletter Services.
2. Electronic Selective Dissemination of Information (E-SDI), Bulletin Board, Discussion Forum.
3. Electronic Board Services, Atmospherics, Mash Ups, Linking different datasets.
4. Ask the librarian/ Contact us Feedback Process.
5. Collaborative Digital Reference Services, Video Podcast.
6. E- Document Delivery Services, Institutionalization/Personalization – doors.
7. RSS (Really Simple Syndication), Virtual Library Tenures, and Streaming Media.
8. Value added, aggregator services, Open access publishing, and Metadata schema.

Revolutionary Changes in Library Systems

Digital information storage technology and ICT together can revolutionize the concept of a library system and can transform it into a digital library. The conceptual model of the Centralized National SL System is prepared and implemented. In SL, the entire library functions are automated. A central library will digitize all the information and provide such service to all public and educational & research institutional information through e-books, newspapers, magazines, and e-journals and their back volumes through a search facility. This new model will also remove the constraint of unequal sharing of library resources between rural and urban institutions.

Recent Models for the Development of Librerie

To cope with new digital resources and technological challenges, LIS developed a product of new concepts for the e-marketing and advocacy of public and academic libraries. Some of these concepts had an impact and were successful insofar as they shaped such as.

Information commons

Librarians and other information workers ' interest is to give the most stylish possible access for library users to information and ideas in any media or format they promote the principles of open access, open source, and open licenses ". In library sciences, the term "information commons" has been used to describe specific services and tools e.g., library-based open access journals and freely available digital libraries, as well as the

underpinning core values and organizing principles, like openness, unrestricted access and discrimination, on-profit, and so on.

Learning Centres

These models shift the library concentrates from effects and silent reading to modular learning spaces, smart technologies, and “great good place” features, putting scholars at the library’s heart. The focus is on literacy. Pedagogy has come a major driver for library design that should facilitate learning centred on autonomy, self-monitoring, and particular knowledge management. Some of them integrate rudiments from invention and co-working space

Green Libraries

The model of the green library offers the framework for a large range of actions in favour of waste reduction, recycling, saving energy, and so on. Some conduct is linked to new structures or important emendations, others can be enforced at any time other situations of action are education, mindfulness caregiving and advocacy, and access to technical information. Also, the model provides checklists and standards for the evaluation of the libraries’ ecological impact. The model of green libraries isn't limited to academic libraries but applies to all kinds of libraries. Structures, “clean” technologies, and equipment play a central role but are bedded in training, education, and everyday environmental conduct. Also, the model introduces the concept of sustainability into the field of library sciences.

Global Library

Insofar as the green library model puts the focus on environmental issues, it remains a kindly reducing conception, at least as long as it doesn't include the other confines of sustainable development, as defined by the UN and other transnational bodies. Libraries are cultural institutions, support education and research, but they're further than that they're also part of the original community, occasionally as a kind of social agency; they are, like any other service, implicit contributors to the sustainable development of society and humanity, and they should be estimated within this frame. This means that library management and marketing should develop a holistic approach and acclimatize the principles of commercial and organizational social responsibility to the specific terrain of public and academic libraries

Multidimensional Smart Libraries

Indeed if digital architectures and innovative technologies are preponderant factors of the smart megacity, the technological dimension of the conception is bedded in a larger environment, i.e., the human and the institutional dimensions. The smart megacity is further than new information and communication technology and connected objects. It builds on creativity, intellectual and social capital, and “intangible assets” and it needs governance, policy and regulations, i.e.

Smart megacity enterprises are a blend of hard natural resources and energy, transport and

mobility, structures and soft living, government, frugality, and people disciplines.

Smart Services

The first dimension can be described as the application of the “spirit of invention” of smart metropolises to the development of ultramodern library services. Papers on smart libraries frequently concentrate on this dimension and present technological inventions as smart services, similar as RFID, mobile and wireless access remote backing, semantic web, artificial intelligence the Internet of Things, machine translation, voice and image recognition, natural language processing, stoked reality for delivering new guest in enjoying artistic heritage.

Smart People

Smart libraries are made for and with smart people. Not only are smart library services user-friendly and user-centred but they're also grounded on the vision or supposition of the smart library user as an active co-producer of knowledge and not as an unresisting consumer of information. The citizens of smart metropolises are described in terms of inflexibility, creativity, forbearance, cosmopolitanism, commission, and participation in public life. Their position of qualification is valued as mortal and social capital and the services are needed to contribute to the development of these characteristics and skills

Smart Place

Dimension refers to the library as a structure and as a place. In a general manner, this dimension can be described as “smart environment” and environmental monitoring. We can distinguish different aspects.

Ecology

This is similar to the conception of the green library mentioned ahead. It covers, for case, compliance with sustainable structure standing systems, waste application, the attractiveness of natural conditions, lack of pollution, and sustainable application of users, etc. One part is sustainable architecture and engineering. The other is ecological functioning and application. Together, they represent the library’s donation to sustainable development and biodiversity.

Described

As smart living related to structures and means, for case, structure monitoring and control, monitoring of electrical bias, particular safety, and a healthy terrain for the staff, as well as for the public. This aspect includes inventions that contribute to perfecting the quality of life and attractiveness of the library as a structure and as a place. We can see parallels with the “hard” attributes of the library as a third place, its architectural design, and its performance.

Smart Place

Combines innovative qualities from the green library and the “third place library”, and

describes the transformation of the traditional library structure and performance into a smart place that contributes as important to the sustainable development as to the smartness of the megacity.

Smart Technology

Among the factors that determine smart libraries, the existence of technology is essential. Adapting and using technology in other areas also have implications for structuring library services. Mobile technology, wireless systems, radio-frequency identification (RFID) technology, light-emitting diode (LED) technology, Internet of Things, data mining, standards and protocols... enable the library's online systems to work. It can be argued that these technologies alone do not make a smart library, but the services that library users now expect cannot be designed without them. They are explained below:

Wireless technology: wireless access is, of course, becoming more and more common in services, which are linked to other systems. In recent times, all and sundry use wireless devices as a natural part of their lives, and libraries have adapted to these needs by becoming smart.

Mobile technology:

In Nigeria, almost all citizens and residents own personal mobile devices through which they access the world-wide-web. Libraries need to adapt to these needs: it is no longer enough to make their online content available on a

mobile device; new services are also emerging in libraries through various mobile applications.

Standards and protocols:

Using standards and protocols is essential for providing online information resources and building databases. In particular, the knowledge and resources archived in libraries and repositories must be not only available in the library's isolation. As part of a smart agenda or a smart campus, this content must also be accessible to everyone in other connected systems more precisely, according to the right permissions and access levels.

Service Orientation of Smart Academic Library

The outlook of smart libraries should be global in nature. It should act as a product and easing cell for information product and duration. The information produced in these centres would strengthen the causes of open literacy and the creation of resources of commons. Wikipedia can be used for alternative pedagogical practice. The Massive Open Online Course and Distributed Online Cooperative Course feminist volition to MOOC (Distributed Online Cooperative Course) is needed to include in library services to address the need of a new digitally moulded generation. The service of the library is reckoned to be fruitful if the service handed should be directly proportionate to the information generated from the library. The information therefore generated should openly participate with others.

Management and Administration of Library

- A. In- service Programmes, conservation of service area,
- B. Observation of other Library practices. Student participation programme.
- C. Resource Generation through external membership.
- D. Special deposit scheme, Staff promotional policy.

Collection and Services

- 1. Collection development in different formats, Library book exhibition.
- 2. 365 days & 24 hours of service.

Advances Application

There are some applications of recent Advances for SLs which are mentioned as:

- 1. Cloud computing, Web 2.0, E-Granthalaya 4.0, Greenstone, RFID
- 2. Integrated Library Software (ILS): Evergreen, Koha, Open Biblio, New Gen Lib
- 3. D-Space, Greenstone, Drupal, Joomla, Word Press
- 4. Bibliographic reference tools-Mendeley. EndNote, Reference Manager, Zetero

Challenges of smart library

Since the smart library is developed in response to the technological enhancement and changes, its effective deployment is bound to be hampered by a series of factors such as inadequate training of the library personnel, varied ICT programs and structure in different countries,

ceaseless changes in technologies when the existing ones have not been exploited and network failure. Other factors that pose challenges to smart libraries are:

Technology-acquainted

- The smooth and effective handling of smart libraries bear the operation of emerging technologies. thus, the reliance on advanced technologies similar to 3D printers, AI, drones, pall computing, etc., to make smart libraries conceivably come a challenge for libraries.
- **Lack of technological know-how** the exploitation of advanced technologies for the services of smart libraries needed trending ICT skills, expertise and capabilities which utmost librarians who'll manage and operate smart libraries may not have
- **Technophobia** numerous librarians aren't friendly with ICT widgets because they would take over their jobs. This belief makes it difficult for arising ICT- related services in libraries to survive.
- **Data sequestration and security** the uploading of information on the internet and clouds make it difficult for libraries to protect and secure their data and that of their users.
- **Poor power** force the smart library needed a dependable and stable power force since its efficient operations depend on technologies. Hence, failure to give a dependable power force poses a challenge to the operation of a smart library.

- **ICT structure** Smart library doesn't just come into being; it's an evolutionary process told by the integration of arising technologies for information services. Hence its availability and usage are determined by the level of the existing basic ICT structures like nodes, internet or intranet, ICT policy and procedures, computers, etc., that a library has in place.

Conclusion

Can the smart megacity give a new perspective to public and academic libraries? How does the smart megacity impact libraries as artistic and scientific assets? And how can libraries contribute to the development of the smart megacity? The recent models of public and academic libraries, such as the learning centre or the green Library, show several affinities with the conception of the smart megacity, especially regarding the central part of information and the integration of technology, people, and institutions. From this observation, we developed the figure of a new conception of the smart library which can be described in some confines, i.e., smart services, smart people, smart place, and smart governance. As for the smart megacity, the concept of the smart library remains ever "fuzzy", open, and dynamic. The smart library conception doesn't constitute a unique model or design, but a process, a way of how to get effects done, that's lower direct, less structured, and more creative and innovative.

References

- Ayinde I, Kirkwood h (2020) Rethinking the roles and skills of information professionals in the 4th industrial revolution. *Business information review* 37(4): 142–153.
- Babu,(.k.h and rao, k.nageswara.(2001). role of librarian in internet and world wide web environment, *information science*, 4(1), pp 27-33.
- Buckman, a., Mayfield, m. & Stephen Beck, s. (2014). what is a smart building? *Smart and sustainable built environment* 3 (2) pp 92–109.
- Dev., guru angad and singh, par minder. (2016). cloud computing in libraries: an overview, *international journal of digital Library services*, Ludhiana, 6(1) 2016, pp121-127.
- Gasohol c., mingle l., xuguang l. (2018). how to make the library smart? The conceptualization of the smart library. *The electronic library*, vol. 36 issue: 5, pp.811-82
- Gupta, "Internet of Things based book tracking system for a smart library," *international journal of computer science and mobile computing*, vol. 9, no. 7, pp. 12–18, 2020
- Hoy, m.b. & Brigham. t.j. (2016). Smart buildings: an introduction to the library of the future. *Medical reference service quarterly*. vol 35 (3). pp 326-331
- Liu, Y., Zhang, X. (2018). Research on the measurement and evaluation of The intelligence level of Smart Library. *Library and*

Information, (05):98-102

- Rishi Y, Rishi s, rishi s (2018) Big data and big data analytics: concepts, types and technologies. International journal of research and engineering 5(9): pp524–528
- Shahrubudin n, Lee tc, raglan r (2019) An overview of 3d printing technology: technological, materials, and applications. Process manufacturing 35: pp1286–1296.
- t. v. Honking, t. m. Tam, and d. t. n. hay, “developing a smart library model in vietnam public library system,” revista gestão inovação e tecnologias, vol. 11, no. 3, pp. 1320–1329, 2021.
- w. Huang, “Design of intelligent recommendation system of the smart library under big data environment and its application research in applied university, emerging trends in Intelligent and interactive systems and Applications,” in Proceedings of the 2020 international conference on Intelligent and interactive systems and applications, pp. 628–634, springer, cham, January 2020
- R. Ram Kumar, b. Karthikeyan, a. Raj Kumar, v. Venkatesh, and a. a. A. Praveen, “Design and implementation of IoT-based smart library using an Android application,” Biosci. Biotech. res. comm. special issue, vol. 13, no. 3, pp. 56–62, 2020
- Wang S. (2017). Smart society is a new realm of smart library development. Library Journal, 36(12), 9-13.