Smart Libraries for Smart Age

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Abstract – In the smart age, idea of the smart library means different things to different users. Smart libraries will be dependent on the skills of the librarians as well as transformational impact of the integrated learning. Role of future librarians will be governed by the technology of Automation, Digitization, immersive technologies like AI, VR, IoT, Robotics etc. The paper is highlighting the Digital Learning (DL) and Machine Learning (ML) since the librarians are working as a conduit for digital capabilities. Outlines of new concept of smart libraries can be described in four dimensions such as smart governance, smart services, smart place and smart people. The smart library concept does not constitute a unique model or project but a process, a way of how to get things done that is less linear, less structured and more creative and innovative. The paper concludes that in smart age the libraries are harnessing the power of new technologies and they are the melt pot of ideas.

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SMART AGE

The smart age empowered with new technologies is energizing possibilities for different users. The challenges and concerns of smart age will be multidimensional in the field of Education and Cooperative Learning, Healthcare and Medicine, Government and Industries, Society, People and Institution etc. changing the living world not only the libraries.Today's world has more than 3.8 billion internet users and more than 1.3 billion websites, blog, social media, YouTube etc. Apps such as Facebook, Twitter, Snapcha, LinkedIn connects with family, friends, followers etc. and discovering everything on internet keeping us updated.It is big step of progress in computing from mainframe to personal computer and Internet to Smart phone which has opened opportunities for more people to invent on the digital front.

Technologies that are shaping our world today is revolutionizing the way we live and learn. Virtual reality (VR), augmented reality (AR), artificial intelligence (AI), machine learning (ML), Block chain, internet of things (IoT), Drones, etc. are becoming instrumental for libraries ascenter of exploring, building and promoting these emerging technology assuring the better futures and opportunities offered to everyone.

SMART LIBRARIES

Libraries and Information Centre initiated several programs to promotecomputerization anddigitization in its services which are also promoted by the government of India. Libraries can be described as social and technological-intellectual infrastructure, essential for any public services and knowledge institutions. They are also developing new concepts for the marketing and advocacy for public, academic, and research libraries. There is an abundant corpus of literature, surveys, case studies etc. about how these libraries move forward and adapt to new technologies, new communities, new user needs and information behaviors. They all shaped the core values, and mission of new generation of libraries and some of these features are summarized as follows:
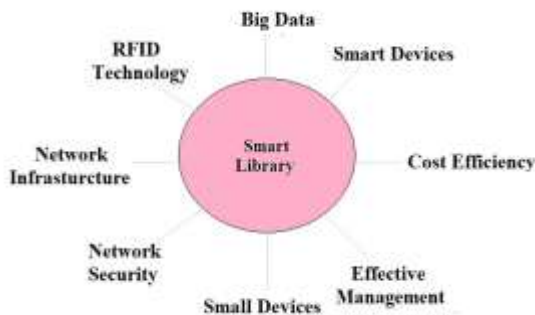
- The strong connection with the users' community and the attention paid to their needs, and information literacy.

- The principles of resources sharing, collaboration, networking and openness.

- The importance of innovative technologies.

Information commons, learning centers, and green and global libraries, represent different responses to the same technological and societal challenges.

TOWARDS A NEW MODEL

Since 2013, a couple of studies, especially from China and India, have introduced the concept of the smart library. However, the term was used in a non-consistent way and centered on technology &related work skills. Smart Libraries Newsletter published by the American Library Association, lay the main focus on radio-frequency identification (RFID), the Internet of Things and connected objects, mobile devices, infrastructures and Big Data. The role and development of creativity, education, learning, and knowledge, that makes the concept attractive for libraries is depicted in

Figure1. An inclusive and multidimensional concept of a smart library was presented at the European Conference on Information Literacy (ECIL) in 2015, where Adam Sofronijevic and his colleagues from the University of Belgrade described the transformation of public library services into an "information literacy hub.

Figure.1

Smart libraries will focus on the impact of its resources taking care of users needs. This will convert them into a multifunctional center for information and services.

Basic Concepts of A Smart Library:

Now-a day'sinformation service in the library emphasise the online knowledge service provided by the librarians. The smart library system can create, validate and categorize knowledge using collective intelligence group and provide intelligent knowledge.Some of the recent technologies which are almost prevalent in the libraries now-a days are Integrated Library Automation Software, which most of the libraries are using in the present time, but a few of them are fully automated for the daily routine works and services of the library, others are partially automated only for a limited service i.e. circulation, acquisition, cataloguing, membership, reports, budget etc. The software facilitates smart features i.e. email/ message alerts and notifications to the users, Web-OPAC, user login to check library status etc. The content management, RFID security and transaction, sensors, digital repository, cloud storage and service, library networks and e-resources consortia are other synonymous terms for smart libraries as shown in figure.2.

Figure:2

libraries are prevalent in various sectorsof the society such as Agriculture, Health, Politics, Policy & Planning, History & Culture, Science & Society, Industry & Businesses, Education & Lifelong Learning etc., Since in education the role of technologies and its applications is having a profound influence on its users, the ways of learning by the students, faculty and research scholars at every level is changing.

EMERGING TRENDS AND TECHNOLOGY

Future is about active choices for the librarians. Intelligent technologies like Machine Learning (ML), Artificial Intelligence (AI), Internet of Things (IoT) and Block chain etc. are using computer system in order to perform functions that usually require human intelligence. AI and ML technologies have the promise to bring great benefits but it involves great cost also. Libraries can promote great efficiency quality of life expanding their global footprints but the question arises that to what extent libraries are embracing capabilities stemming from today's technology.

Artificial Intelligence (AI)

The age of accelerated innovations is also marked with cloud based application. AI and Block chain has already transformed the industries besides improving efficiency. It is being predicted that Artificial Intelligence and Machine learning will impact all segments of daily life by the year 2025, with applications in a wide range of industries such as healthcare, transportation, retail, insurance, transport and logistics and customer service, education etc. There's a blurry line between AI and Automation, with the terms often used interchangeably.

AI: Refers to "smart" technology. AI can deal with conceptual ideas and uncertainty, and should analyze and apply new information to react to situations. Machine learning is one subset of AI.

Automation: Refers to "dumb" technology powered by programmable bots. Automation follows rules to handle straightforward tasks, and it can't react to new situations.

Libraries are also searching ways to adapt to changes to serve as storehouses for knowledge and histories. Thus, there is a need of smart library in smart age, where a wealth of information on any topic with quick research can be obtained.

Augmented Reality (AR)

Augmented Reality brings the real and virtual items together in a real environment. There are many areas in which mobile augmented reality is being used such as Navigation, Military, Medical,

Gaming, Entertainment, Library Management etc. It is an emerging technology of Virtual Reality, involves knowledge about sensors, image recognition, computer vision, human-computer interaction, virtual reality, and many other areas. The key technologies include displaying, registration, tracking and interacting etc. are few applications in libraries.

Internet of Things (IoT)

Simply, the internet of things consists of many devices-from very small sensors to smart phones that are connected to each other. The term IoT includes of everything connected to the internet and "talk" to each other. It is a giant network of connected things and people. The relationship will be between people-people, people-things and things-things. It is applied to libraries in order to monitor users' activities, feedback of users, effectiveness of services, etc. It also has a significant role in information analysis and information management.Using internet of things and new technologies can improve libraries, both on collecting information and user services. The inter communication between objects in IoT technologies can make easier decision making and management process in libraries. As we move forward into the digital age, the libraries must not only modernize their physical appearance but also expertise in marketing capabilities in order to take the advantages of new technologies.

ROLE OF LIBRARIAN

"In the nonstop tsunami of global information, Libaraians provides us with floaties and tech us to swim"

-Linton Weeks

Technology should make the libraries a better place for seamless access. They are rightly termed as new age knowledge institutions, which has tranformed the role of librarians and information scientists into new leaderships of strong vision of creating shared values. Endless potential of systems and jumble of technologies requires attention from librarians to be knowledgeable about the entire lanscape, including what's just over the horizon. How can they help the users, what should be their new role ? As for the libraian:

- Technology eliminates the need for a physical space to create.

- Present realities for virtual future to empower people.

- Allows mentorship and ability to do more than manual tools.

- And has given access to inspiration that enhances and unlock creative potential.

Thus librarians should be Problem solving,doing things "the hard way", coming up with good ideas and being unafraid to take risk.

The real challenge for the librarians in mapping of technology landscape is to correlate the major developments of new technologies and the changeof the learning landscape over the next decade or more. Any smart library requires smart librarians sincetheir role as leader is to create synergy between technology and professionals. We have to believe in the power of libraries because libraries are "power house" of knowledge and information. Librarian are wonderful educator in every setting-schools, universities, cooperate library, Govt library, NGO etc.

CONCLUSION

For centuries libraries are regarded as repositories of knowledge and history to preserve it from one generation to another regardless of its nature. The digital interface to future technology will influence, collaboration, inspire, the libraries and librarians.

The concept of the smart library remains somehow "fuzzy", open and dynamic.Adapting the well-known defination by Giffinger . one could say that a smart library is well-performing in a forward looking way, as an information-hub, providing access to information and improving information literacy. The concept refers to the search and identification of intelligent solutions which allow modern libraries to enhance the quality of the services. Library based activities influenced with technology are changing the reading, learning landscape in spite of electronic mediapenetrating from books will never be out dated. The recent trends in the innovation of information technology and the changing learning environment highly impacted the Academic libraries globally. The libraries should understand how the academic, research, public community is being transformed and thus transform themselves, so as to keep pace with global phenomenon.A library can be modern, improve its service quality, develop new services, and implement new information technology even without being smart.

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