REVIEW OF DIGITAL LIBRARIES IN THE ELECTRONIC INFORMATION ERA

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ABSTRACT

The word "Library" has been derived from the Latin word "Liber" which means a book.' The word used in many other countries to signify a collection of books, publically or privately, is derived from a Latinized Greek word 'Bibliotheca' hence bibliotheque in French, biblioteca in Italian and Spanish, bibliotek in German, biblioteka in Russian and Toshosentsu in Japanese. The library is therefore, a place where books are kept. According to *S.R. Ranganathan* "a library is a public institution or establishment charged with the care of a collection of books and the duty of making them accessible to those who require the use of them." According to the *New Encyclopedia Britannica* which defines "Library is a collection of books used or reading or study, or the building or room in which such a collection is kept." In this review paper we are going to see the present libraries functions and their environmental elements too.

Keywords: Digital libraries, Association for Computing Machinery

INTRODUCTION

The Library of today is more than a building or a room in which books are kept. The contents of a modem library are diverse and most libraries of today contain much more than books. They contain, besides books, graphic and accoustic materials such as periodicals, pamphlets, reports, newspapers, documents, manuscripts, photocopies, musical scores, microfilms, maps, charts, atlases, etc. The library of today selects, collects and also preserves. Simultaneously, it meets the demands of varying tastes, environment etc.

Digital Libraries

During 1980s libraries started automating their bibliographic databases and during 1990s digital library projects were initiated. As on today, lot of developments have taken place in digitizing print media. At national and international level several big funding projects have been initiated to digitize valuable material available within the libraries for the preservation as well as for providing wider access to the collections through latest technologies.

Digital libraries have been making their roots in the library profession as a separate discipline and many conferences, workshops and seminars are taking place in the area of digital libraries. These conferences are

covering different topics under digital libraries such as collection development and organization, user studies, digital library architecture, usability studies, search and retrieval, digital library software or providing value added services to end users. Digital libraries are becoming popular and are becoming one of the important activity of any organization. The rapid growth in computing networks, databases and public awareness have contributed to a hot topic of today such as digital libraries, digital archives, institutional repositories or digital repositories.

While using the technology, it has also placed couple of challenges in front of the librarians such as which hardware/software to be used for organizing scanned digital collections or born digital collections, how to maintain these collections over a long term, what are the other aspects which needs to be considered before bringing digital collections on the Internet/Intranet of Library Web Sites.

Definition of a digital library is

1. A digital library is a managed collection of digital objects.

2. The digital objects are created or collected according to the principles of collection development.

3. The digital objects are made available in a cohesive manner, supported by services necessary to allow users to retrieve and exploit the resources just as in the case of other library materials.

4. The digital objects are treated as long term stable resources and appropriate processes are applied to them to ensure their quality and survivability.

Digital Library Foundation defined digital library as "Digital libraries are organizations that provide the resources, including the specialized staff, to select, structure, offer intellectual access to, interpret, distribute, preserve the integrity of, and ensure the persistence over time of collections of digital works so that they are readily and economically available for use by a defined community or set of communities." This definition involves three key components, which constitute the theoretical framework of digital libraries such as: people, information resources and technology. Another workable and widely used definition of digital library provided by Lesk is "a collection of information which is both digitized and organized". A review of the above definitions indicate that digital libraries are organized in a special manner with the help of computers and are made available over a network, with different procedures such as, to select the material for adding in the collections, to organize collections, to make collections available to end users with value added services and to archive the material for long term access.

During 1990s, the research development and practice related to digital libraries took off in a large scale. Researchers focused on digital libraries as contents collected on behalf of user communities, while librarians focused on digital libraries as institutions or services. Many new initiatives came through the research

sponsored by the US National Science Foundation (NSF) and UK Joint Information Systems Committee (JISC). Digital Library Initiative (DLI) projects in the USA and the eLib projects in UK have played a key role in the development of digital libraries. In addition many digital library projects are currently under way in Australia, Asia, Europe, Africa and Latin America. While some of them have their own funding, others are funded under digital library-specific funding initiatives.

Today many other groups as well are involved in the expansion of digital library technologies and techniques such as European Union, Association for Computing Machinery (ACM), the Institute of Electrical and Electronics Engineers (IEEE), The International Federation of Library Associations (IFLA), the American Library Association (ALA), the Coalition for Networked Information (CNI), and the Digital Library Federation (DLF). During the past decade thousands of digital libraries in a variety of forms were built globally and are functioning operationally, with more to come. Hundreds of research projects were then devoted to many aspects of digital libraries in many countries, and more are reported each year.

A fully developed digital library environment involves the following elements:

1. Initial conversion of content from physical to digital form.

2. The extraction or creation of metadata to assist in object viewing, management, and preservation.

3. Storage of digital content and metadata in an appropriate multimedia repository.

4. Client services for the browser, including repository querying and work flow.

5. Content delivery via file transfer or streaming media.

6. Patron access through a browser or dedicated client.

Digital libraries thus provide new technological platform for implementing functionality of traditional library systems by making them much more powerful. Digital libraries developed today are based on innovative web technologies such as Semantic Web, Ontology Specification, Database Technologies, XML databases, text retrieval in different languages etc.

- The fundamental reason for building digital libraries is that they provide better de- livery of information than was possible in the past.

  - The digital library brings the library to the user.

  - Computer power is used for searching and browsing.

  - Information can be shared.

- It is easier to keep information current.

- Information is always available.

Digital Libraries are nothing but extension of traditional libraries. In traditional library activities librarian select, collect, organize, store information and make it available to users. In a similar way digital librarian have to carry out all these jobs. To carry out these tasks there is a need of skilled professionals who can create, organize and manage digital information. Digital libraries (DL) are digitized versions of conventional media, such as text, images, audio/video, etc. DL hold any information that can be encoded as sequence of bits. Newspapers, scientific journals, books, question papers, thesis/dissertations, bibliographies, images, photos, audio/video resources, preprints/ reprints of the faculty members etc. All these documents if converted from analog media to digital media or if created through digital technology fall under the category of Digital Libraries. All over the world, libraries started realizing the fact that they have to preserve their valu- able materials available with them with the help of new preservation techniques. This has helped librarians to scan any analog document e. g. paper, microfiche, microfilm, negative films etc. and convert those documents into digital format for long term preservation.

There are two groups which are creating digital libraries. During 1994, libraries started converting their historic collections into digital format and building digital libraries and during 1998, major scientific publications started becoming available online from both commercial and society publishers. Technology is changing very rapidly hence it is very important for the librarians to keep on converting the existing digitized documents to the latest available formats. Though the print media is a stable media digital media is also supposed to be a parallel stable media and hence it is imperative to use this media for the long term preservation.

Researchers in various fields are interested in digital library technologies because DL provide the possibility of effective distribution of research results to the scientific community. With the advent of the Internet, individuals expectations for access to information have in- creased considerably. Though digital documents are created either born digital or from analog media to digital media by digitization, it is as well required to manage these documents in a proper way, such as it should have proper Information Retrieval Systems or Digital Library Software.

Digital Libraries in the Electronic Era

In the 21st, century, the digital information in electronic format was required by the user to cater to their needs. The libraries and the librarians have to face new challenges in dissemination of information in the changing scenario where information is available thought globe. Thus development of libraries from clay tablets, traditional library, digital library virtual library, electronic library and now in the current scenario the

libraries on cloud is active and further development might take place based on developments. In all the conditions staff is an important factor to manage and provide services to the users as the technology changes the practices also changes and the staff strength with job requirement also shift.

Information is generated and disseminated at the higher speed with the new resources available in the electronic form. The advanced technology in processing information, storage and transferring information at higher speed has changed role of libraries in providing information services to the users. The librarians and the library staff have to face new challenges due to transformation. The libraries are changing their way and style of working with due to the advent of new technologies. The new developments in disseminating and storage of information, the growth of new devices to store and retrieve the information in the digital form, the fast access of internet and web pages, competitive search engines, availability of very high networks with high bandwidth and the information made available in the form of electronic publishing has made the changes from traditional to digital libraries. Information communication technologies have brought dramatic changes in the working of library from traditional library to digital library. The library staff is providing information to the users in traditional form as well as using different resources available over net.

As technology is changing the information is stored in different formats for easy access by the users. The users need print material as well as online information to meet their demands. Earlier the users refer to books, hand books, reference books, articles, print journals to cater their needs. Now the user demands have increased as multiple information sources are being made available in databases or using search engines such as Google, Yahoo, Google scholar etc. Internet has played a major role in changing of library working in organizing and disseminating the information to its users and transformed the activities due to use of ICT in libraries for performing different functions.

The library profession is use and managing resources is also transferring due to librarians in digital form and library staff have to acquire knowledge of networking programming languages, digital library software's, web site development, cloud computing, mobile computing, Server architecture, SQL, Video Conferencing etc. to adjust with transformation. This new technologies transformed the role of librarian and libraries. Users also transferred their ways and now require information in digitized form and to get information access around the globe. With the advent of E-learning and teaching information is generated more in e - resources to support this new education system and due to this has changed the working of library and information services in academic libraries facing new challenges in the library profession. The information available in various electronic formats and making them available to the users is now challenging role of the libraries and librarians and here to shift from traditional to e -information content management by learning new skills, like automation and new technologies to manage and provide required piece of information to the users in the Knowledge society quickly. The information explosion even in the e-publishing is witnessed around the world due to web based information and communication technologies, globalization of networks and internet etc.

The impact of web based e-learning and teaching environment has influenced every facet of library and information services in academic libraries and providing new opportunities and challenges to library professional for involvement in knowledge based society including electronic and multimedia publishing, internet based information services global networking web based digital resources. Similarly emerging challenges of acquiring and providing access to electronic knowledge resources require librarians to change their role to information scientist by learning and applying new skills by understanding the evolving technologies to manage and provide quality online information service to the knowledge society users.

LITERATURE REVIEW

Krishna Kumar and Others (2008) study was aimed at the collections of respondents' libraries include both Indian and foreign literature. The vast majority of collections are English language material (93.33%), followed by Hindi (16.67%). Most of the institutions in the population do not have substantial library collections in any format, although selected institutions do have adequate collections of books, theses and dissertations, and periodicals. The libraries of the technical institutes in the population serve faculty, research scholars, graduate students, and undergraduates. The budget for library materials is variable in the population. Some have no special library allocation. Most of the institutions devote their budget to the purchase of science and engineering material. Two-thirds of the institutions in the population offer the B. Tech. degree to undergraduates, while 80 percent offer the MCA at the graduate level.

Akhtar Hussain and Krishna Kumar (2007) have studied the collection development: an overview. They found that collections provided valuable functions, such as collecting sources for convenience and saving time and money, selectivity, narrowing the search scope to increase precision and ease of use presenting choices, and assisting in clarification of information need.

Williams and Phillips (2004) attempt to address the collection development and management literature of the past seven years reveals distinct trends among issues, philosophy and practice. Digital age themes reflect the increasingly networked nature of the profession, with new attention focussed on scholarly communications and publishing, digital collection building, consortia collaboration, and quantitative assessment. The literature of collection development and management were primarily applied, reflecting the pragmatic nature of authors and readers. The authors who explore the implications of collection building in the digital age challenge readers to imagine a vastly difficult future for collection development practice.

Peterson (2004) highlighted the achievement and contribution in California Indian tribal libraries. The tribal library is a community center that serves the unique information needs of a native American community, and literacy center, and archive records preserve the heritage of a tribe. Tribal libraries struggle with inadequate and unstable funding, and in California are often denied the benefits of resource sharing agreement within

library networks. Its collection development presents special challenges in terms of identifying, locating and acquiring the materials most needed.

CONCLUSION

Due to globalization in the competitive world many libraries are automating their service providing information at greater speed. Developed countries like Australia USA, Brittan are offering online services to the users. In India many libraries are offering different kinds of online services such as online and, mobile catalogue access, two way text communication and podcasts which has digital collections modified for IPods, smart phones, online subscribed journals, e books. In the electronic information era libraries and librarians have to produce more skilled manpower staff to generate information in the digital and physical form creating the portal through which the users can access the information to get more and more knowledge. Users are very much familiar with the technological advances in the networking and on the web. They require information on the desktop with multiple electronic resources. The libraries and librarians now have to give traditional services as well as digital services to the users.

REFERENCES

AKHTAR HUSSAIN and KRISHNA KUMAR. Use, collection and services of IIRS Library: a survey. *In* BANDYOPADHYA (S S) and others, *Eds.* Proceedings of National Conference on Information Management in Digital Libraries (NCIMDIL).2008. Central Library I.I.T., Kharagpur. P643-46.

WILLIAMS (Sara R) and PHILLIPS (Linda L).Collection development embraces the digital age: a review of the literature, 1997- *IQQZ.Library Resources & Technical Services.4S* (4); 2004; 273-284.

PETERSON (Elizabeth). Collection development in California Indian tribal libraries. *Collection Building.23* (3); 2004, Sep.; 129-132.

RAJRANI. Information needs and the use pattern of journals in economics in the University of Jammu Library: a user survey. *In* Responding to Users need in changing information landscapes: Sojourn of Libraries from Palm-Leaf to PalmTop: 49th ILA Conference held at Jhansi from Dec 29th, 2003 to Jan 1st, 2004. ILA, Jhansi.Pl-9.

YU (Liangzhi) and XU (Jianye).The political economy of public library development in post-1978 People's Republic of China.I/6r/.56 (2); 2006; 117-132.