

Digitization of Valuable Resources in Academic Libraries: An Overview

Samiran Naskar

Ph.D Scholar of Sri Satya Sai University of Technology & Medical Sciences, Sehore, Bhopal (MP) and Librarian of Mrinalini Datta Mahavidyapith, Birati, Kolkata-700051(WB)

ARTICLE DETAILS

Article History

Published Online: 15 April 2019

Keywords

Digitization, Digital libraries, Librarians, Information scientists, Library software, purpose for digitization, Digitization Technique, Advantages and Disadvantages, Implementation.

ABSTRACT

This paper discusses the new activities, methods and technology used in digitization and formation of digital libraries of India. It set outcome key points involved and the detailed plans required in the process, offers pieces of advice and guidance for the practicing librarians and information scientists. Digital libraries are being created today for diverse communities and in different fields e.g. education, science culture, development, health, governance and so on. With the availability of several free digital Library software packages at the recent time, so that the digital library collections has become an attractive and feasible proposition for library and information professionals around the world.

1. Introduction

Digital libraries depend on digital content. There are information resources which are born digital, having created by computational technologies and never existing in analogue format, but the majority of holding offered by digital libraries according Tollee (2002) in Okeke, Udem, Onward (2015) were created through the process of digitization, that is, the conversion of an analogue signal or code into a digital signal or code. Today's libraries are repositories and access points for prints, audio, and visual materials in numerous formats, including maps, prints, documents, micro – form (microform/microfiche), CDs, Cassettes, videotapes, DVDs, Videogames, e-books, audio books and many other electronic resources. Modern libraries are increasingly being redefined as places to get unrestricted access to information in many formats and from many sources. They do this by providing tremendous amount of information with a variety of digital tools.

Digitization refers to all of the steps involved in the process of making convections of historical and other materials available on line. In the world of Information and Communication Technology (ICT) and globalization, digitization of materials is fast becoming the norm among libraries as each seeks to contribute its quota to the world information resource. Libraries embark on the digitization of their resource available electronically thereby providing a wider access to its collections. In a networked campus, users can access the library's digitized resources from their offices and house of residence even when the library is physically closed. Also, as many people as possible can gain access to as much material as needed at any given time, a difficult situation with a text resource.

2. What are Digital Libraries?

A digital library is a collection of digital documents or objects. This definition is the dominant perception of many people of today. Nevertheless, Smith (2001) defined a digital library as an organized and focused collection of digital objects, including text, images, video and audio, with the methods of access and retrieval and for the selection, creation, organization, maintenance and sharing of collection. Though

the focus of this definition is on the document collection, it stresses the fact that the digital libraries are much more than a random assembly of digital objects. They retain the several qualities of traditional libraries such as a defined community of users, focused collections, long-term availability, the possibility of selecting, organizing, preserving and sharing resources.

3. Academic Library Leadership in the Digital Age:

A Library is the heart of every academic institution. As a focal point for teaching, learning, and research, it is expected to provide standard information resources. Today, academic libraries are struggling to keep their place as the major source of inquiry in the face of emerging digital technology. Academic Libraries presently are faced with not only the decision on what books and journals to acquire to satisfy faculty and students but also on how to remain relevant in the digital era, mindful of low budgets and resentment on the part of institution administrators.

Digital technology has revolutionized not only the way information is packaged, processed, stored, and disseminated, but also how users seek and access information. Academic libraries no longer restrict themselves to print services such as collection development, cataloguing and classification, circulation and reference services, current awareness, selective dissemination, and other bibliographic service, but have extended their effort to interdisciplinary concepts and computer software and hardware and telecommunication engineering and technology.

As Lombardi (2000) notes, users will prefer more computer content, more and more computer indices, digitized finding aids, digital repositories of articles, online access to newspapers, etc. libraries also struggle with, when, how, who and where to begin digitization efforts, while keeping in mind that hesitation in digitization of institutional archives will result in relinquishing the function to another institutional repository host. Resources today occur in hybridized form: Print and electronic, and therefore services provided and skills

possessed by professional in these libraries should reflect that trend.

4. Advantages of Digital Libraries:

The Internet and World Wide Web provide the impetus and technological environment for the development and operation of a digital library. The Internet provides the TCP/IP and or its associated protocol for accessing the information and web provide tools and technique for publishing the information over Internet. In the digital environment it is reasonable to say that a central back up or archive should be created at the national level, which will store information output of the region as well as information from outside the country. Some of the advantages of digital libraries are:

1. **Round the Clock Accessibility:** Digital libraries can be accessed at any time, 24 hours a day and 365 days of the year.
2. **No physical boundary:** The user of a digital library need not to go to the library physically, people from all over the world could gain access to the same information, as long as an Internet connection is available
3. **Multiple accesses:** The same resources can be used at the same time by a number of users.
4. **Structured Approach:** Digital library provides access to much richer content in a more structured manner i.e. we can easily move from the catalog to the particular book then to a particular chapter and so on.
5. **Data Retrieval:** The user is able to use any search term bellowing to the word or phrase of the entire collection. Digital library will provide very user friendly interfaces, giving click able access to its resources.
6. **Preservation:** An exact copy of the original can be made any number of times without any degradation in quality.
7. **Networking:** A particular digital library can provide the link to any other resources of other digital library very easily thus a seamlessly integrated resource sharing can be achieved.
8. **Space:** Whereas traditional libraries are limited by storage space, digital libraries have the potential to store much more information, simply because digital information requires very little physical space to contain them. When the library had no space for extension digitization is the only solution
9. **Maintenance Cost:** The cost of maintaining a digital library is much lower than that of a traditional library. A traditional library must spend large sums of money paying for staff, book maintains, rent, and additional books. Digital libraries do away with these fees.

5. Disadvantages or Challenges of the Digital Libraries:

The computer viruses, lack of standardization for digitized information, quick degrading properties of digitized material, different display standard of digital product and its associated problem, health hazard nature of the radiation from monitor etc. makes digital libraries at times handicap.

1. **Speed of access:** As more and more computer are connected to the Internet its speed of access reasonably decreasing. If new technology will not

evolve to solve the problem then in near future Internet will be full of error messages

2. **Copyright:** Digitization violates the copy right law as the thought content of one author can be freely transfer by other without his acknowledgement. So One difficulty to overcome for digital libraries is the way to distribute information. How does a digital library distribute information at will while protecting the copyright of the author?
3. **Environment:** Digital libraries cannot reproduce the environment of a traditional library. Many people also find reading printed material to be easier than reading material on a computer screen.
4. **Skill:** With the much larger volume of digital information, finding the right material for a specific task becomes increasingly difficult.
5. **Initial cost is high:** The infrastructure cost of digital library i.e. the cost of hardware, software; leasing communication circuit is generally very high.
6. **Band width:** Digital library will need high band for transfer of multimedia resources but the band width is decreasing day by day due to its over utilization.
7. **Preservation:** Due to technological developments, a digital library can rapidly become out-of-date and its data may become inaccessible.

6. Objective for Digitization of Library Resources:

The word is fast changing: academic libraries are now responding to these global changes by adopting digitization, digital library and institutional digital repositories in their various institutions. Digitization being one of the important aspects of current global information trends, it fit into the library and information services for effective information dissemination, preservation of information resources and facilitating the integration of library services into the learning process of academic institution.

There are three main reasons for digitization endeavours:

- i. There is a need to preserve endanger library resources
- ii. The improvement of the efficiency of information search mechanism
- iii. Digitization improves access to library resources. Most libraries are digitizing materials which might not be lost in the future, such as old manuscripts, research projects, photo images, analogue maps, non – live musical recordings, government official gazettes and several other historical records, making high –quality digital unpagged available electronically will reduce wear and tear of fragile items.

7. Basic Components of Digital Library:

Most digital libraries share common functional components. These include:

Acquisition and Selection: The typical processes covered in this component include the selection of documents to be added, the subscription of database and the digitization or conversion of documents to an appropriate digital form.

Storage and Indexing: This component carries out the indexing and storage of documents and metadata for efficient search and retrieval.

Organization: The key process involved in this component is the assignment of the metadata (bibliographic information) to each document being added to the collection.

Search and Retrieval: This is the digital library interface used by the end users to browse, search, retrieve and view the contents of the digital library. It is typically presented to the users as Hyper-Text Mark-up Language (HTML) page. These mentioned components are the important characteristic of digital library, which differ it from others collections of online information

Digitization: Witten and David (2003) defined Digitization as the process of taking traditional library materials that are in form of books and papers and converting them to the electronic form where they can be stored and manipulated by a computer. Ding, Choo Ming (2000) has elaborated the works of Getz (1997), Line (1996) and McKinley (1997) on the advantages of digitization. They maintained that:

1. Digitization means no new buildings are required; information sharing can be enhanced and Redundancy of collections reduced.
2. Access to electronic information is cheaper than its print counterpart when all the files are stored in an electronic warehouse with compatible facilities and equipment.
3. Digitization leads to the development of Internet in digitalized based libraries. As Internet is now the preferred form of publication and dissemination.
4. Digital materials can be sorted, transmitted and retrieved easily and quickly.
5. Digital texts can be linked, thus made interactive; besides, it enhances the retrieval of more

Information. In the light of the following advantages, it is natural today to find more information being digitized and uploaded into the Internet or Compact-Disc Read Only Memory (CD-ROM) in order to be made correspondingly accessible globally

8. Technique Of Digitization Of Library Resources:

There is a need to be specific, particularly on the categories of users that will access the collection, the type of material they may be interested in, how they will use it, how many people are envisaged to use it, the planned "procedure for its advertisement, and the benefit of the material to users and institutions, Contacting current and potential users is an excellent way of having clues to all these issues. One may consider sending out a survey to the project's intended audience in order to learn how they are currently using the material, and how they might use it differently if it was digitized. It may be helpful to contact other institutions that have digitized similar collections and learn from their successes and failures.

There is a need to establish time limit for the project. Sensitization, Psychological Preparation and Retraining of Staff: In most places the staff will like to resist the digitization project. It is a common thing for people to resist change, just for the fear of the unknown. The library staff may fear that the success of the project may affect their jobs adversely. Those

who are not computer literate may not be willing to adjust. All these categories of people have their genuine reasons to resist. It is the responsibility of the library management to educate them and allay their fear.

Legal/Copyright Issues: Who owns it? Selection of archival materials for digitization should first be based on a clear understanding of copyright law and the rights of ownership (Tennant, 2000). Does physical ownership mean rights of reproduction? Physical ownership does not mean that an institution owns the rights to reproduce it. One of the most important selection criteria for digitization will be the copyright status of the original materials. Will it be possible to obtain permission to digitize? After digitization, will the institution be able to protect the digital assets by managing the rights to their use? If the institution does not have the rights to digitize, or the means to manage the digital assets, then digital project should not embarked on.

9. Problems Of Digitization Of Library Resources:

Selecting Documents: In an age of information explosion and information pollution, librarians are in a dilemma about „what type of records not to be digitized“. The documents in high demand today may become obsolete even tomorrow because of the vast developments in the subject, printing and publishing industry. A digitized documents deselected from the collection is lost forever. To overcome the problem, librarians should seek the advice of subject experts in each field and users of the library about the importance of each and every record and from this list selection of records for digitization can be done.

Copyrights: The issues regarding copyright rise serious matters before librarians in digitization. Research scholars usually include graphs, data from books and journals without prior permission of the author. In a digital library, users are always demanding back issues of journals and rare historical archives for which the library has no copyright. This may lead to serious dissatisfaction about digitization among users, as a final solution to this matter, librarians must be given permission to digitize copyrights works in connection with digitization.

Longevity of Storage Media: Many of the storage media praised by people all over the world may become less useful only long after they become unreadable. Thus documents digitized and stored in such media become useless and their maintenance will be more difficult than print media. The digital archival media today used are magnetic tapes, CD – Rom discs and DVDs. From the scene magnetic tapes disappeared because of their short life due to demagnetization, material decay and oxidation.

Finance: Digital projects are expensive. Digitization of archival library automation requires enormous funding due to frequent hardware and software upgrades, and increasing cost of subscription to electronic databases. Apart from inadequate fund to train archivists in African, training of archivists in digitization a preservation of electronic format creates a herculean problem. A well-funded digitization project assures new and improved services and sustainability of the project..

10. Implications:

Digital Library of India was formally launched by the then president of India Dr. A. P. J. Abdul Kalam on 8th September

2003 to preserve knowledge and cultural heritage of India. It is part of the Universal Digital Library Project of the US-NSF and Million Books Project envisaged by Carnegie Mellon University, USA. The project is supported by the Ministry of Communications and Information Technology, Government of India and coordinated by Indian Institute of Science, Bangalore. It digitizes and preserves all significant libraries, artistic and scientific works in its three regional mega scanning centre and 21 scanning centres and makes it freely available to world for education and research. The structured metadata of scanned document is created and uploaded to Digital Library Portal which provides a searchable interface to access full-text contents

11. Conclusion:

Digitization of academic libraries facilitates users to access electronic versions of full-text documents and their associated images. They bring significant benefits to the users. However, setting up a digital library requires planning and implementation strategy includes budget, collection & development, selection of content, manpower skills development, digitization and sustainability, etc. This module reviews the steps involved in digitization projects and proposes solutions to improve the efficiency of digital library software packages. Considering the fact that digitization projects take a lot of time, effort and money, the solutions proposed in this module may prove to be useful source of reference.

Reference

1. Ambati, V., N. Balakrishnan, Reddy, R., Pratha, L., Jawahar, C.V. (2006) The Digital Library of India Project: Process, Policies and Architecture. In: Second International Conference on Digital Libraries (ICDL).
2. Anunobi, C.U., Okoye, I.B., (2008). The role of Academic Libraries in Universal access to print and electronic resources in the developing countries, Library philosophy and practice.
3. Campbell, J.D. (2006). Changing a cultural icon: The academic library as a virtual destination. *Educause Review* 41 (1), 66 – 31.
4. . Nnenna, O.B. (June, 2015) *Library Department Ebonyi State University, Abakaliki*, Digitization of Library Resources in Academic Libraries: Challenges and Implication .
5. Gbaje, E.S. (2007). Digitization and its Challenges: Digital records and archival management workshop for members, federal capital territory, Abuja, Archives History Bureau Committee and Liaison Officers. Arewa House Kaduna: 3rd - 9 th
6. Hughes, C. A. (2000). Lesson Learned: digitization of special collections at the university of Iowa libraries. *Do library magazine* 6 (6) Retrieved from www.dlib.org/dlib/june00/hughes/06hughes/html
7. Lee, S. (2002). *Digital imaging, a practical handbook*. London: Facet publishing.
8. Liu, Y.Q. (2004). Best practices, standards and techniques for digitizing library materials: a snapshot of library digitization practices in the USA, Retrieved September 5th, 2015. From www.emeraldinsight.com/1468-4527.