

## DIGITAL LIBRARIES: DEFINITIONS, ISSUES, AND CHALLENGES

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### ABSTRACT

A digital library is nothing but the transformation from traditional library. The digital libraries concept come into existence in the 21<sup>st</sup> century. Virtual library, electronic library, library without walls and digital library are synonymous to each other. In this study, we have to discuss about the definition of digital library, its challenges and issues, etc. Using digital library, access anyone, anytime, and in any form.

**Keywords:** Digital, library.

### WHAT IS A DIGITAL LIBRARY

With the advancement of information and communication technology, the rate of information explosion increases exponentially. Library digitization is nothing but the conversion of physical media of the library, i.e. books, periodical, articles, etc., into digital format (0 and 1 bit). Bits are the fundamental units of information in a computer system. Flexibility is one of the chief assets of digital information. As a result, libraries have been constantly facing the problems of space, escalation in the cost of books and journals, budget shrinkage, inability to provide multiple copies and most important is retrieval efficiency of user being endangered for want of information. The digital library contains digital representation of the object found in it. Digital library is popularly viewed as an electronic version of a library. To some extent, it simply means computerization of traditional libraries. According to Larson, defined the digital library as global virtual library - the libraries of thousands of "networked electronic libraries." Networked electronic libraries describe the collection of various library resources to the network so that any user can access the resources anytime in anywhere.

According to the American Digital Library Federation, 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 collection of digital works so that they are readily and economically available for use by a defined community or set of communities.

The definition of a digital library can be given as a set of characteristics are as follows. The digital library is a collection of services, collection of information objects, supporting users with information objects, organization and preservation of those objects, availability directly or indirectly, and electronic/digital availability. The primary objective of digital library is to improve the access as well as it also includes the cost saving, preservation, keeping pace with technology and information sharing.

A main benefit of digital library is to preserve rare and fragile objects by enhancing their access to multiple users simultaneously. There are several reasons for libraries to go for digitization, but the prime reason for the digitization is the need of the user for convenient access to high quality of information. Other important considerations for the digital library are quality preservation, multiple referencing, wide area usage, archival storage, and security measure.

Digital collection, associated technology, and its work/services are the important characteristics of digital library. Stand-alone Digital Library, Federated Digital Library, and Harvested Digital Library are mainly three types of digital libraries are exist.

### DIGITAL LIBRARIES CREATIONS

One of the largest issues in creating digital libraries will be the building of digital collections. Digital imaging is an inter-linked system of hardware, software, image database, and access sub-system with each having their own components. Tools used for the digital library include several core and peripherals systems like hardware (such as scanners, computers, and data storage), software (image capturing and editing), network (data transmission), and display/printing technologies. Some of the important points to be considered in developing a digital library are as follows:

- a. Digital collection - There are essentially three methods of building digital collections: (i) Digitization, converting paper and other media in existing collections to digital form (ii) Acquisition of original digital works created by publishers and scholars. Example items would be electronic books, journals, and datasets. (iii) Access to external materials not held in-house by providing pointers to websites, other library collections, or publishers' servers.
- b. Access to external digital collection - The digital libraries can obtain access permission to digital collection provided by external sources like institutions, resources of the libraries, electronic journal through on-line access like Elsevier, ACM, etc., which provides their journals on-line through websites.
- c. Access to digital information available on the web - WWW is the repositories of information and one of the important services of the internet. www.edoc.com, mel.library.mi.us, www.inflibnet.ac.in, etc., are the important portal sites or gateways that provide access to electronics resources. In this respect, we can say that digital libraries can provide access to electronic resources through library home page.
- d. Conversion of print to digital - Mainly scanning and use of OCR programs and re-keying of data are the two important methods for converting the print to digital resources. Some of the technical requirements of the digital image processing include hardware (computer, scanner, input/output devices), software (image capturing, data compression/decompression), network (for transferring information for resource sharing), and display technologies. All the above components are the important machines and tools needed for digitization.

### VARIOUS MYTHS AND CHALLENGES OF DIGITAL LIBRARIES

#### Digital library: Myths

##### *The internet is the digital library*

Digital library may be networked or not. If it is networked, any users can access the resources timely. In such a situation on can say that Internet is the digital library.

### *The myth of a single digital library or one-window view of digital library collections*

Many users can access the resources of the digital libraries simultaneously under the networked environment.

### *Digital libraries will provide more equitable access, anywhere, anytime*

In networked condition, digital libraries will provide more equitable access for providing the right information to right user at right time.

### *Digital libraries will be cheaper than print libraries*

As cost is concerned, resources available in digital collection is more best than print libraries.

### **Digital library challenges**

Creating "effective" digital libraries pose serious challenges for existing and future technologies. The integration of digital media into traditional collections will not be straightforward, like previous new media (e.g., video audio tapes), because of the unique nature of digital information, which is less fixed, easily copied, and remotely accessible by multiple users simultaneously. Some specific challenges are resource discovery, digital collection development, digital library administration, copyright and licensing, etc., library of congress specified various challenges for building an effective digital library, which are grouped as broad categories as follows.

#### *Building the resource*

- a. Develop improved technology for digitizing analog materials
- b. Design search and retrieval tools that compensate for abbreviated or incomplete cataloging or descriptive information
- c. Design tools that facilitate the enhancement of cataloging or descriptive information by incorporating the contributions of users.

#### *Interoperability*

- a. Establish protocols and standards to facilitate the assembly of distributed digital libraries.

#### *Intellectual property*

- a. Address legal concerns associated with access, copying, and dissemination of physical and digital materials.

#### *Effective access*

- a. Integrate access to both digital and physical materials
- b. Develop approaches that can present heterogeneous resources in a coherent way
- c. Make the national digital library useful to different communities of users and for different purposes
- b. Provide more effective and flexible tools for transforming digital content to suit the need of end users.

#### *Sustaining the resource*

- a. Develop economic models for the support of the national digital library.

### **DIGITAL LIBRARY ADVANTAGES AND DISADVANTAGES**

#### **Advantages**

The advantages of digital libraries as a means of easily and rapidly accessing books, archives, and images of various types are now widely recognized by commercial interests and public bodies alike. 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 it. As such, the cost of maintaining a digital library can be much lower than that of a traditional library. An important advantage to digital conversion is to highly increased accessibility to users. They also increase availability

to individuals who may not be traditional patrons of a library, due to geographic location or organizational affiliation. Some advantages are as follows:

- No physical boundary: The user of a digital library need not to go to the library physically; people from worldwide can gain access to the same information, as long as an Internet connection is available.
- Round the clock availability: A major advantage of digital libraries is that people can gain access 24/7 to the information, i.e., users can access the information anytime provided the proper network connectivity.
- Multiple accesses: The same resources can be used simultaneously by a number of institutions and patrons.
- Information retrieval: The user is able to use any search term (word, phrase, title, name, and subject) to search the entire collection. Digital libraries can provide very user-friendly interfaces, giving clickable access to its resources properly.
- Preservation and conservation: Digitization is not a long-term preservation solution for physical collections but does succeed in providing access copies for materials that would otherwise fall to degradation from repeated use. Preservation and conservation of data in the digital library are one of an important issue.
- 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 and media storage technologies are more affordable than ever before.
- Added value: Certain characteristics of objects, primarily the quality of images, may be improved. Digitization can enhance legibility and remove visible flaws such as stains and discoloration.
- Easily accessible.

#### **Disadvantages**

There are some disadvantages of digital libraries also, which are as follows:

- User authentication for access to collections
- Digital preservation
- Equity of access
- Interface design
- Interoperability between systems and software
- Information organization
- Training and development.

### **CONCLUSION**

Libraries around the world have been working on this daunting set of challenges for several years now. The library/information center has to overcome the inhibitions and look ahead for the betterment of information services to the user community by successfully adopting the digital technology - the need of the hour and keep pace with world. It seems that the days may not far when the whole world would have digital libraries interconnecting all libraries to meet the academic and research needs within the short time. However, before digital libraries took over the library and information network, the country's archives laws needs to be changed to meet the current challenges in the areas of copyright protection of data and prevention of corruption of data.

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