

# Digital Library: An Overview

**Reena Anand**

Assistant Librarian  
The IIS University, Jaipur (Rajasthan)

**Dr. Umesh Kumar Agarwal**

Dy. Librarian (Retd.)  
MLS University, Udaipur (Rajasthan)



## Abstract

*The recent decades have witnessed tremendous advances in information technology and its application. Electronics publishing and resource sharing activities have become very easy and convenient today. These major changes have led create and develop digital libraries. Digital library is a collection of documents in organized electronic form, available on the Internet or on CD-ROM disks. Digital Library is a Computer based system for acquiring; storing, organizing, searching and distributing digital materials for end user access. All users can access these services from their computers by using an Internet connection. This article will discuss on Digital Library Definitions, History, Benefits, Advantages, Disadvantage the requirement for building a digital library and we will also discuss about distinctions between Traditional library and Digital Library.*

## Meaning of Digital Library

Digital Library is a library in which a significant proportion of the resources are available in machine-readable format, accessible by means of computers. Its contains material in a digitalized form. In digital library available all collection in digital format and that services are provided over the computer networks.. A digital library brings the information to the user's desk, either at work or at home, making it easier to use and hence increasing its usage. With a digital library on the desk top, a user need never visit a library building.

Digital Library, a global virtual library, is a library of thousands of networked electronics libraries. There will be a vast population of users scattered around the globe, who are able to access , easily and conveniently, the complete contents of thousands of repositories containing texts, images, sound recordings, videos, maps and business data, as well as hypermedia combinations of these elements. The Library must a network based distributed system

with local servers responsible for maintaining individual collections of digital documents. Library automation has helped to provide easy access to collections through the use of computerized library catalogue such as On-line Public Access Catalog (OPAC). Many digital libraries also provide an access to other multi-media content like audio and video.

Digital Libraries are defined in many ways, encompassing both analog materials made available digitally and newly created digital content. Already there is misconception about digital libraries in the minds of some of people, particularly traditional library professionals. Because of lack of understanding of the fundamental concepts, different things mean to different people. Some still feel that on-line catalogue or bibliographies are 'digital resources'. Some definitions as following:

## Definitions

- "Digital Libraries are organized collections of digital information. They combine the

- structuring and gathering of information, which libraries and archives have always done, with the digital representation that computers have made possible.”(Lesk)
- “A collection of digital objects, including text, video, and audio, along with methods for access and retrieval, and for selection, organization and maintenance of the collection.” (Ian Witten et al.) “
  - “Digital Library which looks and feels like a paper- based library but where items have been stored in digital form and stored for access in a networked environment which can be used by users in remote locations.”(Stella Keenan).
  - “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.” (Digital Libraries Federation )

**Distinctions between Traditional library and Digital Library**

<b>Traditional Library</b>	<b>Digital Library</b>
• Slow Evolution and stable	• Highly dynamic, ephemeral and versioned
• Content mostly individual object of text and print, generally well defined and categorized, and not dynamically and directly linked with each other	• Digital object not only multimedia but multi-size, not well defined, and fractal
• The physical and logical organization is usually directly controlled and collections	• The physical and logical organization could be virtually correlated and controlled
• Organization and structuring of content is flat and contextual metadata is minimal	• Significant internal scaffolding of data structures and richer contextual metadata
• Limited access points and centralized management of content and collections	• Virtually unlimited access points, distributed collections and access control and content management mostly characterize digital libraries
• The philosophy is invariably free and universal access.	• DL,s support alternative philosophies: free as well free based
• Slow and usually one way interactions	• Dynamic dialogue type, real time and rich interactions

**(Based on Alkin’s summary)**

**History of Digital Library**

The term Digital Library was evolved in early 1970s. The first application of digital library concepts was associated with character-coded storage and full text indexing of legal and scientific documents. The legal information through Electronic system was the Digital Library implemented by US Air Force in 1967. During 1980s sophisticated information storage and retrieval systems came into light. Online hosts like DIALOG and STN started providing full text

online journal although these were simple ASCII or text files without graphics and pictures. In the late 1980s several full text database started appearing for Example IEEE. Another revolution witnesses in digital library system during 19<sup>th</sup> century with the introduction of www. Standard browsers like Netscape Navigator or Internet Explorer are being upgraded regularly for added functionality such as e-mail etc. The recent developments in Digital Library can be attributed to Internet and web technology, which

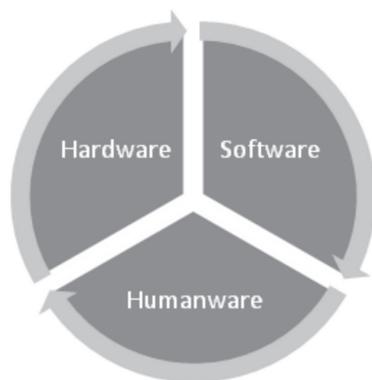
can act as a media of information presentation and delivery.

### Benefits of Digital Library

1. Information is always available
  - Not limited by time and geography (3 A's-Any time, Anywhere, Any format)
2. Wider Access
  - Meet simultaneous access requests for the same resource by many users.
3. Improved preservation
  - It is easier to copy and distribute digital information without fear of maintaining one physical object permanently
4. Information can be shared more easily
  - By intergrading using social software or through network
5. Improved access searching and browsing
  - Support multiple searching and browsing options which is not possible in paper – based material.

### Components of Digital Library

Digital Library requires well tested and proven information technologies by accessing the database or services through networks. The following components are very essentials to create digital library:-



**Hardware**-Internet Connectivity, Computer Servers, Scanners, Storage media (Hard disk and CD), Digital Camera, UPS, Converters, Networks, Multimedia interfaces etc..

**Software**-Operating systems, Digital Library Software and Editing Software

**Humanware (Required for digital library staff)**-Management skills, Technical skills and Subject skills

### Advantages of Digital Library

**1. No Physical Boundary:** - The user of a digital library need not to go to the library physically; people from all over the world can gain access to the same information, as long as an Internet connection is available.

**2. Round the clock Availability:-** Digital Libraries can be accessed at any time , 24 hours a day and 365 days of the year. We can gain access to the information at anytime , anywhere.

**3. Multiple Accesses:-** The same resource can be used at the same time by a number of users.

**4. Structured Approach:-** Digital Library provide 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 and so on.

**5. Information Retrieval:** - The user is able to use any search term bellowing to the word or phrase of the entire collection. Digital Libraries can provide very user- friendly interfaces, giving clickable access to its resources.

**6. Networking:-** A particular digital library can provide a link to any other resources of other digital libraries very easily; thus a seamlessly integrated resource sharing can be achieved.

**7. 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 maintenance, rent and additional books. Digital Libraries do away with these feels.

**8. Preservation and Conservation:-** An exact copy of the original can be made any number of times without any degradation in quality

**9. 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 a library has no space for extension digitization is the only solution.

### Disadvantages of Digital Library

**1. 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?

**2. 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.

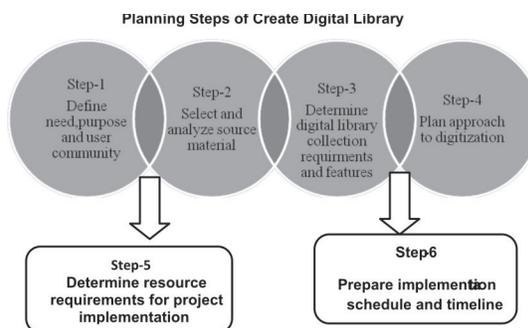
**3. Initial cost is high:-** The infrastructure Cost of digital library i.e. the cost of hardware, software, leasing communication circuit is generally very high.

**4. Bandwidth:-** Digital Library will need high bandwidth for transfer of multimedia resources but the band width is decreasing day by day.

**5. Efficiency:-** With the much larger volume of digital information, finding the right material for a specific task becomes increasingly difficult.

**6. Environment:-** Digital Library 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.

**7. Preservation:-** Due to technological developments, a digital library can rapidly become out of date and its data may become inaccessible



### Conclusion

Growth in web-accessible resources and development in related technologies such as digital libraries have opened up exciting new possibilities for document access. Digital libraries are distinguished from information retrieval systems because they include more types of media, provide additional functionality and services, and include other stages of the information life cycle, from creation through use. Information is always available. Library Professional can develop a digital library by using above six steps. We can access Digital library any time anywhere because there are not limited by time and geography (3 A's-Anytime, Anywhere, Any format). Digital Library is essentially a fully automated information system with all resources in digital form .The electronic media will replace the printed media in the form of electronic, digital, virtual.

In 21<sup>st</sup> century libraries are changing very fast by use of ICT based resources and services. Therefore, Digital library is essential for the information professionals to adapt to the ICT scenario by improving the skills of using new Digital Technology. The professionals should created digital library initiatives and projects, and have formed various national schemes for jointly exploring key issue. Digital libraries provide an effective means to distribute learning resources to students and other users. Planning a digital library requires thoughtful analysis of the organization and its users, and an acknowledgement of the cost and the need for infrastructure and ongoing maintenance (Adams,

Jansen, and Smith 1999). Digital Libraries present opportunities and challenges for the library and information communities and all stakeholders.

### References

1. Ansari, Mahtab Alam. (2003). Digital Libraries: needs, technology and benefit, ILA Bulletin.38 (3), pp. 22-26
2. Arora, J. (2001). *Indian National Digital Library of Engineering library of engineering Science and Technology: A Proposal for Strategic Co-operations for Consortia-based access to Electronic Resources*. The International Information & Library Review. 33(2-3), pp. 149-165.
3. Balasubramanian,P. (2011). *Library Automation and Networking*. pp. 81-85.
4. Bearnman, D. (2007). *Digital Libraries*. Annual Review of Information Science and Technology. Vol.41, pp. 223-72.
5. DESIDOC Bulletin of Information Technology 17 (6) (November 1997) (Special Issue on Digital raries)
6. Gautam (G.K). (2010). *Digital Library: An Overview*. National Conference : Library services in e-environment. Gurgaon.
7. IGNOU. Information Communication Technology : appliocation. MLIS Block. 104 part-II. Delhi. Problems in transition to a Digital Library: An Indian Perspective. DESIDOC Bulletin of Information Technology 22(6): 13-19.
8. Khan, Shakeel Ahmad, Khayat, Roshan and Yunus, Mohad. (2003). *Digital Libraries: The Present Scenario*, ILA Bulletin 39(2) pp. 3-7.
9. Koteswara Rao, M. (2003). *Digital Libraries: Challenges, Opportunities and Implications*. Paper presented at SIS-2004 Conference 22-23 Januray 2004, Madras.
10. Kumar, Bhuvan and Reddy, V. Sreeniuas. (2003). *Digital Library Use: A Case Study of NIT Library, Waraangal*, ILA Bulletin 39(2) pp. 40-45.
11. Mc Millan (Gail). Digital Libraries support distributed Education Available at <http://www.ala.org/2003>
12. [http://liswiki.org/wiki/Digital\\_library](http://liswiki.org/wiki/Digital_library)