



## CHALLENGES IN MANAGING DIGITAL LIBRARIES IN ACADEMIC LIBRARIES

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### **Abstract:**

The author highlighted the trends and challenges discussed by various authors and also proposed general principles characterizing digital libraries. Development of Digital library issues are common regarding to the Lack of proper Information & Communication Technology (ICT) Infrastructure, Lack of Proper Planning and Integration of Information Resources, Rigidity in the publishers' policies and data formats, Lack of ICT Strategies and Policies, technical skills and management support and copyright issues. Also discusses how to manage the traditional and born digital collection in the Digital Library.

**Keywords:** Digital Library, challenges, Digital Library Initiatives, Management, E-Resources.

### **1. Introduction:**

The growing impact and subsequent user awareness of information and communication technologies (ICTs), Web technologies and database technologies have compelled libraries to resort to digital library technology in order to render more effective information services. With the exponential growth of e-resources, it has become imperative for library and information professionals to redefine their function of disseminating information to the respective users (Ongus and Nyamboga, 2004).

### **2. Digital Library:**

Digital library refers to a collection that constitutes electronic resources, accessible through the World Wide Web. It often contains





electronic versions of books, photographs, videos that are owned by a “physical” library.

### **3. Features:**

Digital libraries have attracted almost all the developed and developing countries due to its features and the opportunities it extend to the information providers and information seekers. The digital library has the information in the electronic form and electronic media facilitates the access to information available in digital form at different places. It offers new levels of access to broader audiences of users and new opportunities for library and information science field to advance both theory and practice. They contain information collections predominantly in digital or electronic form. Electronic publications have some special problems of management as compared to printed document. They include infrastructure, acceptability, access restrictions, readability, standardization, authentication, preservation, copyright, user interface etc. But still the advantages are more and therefore the importance of digital libraries have been recognized by all nations of the world. India has indeed recognized the importance of digital libraries and lots of initiatives have been taken by various libraries / institutes / organizations.

Deegan and Tanner (2002, 22) proposed some general principles characterizing digital libraries. They comprise the following:

- (i) Digital libraries are managed collections of digital objects;
- (ii) Digital objects are created or collected according to principles of collection development;
- (iii) Digital objects are made available in a cohesive manner, supported by services that are necessary to allow users to retrieve and exploit the resources just as they would any;





(iv) Digital objects are treated as long-term stable resources and appropriate processes are applied to ensure their quality and survivability. It takes to establish a fully functional digital library as following:

**(i) Knowledgeable staff:**

Any organization that intends to establish a digital library must have a sustainable arsenal of suitably knowledgeable and skilled staff. However it suffices to say that they must be hardworking and committed individuals, loyal to their parent organization, ready and eager to continuously learn new activities pertaining to information technology with particular emphasis on digital libraries and must have the tenacity to apply whatever they learn in their workplace. Above all, they must be compassionate and extremely sensitive to the information needs of the clientele they serve.

**(ii) Provision of digital content:**

The digital library must contain information resources. It may either be new material prepared digitally from scratch (i.e. born digital), or it may be old material, converted into digital form (i.e. digitized). It may be bought, donated or converted locally from previously purchased library stock. Digital content then needs to be stored and retrieved. Information is widely found as text stored as characters and images acquired using optical scanners. These images are frequently scans of printed pages, as well as illustrations or photographs. More recently, audio and video, plus interactive materials are accumulating rapidly in the digital form both newly generated and converted from older material. Copyright aspects also have to be carefully considered, at this stage, and everything has to be carried out without contravening the existing laws on fair use of information resources, in this regard.

**(iii) Searching of digital information resources:**





After storing information in a digital library, mechanisms ought to be in place for one to accurately identify and locate the piece of information sought.

**(4) Digital library development issues in India:**

There are umpteen numbers of problems the Digital Library development teams face in India while they embark on the digital library development as well as during the progress phase. Some of the prominent and predominant among them include the following :

***i. Lack of proper Information & Communication Technology (ICT) Infrastructure***

Digital Libraries demand cutting edge IT and Communication infrastructure such as:

- a) High end and powerful Servers; Structured LAN with Broadband Intranet facilities, ideally optical fibre based Gigabit networks;
- b) Required number of Workstations capable of providing online information services, computing and multimedia applications;
- c) Internet connectivity with sufficient bandwidth, capable of meeting the informational and computational requirement of the user community;

There are many more related facilities / services which are highly essential in an ideal digital library environment. It is observed that the ICT infrastructure in most of the Institutions / Organizations, barring exceptions, are not up to the desired level so as to run advanced digital library services to the optimum level.

***ii. Lack of Proper Planning and Integration of Information Resources***

Presently the library acquisitions in India are either paper based and electronic. In most of the libraries, paper based documents outnumber the electronic subscriptions and acquisitions. Some of the libraries need retro-conversion and digitization of library holdings too.







Literature on related studies show that there is a severe lapse on the libraries with regard to proper planning of their information resources which are conducive for developing digital libraries. Also, the electronic resources penetrate to the libraries in a multiplicity of complex formats and with different access terms and conditions. These information resources are scattered and distributed across a wide variety of publication types and a vast number of publishers. There is a dire need for proper planning and a meticulously framed content integration model which is achieved and implemented through world standard digital library technologies.

### ***iii. Rigidity in the publishers' policies and data formats***

Having successfully installed and configured a digital library does not qualify a library to automatically populate all its digital collection into the digital library. One has to obtain publisher's consent and copyright permissions for the same. Digital library softwares usually accept and process all popular and standard digital formats such as HTML, Word, RTF, PPT, or PDF. Most of the publishers put their materials in their own proprietary e-book reader formats, from which the text extraction becomes almost impossible. A vast majority of the scholarly content rests in journal literature and due to copyright issues they cannot be easily (almost impossible) find its way into the local repositories of the digital library.

### ***iv. Lack of ICT Strategies and Policies***

A vast majority of the libraries in India do not have laid down policies on ICT planning and strategies to meet the challenges posed by the technology push, the information overload, as well as the demand pull from the users.





### ***v. Lack of Technical Skills***

The Human Resources available in the libraries need time-to-time professional enrichment inputs and rigorous training on the latest technologies which are playing around in the new information environment. The kind of training programmes being imparted in India at the moment are not able to meet the demand in terms of quantity as well as quality.

### ***vi. Management Support***

For the provision of world class information systems, resources and services the libraries need the wholehearted support from the respective management. Institutional support in terms of proper funding, human resources and IT skills enrichment are prerequisites for the development and maintenance of state-of-art digital library systems and services. There are many more pressing problems being faced by the libraries in India in its pursuit of building digital libraries.

### ***vii. Copyright / IPR Issues***

Issues of copyright, intellectual property, and fair use concerns are posing unprecedented array of problems to the libraries and librarians are struggling to cope with all these related issues in the new digital information environment.

## **5. Challenges & opportunities:**

There are various challenges and opportunities regarding to the building of Digital Library as following:

- Building digital collections of national importance from existing texts, documents, images etc.
- Creating new digital documents & linking them
- Subject portals: Selecting and maintaining open source digital resources
- Developing / adapting management tools for digital collections





- Providing access to digital collections
- Integrating digital & other library collections
- Including integration of OPACs, subscribed e-resources and subject portals
- Establishing services for digital libraries
- online access & offline support
- education & training of users and librarians
- Addressing social, legal, policy issues
- Outsourcing digitization and services

#### **6. Management of Digital Resources:**

For developing a digital library, one has to start with following information resources:

- **Already available Internet resources-Virtual Library**
- **Digitally born documents in the institution-Physical Digital Library**
- **Resources available in printform- Digitisation**
- **Virtual reference resources:**

Internet is a very good source of ready references. A number of online reference tools/sources e.g. Dictionaries, Encyclopedias, Thesauri, Glossaries, Biographies, Geographical sources including GIS, patents, standards, online databases, reference sources for current events e.g. conference proceedings and seminars, Directories, Online interactive education websites on various topics etc. The list of such references sources can be compiled and made available to the researcher according to the demand of the users.

- **Digitally Born documents in the institution-physically Digital Library:**

The purpose of the physical electronic library is to provide fast, uninterrupted access to the resources available through INTRANET





or to remote users beyond the local building of the organization and to select the user group through extended INTRANET. Depending on the policy of the institution, these collections may also be provided access through Internet through web-portal. The collection of the Physical digital library may be Downloaded online full-length documents from the

- Internet
- Journals available on CD-ROM
- In-house bibliographic /news clippings/question bank
- In-house databases
- Digitized documents
- Projects etc.
- **Downloaded online full length documents available on Internet**

The service provided to the user on demand or as per need on request. The full length articles, documents downloaded from the Internet can be placed on the central server. Through the server, one can avail the facility.

- **CD-ROM collection through INTERNET or INTRANET**

The collection i.e databases available on CD-ROM can be accessed through INTERNET or INTRANET.

## 7. **Conclusion:**

The management of digital libraries demands the invoking of revolutionary skills and techniques, previously not commonly applied in traditional libraries.

Librarians and other information professionals must brace themselves to offer novel proactive information services. They also have to keep learning new tricks to make their service provision as attractive to actual as well as potential information users, for as long a time as possible.







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