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ISSUES AND CHALLENGES OF DIGITAL LIBRARY SYSTEM

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ABSTRACT:

The idea of easily accessing information at the fingertips of what we envision as a digital library today began with Wenner Bush's Memex machine and evolved with each advancement in information technology. With the advent of computers, the concept has shifted to large bibliographic databases, now familiar online retrieval and public access systems that are part of any contemporary library. When computers were connected to large networks and the Internet was created, the concept redeveloped and research turned to creating a library of digital information that anyone could access from anywhere in the world. Phrases such as "virtual library", "electronic library", "library without walls" and more recently "digital library" have been used interchangeably to describe this broader concept.



KEYWORDS: Digital Libraries, ICT, Digital Collection.

INTRODUCTION:

Today digital libraries are being created for different communities and for different sectors like education, science, culture, development, health, governance etc. With the recent availability of many free digital library software packages, the creation and exchange of information through digital library archives has become an attractive and viable proposition for libraries and information professionals around the world. Digital libraries differ significantly from traditional libraries in that they allow users to gain online access and work with electronic versions of full text documents and associated images. Many digital libraries also provide access to other multimedia content such as audio and video.

WHAT IS DIGITAL LIBRARY?

With the advancement of information and communication technology, the rate of information explosion is increasing rapidly. Library digitization is the process of converting the physical resources of a library, ie books, journals, articles, etc., to digital format (0 and 1 bit). Bits are the basic units of information in a computer system. Flexibility is a major asset of digital information. As a result, libraries have problems with space, increased prices of books and journals, budget cuts, inability to provide multiple copies, and most importantly, lack of information that threatens user recovery efficiency. A digital library is a digital representation of an object found. The digital library is popularly viewed as an electronic version of the library. To some extent this means computerization of traditional libraries. According to Larson, the digital library is defined as the world's virtual library - the library of thousands of "network electronic libraries". Networked electronic libraries describe the collection of various

library resources on the network so that any user can access the resources anytime anywhere. According to the American Digital Library Federation, digital libraries are organizations that provide resources with specific staff, select, design, provide intellectual access, interpret, distribute, preserve integrity, and ensure timely collection. Digital functions so that they are easily and financially available for use by defined communities or sets of communities.

A digital library can be defined as a set of features as follows. A digital library is a collection of services, a collection of information objects, helping users with information objects, the organization and storage of those objects, direct or indirect availability and electronic / digital availability. The primary purpose of a digital library is to improve access, as well as to save costs, protect, maintain peace with technology, and exchange information. The main advantage of a digital library is that it preserves rare and delicate objects by increasing their access to multiple users at the same time. There are many reasons to go to the library for digitization, but the main reason for digitization is that the user needs convenient access to high quality information. Other important aspects for a digital library are quality protection, multiple references, wide area usage, archive storage and security measures. Digital storage, related technology and its functions / services are important features of a digital library. There are three main types of digital libraries: stand-alone digital library, federation digital library and harvested digital library.

CREATIONS OF DIGITAL LIBRARY:

The biggest problem when creating a digital library is creating a digital collection. Digital imaging is an inter-linked system of hardware, software, image databases and access subsystems, each with its own components. The tools used for digital libraries include many major and peripheral systems, such as hardware, software, networks, and display / printing technology. There are several important things to consider when developing a digital library:

- **Digital Collection** - There are three ways to create a digital collection: (i) Digitization, conversion of existing collection of papers and other media to digital form (ii) Editing of original digital works created by publishers and scholars. Examples are electronic books, journals and datasets. (iii) Access to external content that is not in-house by providing pointers to websites, other library collections, or publisher's servers.
- **Access to External Digital Collections** - Digital library organizations can obtain access to digital archives provided by external sources such as library resources, electronic journals, online access, such as Elsevier, ACM, etc., which provide their journals online. Via websites.
- **Access to Digital Information Available on the Web** - WWW is a repository of information and one of the most important Internet services. www.edoc.com, mel.library.mi.us, www.inflibnet.ac.in etc. These are important portal sites or gateways that provide access to electronics resources. In this context, we can say that digital libraries can provide access to electronic resources through the Library Home page.
- **Digital conversion of print** - Scanning and the use of OCR programs and re-keying of data are the two most important methods of converting print to digital resources. Some of the technical requirements of digital image processing include hardware, software, network and display technology. All of the above components are important tools and devices required for digitization.

CHALLENGES OF DIGITAL LIBRARY:

Creating an "effective" digital library poses serious challenges to existing and future technologies. The integration of digital media into traditional archives will not be as straightforward as previous new mediums (e.g. video audio tapes), because of the unique nature of digital information, which is less fixed, easily copied and can be accessed remotely by multiple users at once. Specific challenges include resource discovery, digital archive development, digital library administration, copyright and licensing, etc. The Library of Congress has identified various challenges to create an effective digital library, which are broadly categorized as follows.

The optimism and hype of the early 1990's has been replaced by the realization that building a digital library would be a difficult, costly and long-term endeavour. Creating an effective digital library is a serious challenge. Integrating digital media into traditional archives will not be easy, as with previous new mediums it is less fixed, easily copied and remotely accessible to multiple users at once. Below are some of the major challenges facing the development of digital libraries?

1. Technical Architecture:

The first problem is the technical architecture that underlines any digital library system. Libraries need to enhance and upgrade their existing technical architecture to accommodate digital content. Architecture will include elements such as:

- High-speed local network and fast connection to the Internet
- Relational databases that support a variety of digital formats
- Full text provides search engines with indexing and access to resources
- Various servers, such as web server and FTP server
- Electronic document management functions that will assist in the overall management of digital resources

One important thing about digital architectures for digital libraries is that they may not be monolithic systems like turn-key, single box OPAC to which librarians are most familiar. Instead, they will be collections of different systems and resources connected by a network and will be integrated into one interface, most likely the web interface or one of its descendants.

Although these resources may be on different systems and in different databases, they may appear to be a single system for users in a particular community. An integrated digital library plan will require certain general standards to allow digital libraries to interact and share resources. The problem, however, is that many digital libraries have a wide variety of different data structures, search engines, interfaces, controlled vocabulary, document formats, and so on. Due to this diversity, it would be an impossible endeavor to organize all digital libraries nationally or internationally. Thus, the first task is to find the right reasons to federation specific digital libraries into one system. Shrinking the area in this way will reduce the technical and political hurdles required to establish common ground. Further, due to the uncertain future of both de jure and de facto standards over time, it is unclear what those standards are.

2. Creation of Digital Collection:

The biggest problem when creating a digital library is creating a digital collection. Of course, for any digital library to be viable, it must have a critical mass digital archive in order to be truly useful. There are three ways to create digital collections:

- Digitization, conversion of existing archive paper and other media to digital format.
- Editing of original digital works created by publishers and scholars. Examples are electronic books, journals and datasets.
- Access to external content by providing pointers to web sites, other library collections or publisher's servers

The third method is a way to increase the content available to local users, even if it is not part of the local collection. One of the main problems here is that libraries will digitize existing content and retrieve original digital works, rather than just displaying them externally. This is a resurgence of the ownership issue against the old entry - but in the digital realm - with many similar concerns such as:

- local control of collections
- long-term access and preservation

How can specific content be identified by a given organization? What content compiles and / or digitizes What components can be based on factors such as:

- **Storage power:** A particular library with a strong collection focus may be responsible for digitizing selected parts of it and adding new digital functions to it.
- **Unique collection:** If there are only copies of something in a library, they explicitly digitize it
- **User community preferences:** Due to such priorities, it would be appropriate to keep the material locally, for example, due to the demands of the curriculum
- **Autonomous part of the collection:** When there are no other overlapping criteria, the literature can be divided into organizations according to whether it is reasonable to compile or digitize any one organization.
- **Technical architecture:** The state of the technical architecture of the library will also be a factor in choosing what digitization does. The library must have the technical structure to support a specific digital collection.
- **Staff skills:** Institutions that do not have the required skills cannot become key nodes in the national plan.

However, how an archive is created in-house digitized content, original digital work, or access to content by pointing to other external resources-must be ensured that it is preserved in the collective library and will be made permanently available. For example, if only copies of digital works live on a particular publisher's server, what if the publisher goes bankrupt? Or if the market value of a particular work falls to zero? Lost all parts of a library's digital collection, such as a catastrophic event? Policies and a plan will be needed to ensure long-term protection and access by which waste permanent copies will be stored in designated institutions.

3. Digitization:

Remember that one of the primary methods of digital collection building is digitization. What exactly does this word mean? Simply put, this means scanning, sampling, or even re-kinging of any static or analog medium such as books, journal articles, photos, pictures, microforms by electronic means. One obvious obstacle to digitization is that it is very expensive. An estimate from the University of Michigan at Ann Arbor, how do you decide which parts of the collection to digitize? There are several methods available, at least theoretically:

- **Retrospective conversion of collections** - Basically, starting from A to Z. Although such a complete conversion is ideal, it is technically, legally, and financially impractical or impossible. This approach can be disputed as a pipe dream.
- **Digitization of a particular special collection or part.** A small collection of self-contained size, and one that is very valuable, is the leading candidate.
- **Highlight diverse collections** by digitizing Some particularly good examples of collection power
- **High-use materials** make the most in-demand materials more accessible.
- **An ad hoc approach**, where an individual digitizes and stores content on demand. However, this is a messy method of digital collection building.

These approaches can be used individually or collectively, depending on the specific organization's objectives for digitization.

4. Metadata:

Metadata is a central issue in the development of digital libraries. Metadata is data that describes the content and properties of any particular item in a digital library. This is a concept familiar to librarians because it is one of the first things librarians do - they create cataloguing records that describe documents. Metadata is important in a digital library because it is the key to resource search and use of any document. Anyone who has used AltaVista, Excite or any other search engine on the Internet knows that simple full-text searches are not counted in large networks. One can get thousands of hits, but most of them will be irrelevant. Formal library standards for metadata, i.e. AACR, take a long

time to create such records and require specially trained staff. Human cataloguing, though superior, is already too laborious for an environment of large and rapidly expanding information. Thus, simple schemes for metadata are being proposed as solutions.

CONCLUSION:

Libraries around the world have been working on these difficult challenges for many years. He has created a number of digital library initiatives and projects, as well as various national plans for jointly exploring major issues. With many years of accumulated experience, the initial excitement surrounding the development of a digital library has been replaced by sober second thinking. Librarians have discovered that, with few exceptions, digitization and investing in digital technology is more difficult than previously thought, especially due to the technical and legal hurdles that must be overcome first. As with other technical developments in the library, we need to move forward in small, self-contained, evolutionary steps without going into a rapid revolutionary process.

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