Digital Library: An Introduction

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ABSTRACT

Today, every library is slowly getting digitized. A digital library is a library where you can find digital repositories, or digital collections, and online databases of digital objects. The objects may include text, still images, audio, video, digital documents, or other digital media formats. Most digital libraries provide services for twenty-four hours a day, seven days a week and they can be accessed anywhere anytime. No organization can remain relevant in the knowledge economy without facilitating digital library access.

This paper examines the impact of digital transformation on libraries.

KEYWORDS: digitalization, digital library, online library, virtual library, e-library

INTRODUCTION

The traditional library typically consists of books with their shelves, repositories and maddeningly complex filing systems. This kind of library is slowly but steadily becoming the thing of the past. The decline in visits to traditional libraries suggests that patrons prefer accessing information without visiting a library in person. The digital libraries provide a more convenient, cost-efficient, and less energy-consuming approach to using the library. Figure 1 shows the main stages in evolution of libraries [1].

Although the digital libraries have been replacing the traditional ones since the beginning of the digital age, the traditional libraries are still around – the British Library in London, the Library of Congress in Washington, D.C., the New York Public Library, the Bavarian State Library, the Europeana Library, and many more. It is highly possible that eventually digital libraries will replace traditional ones in course of time. With the majority of the world's population connected to the Internet, it is feasible to create a single repository of all the books and make the books accessible to anyone anywhere anytime [2].

WHAT IS A DIGITAL LIBRARY?

A digital library (also known as online library, virtual library, e-library, Internet library, a digital repository, a digital collection, or a library without walls) is an online database of digital objects that can include text, still images, audio, and video. It is more convenient and efficient to keep books and other objects in electronic format. Digital libraries vary in size and scope (humanities, engineering, science, etc.), and can be maintained by individuals or organizations.

Digital libraries emerged in the early 1990s. The evolution of digital libraries is marked by several phases. The phrases consist of the early formative decade in the 1990s, mass digitization in the 2000s, and the large-scale aggregations undertaken in the last few years. Digital libraries have emerged as complex, multilayered, distributed systems that serve as information systems in a networked environment providing search and retrieval mechanisms and supporting user interaction. Extensive digitization efforts have accompanied the transformation of the wealth of traditional scholarly and cultural materials held in libraries, archives, and museums into a digital

format. These efforts led to large-scale digital libraries, such as the Digital Public Library of America, Europeana, or HathiTrust [3]. The basic structure of digital library is depicted in Figure 2 [4].

Digital library creation and management go through several phases: planning, prototyping, building, testing, launching, operating, and upgrading. They are Internet sites consecrated to the creation and preservation of electronic book collections. They are mainly stocked with sources of information that are available on the Internet in open access format. Due to copyright restrictions, access to the content of most digital libraries is limited to students and faculty whose universities subscribe to the digital library [3].

FEATURES OF A DIGITAL LIBRARY
The digital library has the following exciting features [5]:
➢ *No Physical Restrictions*: One can access a digital library from anywhere, anytime.
➢ *Multiple Access*: Several individuals and institutions can access the same resource at the same time.
➢ *Easy-to-Use*: With Internet access, DLs are more comfortable to use as compared to physical libraries.
➢ *Conservation and Preservation:* No matter how many times a resource is being accessed, it remains preserved in its original form.
➢ *No Limitation of Space:* DLs can store thousands of resources without facing the difficult of limited space.
➢ *Not Time-Bound:* With a DL, all you need is to pay a minimum subscription price, and then you will have access to all of their material until the subscription expires.
➢ *No Boundaries of Knowledge:* Digital Libraries reduce the regional and national boundaries of knowledge. You can access any text from any place in the world!
➢ *360-Degree Virtual Learning Experience*: Some technologically advanced digital libraries have a 360-degree virtual learning experience.

TYPES OF DIGITAL LIBRARY
There are many types of digital collections (libraries, archives, and museums) [6]:
➢ *Academic libraries:* These are owned by colleges or universities. They are actively involved in building repositories of their institution's books, papers, theses, and other works that can be digitized. Big colleges and universities have developed their own digital libraries.
➢ *Regional or State Libraries:* These are owned by a state or region. Examples include the New York Public Library and the Bavarian State Library.

➢ *National libraries:* They are usually owned by a national government, made available to benefit the citizens. Examples include the British Library in London, the Library of Congress in Washington DC, and the Europeana Library.
➢ *Corporate Libraries*: Corporates have started adopting digital libraries for their employees. For example, Boeing has a digital library that has branches spread all over the US to serve their employees.
➢ *Publisher Library:* The publishers have gone digital and placed their publications on their digital libraries. Examples include McGraw's library, Pearson's library, Cengage's library, and Elsevier.
➢ *Digital Archives:* Archives differ from libraries in the nature of the materials held. The material in archives and manuscript libraries are "the unique records of corporate bodies and the papers of individuals and families."

EXAMPLES OF DIGITAL LIBRARIES
There are hundreds of digital libraries around the world. They are developed by communities, governments, corporations, and institutions. The following libraries are just typical.
➢ World Digital Library
➢ Bibliothèque Nationale de France
➢ Bartholomew County Public Library
➢ Thompson-Nicola Regional Library
➢ Ohio Digital Library
➢ Universal Digital Library. A collection of one million books.
➢ Google Books.
➢ Texas Digital Library
➢ National Taichung Digital Library
➢ IEEE Xplore
➢ Internet Archive
➢ JSTOR Open Access books
➢ HathiTrust Digital Library

It is evident that some of these digital libraries are owned by universities, publishers, states, and nations. Some these libraries are open to the general public, while others are not. The collections in each library are often in form of database A-Z to making search easy. Subscriptions to some of the digital libraries (such as IEEE Xplore) are available on an institutional basis and are expensive. Figure 3 shows a digital library at the National Library of Korea [7].

ADVANTAGES
Like traditional libraries, digital libraries serve as public guardians over information and have strong ethical traditions. They offer digital services and distributed knowledge to meet the needs of users in electronic format. These include fervent protection of

readers' privacy, equal access to information, diversity of information, serving the underserved. Librarians traditionally see themselves as providing information to those who cannot afford to pay for that information on the open market [8]. Digital Libraries are a blessing to students, schools, universities, and everyone who loves learning. They can easily access books and other scholarly resources. Digital libraries have the following advantages over traditional libraries [9]:

➢ *Make a Wide Variety of Content Access*: The digital libraries store a wide range of content – eBooks, magazines, articles, blogs, papers, videos, podcasts, and audiobooks – in a virtual environment without limitation of physical space.

➢ *Latest and updated:* A digital library provides access to the latest publications. Many publishers these days allow digital libraries to make the latest editions and magazines accessible to the readers based on the pay-as-you-read model.

➢ *Allow Readers to Access Materials on Demand*: The younger readers or digital natives opt for digital versions of books to read the content anytime and anywhere.

➢ *Make Readers Find Resources Instantly:* Many digital libraries speed up the content search by leveraging popular search engines like Google, Bing, and Yahoo.

➢ *Round the clock availability*: The digital libraries enable readers to read eBooks, listen to audiobooks, and watch videos 24/7.

➢ *Multiple and Simultaneous Access:* Multiple readers can access the same books, videos, and audiobooks simultaneously in a digital environment.

➢ *Library Management Automation:* The digital libraries have converted librarians into cybrarians through automation of routine library services – indexing, issuing, tracking, and preservations.

➢ *Real-Time Interactions:* These real-time interaction options help readers to collect additional or specific information about a book or article in a few seconds.

➢ *Eliminate Deterioration of Resources:* Many organizations digitize their libraries to make the digital resources accessible to a large number of readers regularly without focusing on the preservation of physical materials.

➢ *Preserve Knowledge for the Future Generation:* Digital libraries store resources in the cloud. They store valuable researches and studies for future generations.

➢ *Mintbook Digital Library*: Mintbook, an ISO 27001 and ISO 9001 certified company, allows you to integrate the digital library with a learning management system (LMS) and virtual classroom software seamlessly.

➢ *Copying*: A digital book is not the same as a physical book – you cannot copy the latter without the great expense of time and money while copying the former takes less than a second.

➢ *Added value*: Digitization can enhance legibility and remove visible flaws such as stains and discoloration.

DISADVANTAGES

Digital library poses unique challenges for organizing, presenting, and preserving digital resources and serving user communities in virtual information spaces. Universal access to any document is technically not feasible at the moment but is currently constrained by social, economic, and legal barrier.

➢ *Copyright:* Digital libraries are hampered by copyright law because, unlike with traditional printed works, the laws of digital copyright are still being formed.

➢ *Cost:* Developing digital libraries is expensive. The cost of hardware, software, and using computer network is very high. The cost of building and maintaining the terabytes of storage and servers 24/7 is exorbitant. Small libraries often lack adequate resources to purchase new books, magazines, and subscribe to journals and magazines. However, the cost of managing the digital libraries is cheaper than that of the traditional libraries.

➢ *Reluctance:* Many publishers are reluctant to offer their libraries in digital form. Copyright and piracy concerns make them hesitant to share their digital books with third parties

➢ *Preservation:* Due to technological developments, a digital library can rapidly become out-of-date and its data may become inaccessible. Digital works are very fragile, and pro-active steps need to be taken in order to make sure that they persist over time
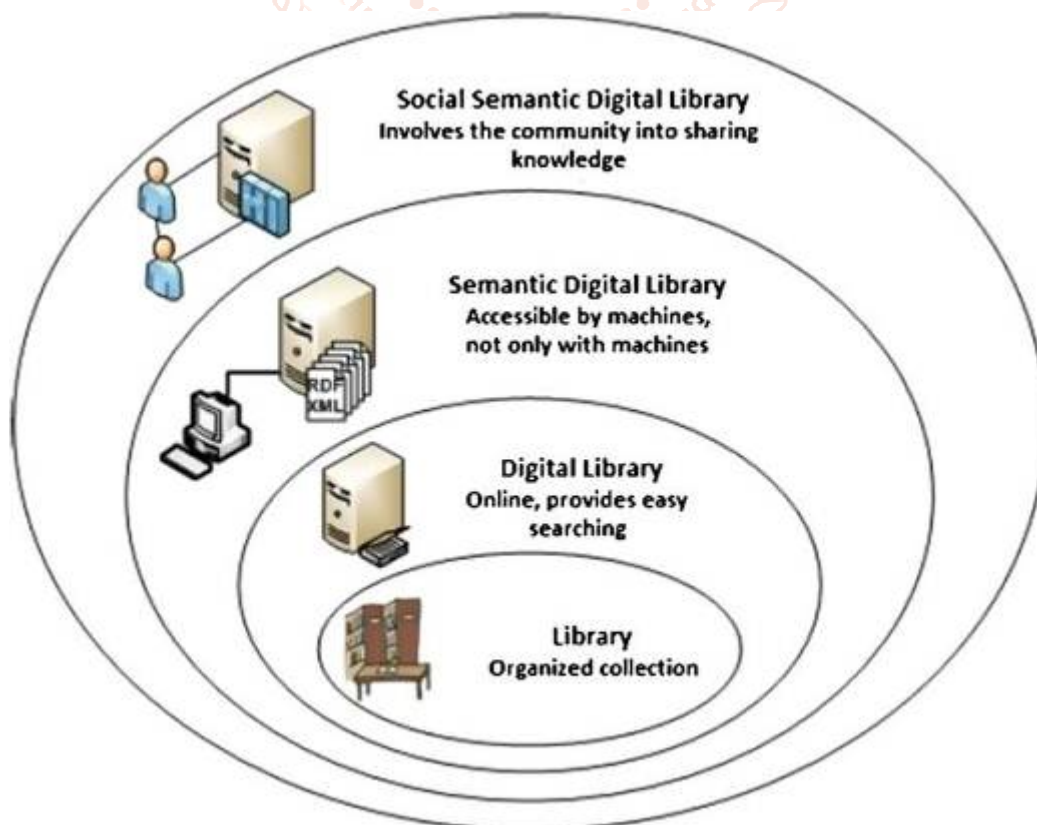
CONCLUSION

Digital libraries will be critical to future of scholarship. They are a worldwide phenomenon. In the digital age, digital libraries appear to be as critical to scholarship as brick-and-mortar libraries were to scholarship in previous centuries. They provide 24/7/365 access to a large collection of specialty scientific journals, publications, and databases. For more information about digital library one should consult the books in [10-18] and the following related journals:
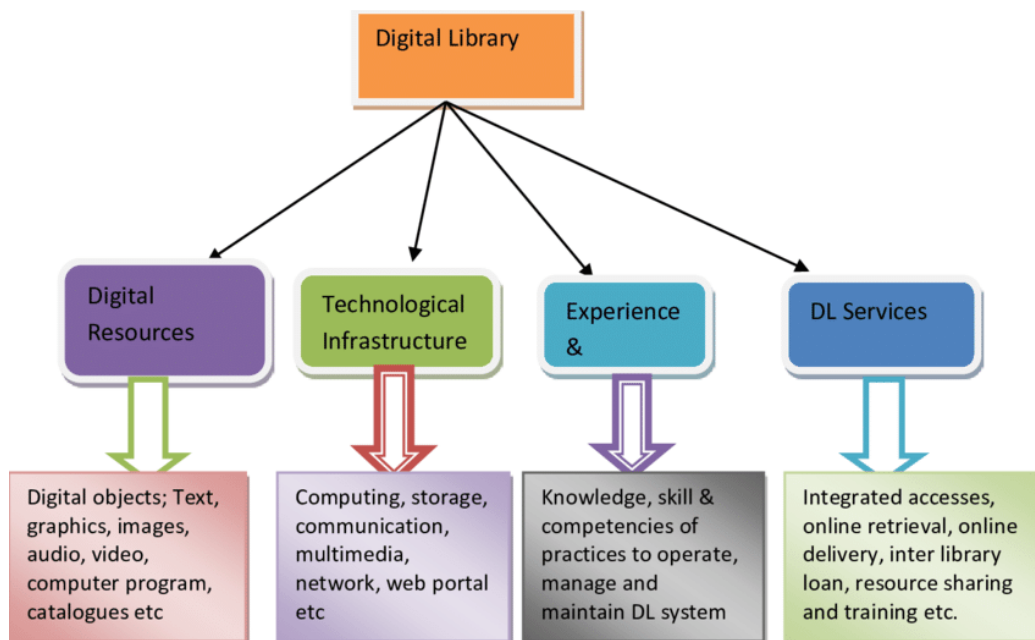
➢ Library Journal

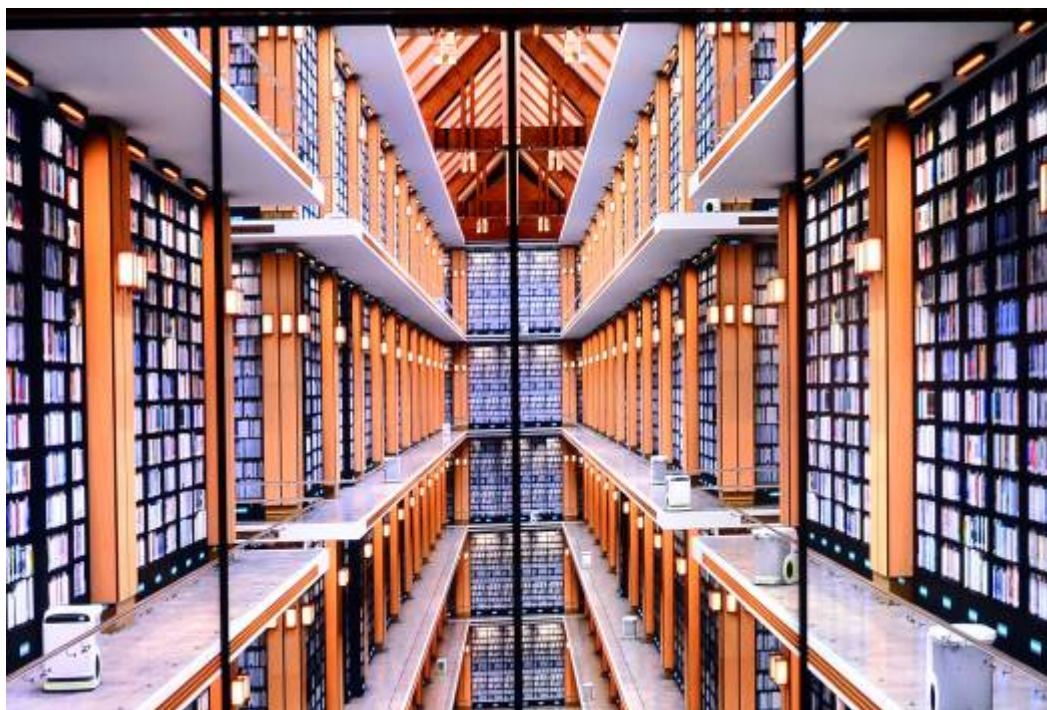➢ World Digital Libraries – An International Journal

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Figure 1 Evolution of libraries [1].

Figure 2 The basic structure of digital library [4].

Figure 3 A digital library at the National Library of Korea [7].

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For Chapter 15, add, dilib1-32 is NOT used
➢ History
➢ Traditional library
➢ Applications – students, p. 13
➢ Future
➢ Global

Add figure on traditional library. Get blogs from Googles (only that)