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ABSTRACT: During the past recent years, there has been tremendous development reaming the concept of digital libraries-a knowledge base that can be stored and retrieved through online networks. Digital libraries are the most complex form of information systems that support digital document preservation, distributed database management, hypertext, filtering, information retrieval, and selective dissemination of information. This has really overcome geographical barriers offering a wide range of academic, research, and cultural resources with multimedia effects that can be accessed around the world over the distributed networks. The paper examines the concept of Digital library, the technology that has enabled its emergence & architecture of the digital library system. It also highlights the digital library projects undertaken in USA, UK, and India. Here the authors explored the unique feature of digital library and possible challenges ahead for library and information professionals in the digital environment.

Keywords: UX, UI, web design, digital references

1. INTRODUCTION

Web design encompasses many different skills and disciplines in the production and maintenance of websites. The different areas of web design include web graphic design; user interface design (UI design); authoring, including standardized code and proprietary software; user experience design (UX design); and search engine optimization. Often many individuals will work in teams covering different aspects of the design process, although some designers will cover them all [1]. The term "web design" is normally used to describe the design process relating to the front-end (client side) design of a website including writing markup. Web design partially overlaps web engineering in the broader scope of web development. Web designers are expected to have an awareness of usability and if their role involves creating markup then they are also expected to be up to date with web accessibility guidelines.

In 1989, whilst working at CERN Tim Berners-Lee proposed to create a global hypertext project, which later became known as the World Wide Web. During 1991 to 1993 the World Wide Web was born. Text-only pages could be viewed using a simple line-mode browser [2]. In 1993 Marc Andreessen and Eric Bina, created the Mosaic browser. At the time there were multiple browsers, however the majority of them were Unix-based and naturally text heavy. There had been no integrated approach to graphic design elements such as images or sounds. The Mosaic browser broke this module.

The W3C was created in October 1994 to "lead the World Wide Web to its full potential by developing common protocols that promote its evolution and 3 ensure its interoperability.

This discouraged any one company from monopolizing a propriety browser and programming language, which could have altered the effect of the World Wide Web as a whole.

The W3C continues to set standards, which can today be seen with JavaScript and other languages.

In 1994 Andreessen formed Mosaic Communications Corp. that later became known as Netscape Communications, the Netscape 0.9 browser.

Netscape created its own HTML tags without regard to the traditional standards process. For example, Netscape 1.1 included tags for changing background colours and formatting text with tables on web pages. Throughout 1996 to 1999 the browser wars began, as Microsoft and Netscape fought for ultimate browser dominance. During this time there were many new technologies in the field, notably Cascading Style Sheets, JavaScript, and Dynamic HTML. On the whole, the browser competition did lead to many positive creations and helped web design evolve at a rapid pace [3].

In 1996, Microsoft released its first competitive browser, which was complete with its own features and HTML tags. It was also the first browser to support style sheets, which at the time was seen as an obscure authoring technique and is today an important aspect of web design [4].

The HTML markup for tables was originally intended for displaying tabular data. However, designers quickly realized the potential of using HTML tables for creating the complex, multi-column layouts that were otherwise not possible. At this time, as design and good aesthetics seemed to take precedence over good mark-up structure, and little attention was paid to semantics and web accessibility.

HTML sites were limited in their design options, even more so with earlier versions of HTML.

To create complex designs, many web 4 designers had to use complicated table structures or even use blank spaces .GIF images to stop empty table cells from collapsing. CSS was introduced in December 1996 by the W3C to support presentation and layout.

This allowed HTML code to be semantic rather than both semantic and presentational, and improved web accessibility, see table less web design. In 1996, Flash (originally known as Future Splash) was developed. At the time, the Flash content development tool was relatively simple compared to now, using basic layout and drawing tools,

A limited precursor to Action Script, and a timeline, but it enabled web designers to go beyond the point of HTML, animated GIFs and JavaScript. However, because Flash required a plug-in, many web developers avoided using it for fear of limiting their market share due to lack of compatibility. Instead, designers reverted to gif animations (if they didn't forego using motion graphics altogether) and JavaScript for widgets. But the benefits of Flash made it popular enough among specific target markets to eventually work its way to the vast majority of browsers, and powerful enough to be used to develop entire sites [5].

Further information: Browser wars First Browser War (2001 –1995).

In 1998, Netscape released Netscape Communicator code under an open-source license, enabling thousands of developers to participate in improving the software. However, these developers decided to start a standard for the web from scratch, which guided the development of the open-source browser and soon expanded to a complete application platform. [4]

The Web Standards Project was formed and promoted browser compliance with HTML and CSS standards. Programs like Acid1, Acid2, and Acid3 were created in order to test browsers for compliance with web standards. In 2000, Internet Explorer was released for Mac, which was the first browser that fully 5 supported HTML 4.01 and CSS 1. It was also the first browser to fully support the PNG image format.

By 2001, after a campaign by Microsoft to popularize Internet Explorer, Internet Explorer had reached 96% of web browser usage share, which signified the end of the first browsers wars as Internet Explorer had no real competition [6].

2. LITERATURE

Nowadays everybody is talking about Digital libraries. In this age of Information Technology, it is impossible to read a library journal or attend a library conference or even have a chat with other librarians without hearing the term 'digital library' or 'electronic library'. So, librarians must have an understanding of what a digital library is and how it is designed and implemented. The recent advances in Information technology and exponential growth of data in digital form have created an intensive interest in techniques to assist the users in locating desired data. Digital libraries are structured storage environment of digital data with a consistent format for index and content abstraction.

A digital library is a collection of information that is stored and accessed electronically. The purpose of a digital library is to provide a central location for accessing information on a particular topic [7]. Here two things are important. First, it is a collection of information. We can't confine a digital library to a physical structure or building as in the case of a traditional library. Second point is information is stored and accessed electronically. We can define a digital library, more comprehensively, as an electronic library in which a large number of geographically distributed users can access the contents of large and diverse repositories of electronic objects through computer networks. Electronic objects include multimedia object, networked text, images, sound, videos, maps etc. [7]

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 (LITE) system was the first digital library implemented by the US Air Force in 1967 [9]. 1970s witnessed the release of a number of software packages for computer-based storage, indexing and retrieval of documents in character-coded form.

E.g., STAIRS - IBM's storage and information retrieval system, BASIS - Battelle Automated Search Information System etc. During 1980s sophisticated information storage and retrieval systems came into light. Online hosts like DIALOG and STN started providing full text online journals although these were simple ASCII or text files without graphics and pictures.

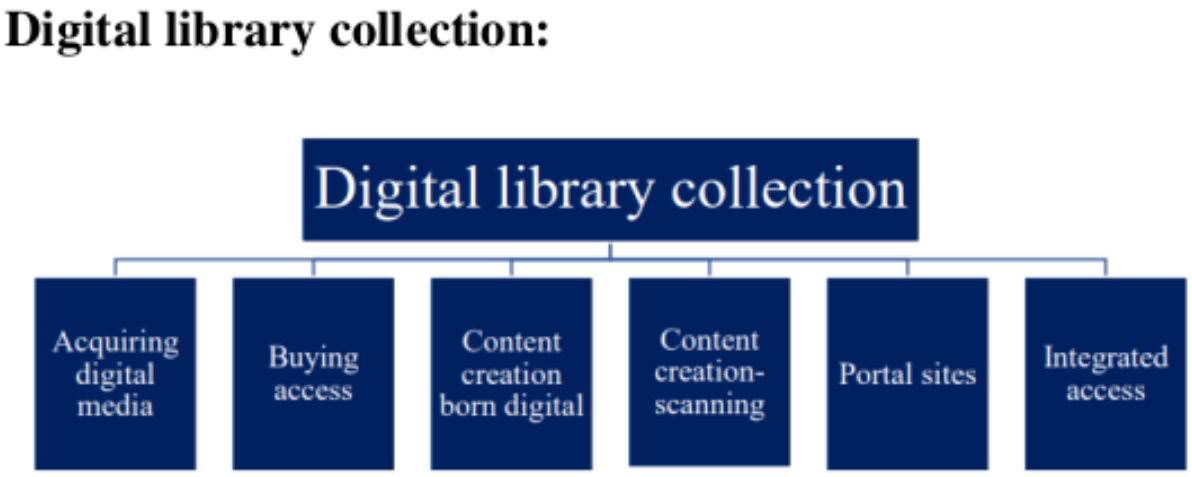
In the late 1980s and early 1990s several full text databases started appearing. E.g., IEEE/IEE Electronic Library (IEL), UMI's International Business Database, US Patents etc. 1990s witnessed a revolution in digital library system with the introduction of WWW, which offered a crucial advantage with the availability of ready-to-use and user-friendly graphical web browser for all prevalent platforms. Standard browsers like Netscape Navigator or Internet Explorer are being upgraded regularly for added functionality such as e-mail, support for JAVA, Active X controls etc. These browsers are freely available and easy to use. The Internet and associated technologies made it possible for digital libraries to include multimedia objects like text, image, audio, video 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.

3. DIGITAL COLLECTION BUILDING

According to Rusbridge [5] the resources for a digital library can be divided into four categories.

1. **Legacy resources**: this includes manuscripts, slides, and maps, audio and video records. These are largely non-digital resources. These are major resources of existing libraries. These resources will remain. Outside the scope of digital resources for many years.
2. **Transition resources**: these resources are primarily designed for another medium (print). These resources are converted into digital form for increased access and to reduce reliance on physical libraries.
3. **New digital resources**: these are explicitly created as digital. New digital resources are designed with a particular use in mind. These resources make use of Internet and web technologies.
4. **Future digital resources**: there is an increasingly wide range of digital resources from formally published electronic journals and electronic books through databases.

Digital collection can be built by adopting the following methods. Schematic representation of these methods is given below [6].



1. Acquiring Digital Media:

Today a number of commercial agencies supply digital media that contain a vast ocean of knowledge. We can procure these sources of information according to our requirement. E.g., McGraw-Hill Multimedia Encyclopedia of Science and Technology, Silver Platter System produces more than 250 information products on CD-ROM etc.

2. Buying Access:

Here we can subscribe to sources of digital information. A good number of technical journals are published either in electronic form only or they have their own electronic counterpart.

3. Content creation:

We can generate contents by our own. In academic institutions, many faculty members or Research Scholars publish articles

Regularly. We can request those authors to provide us with a soft copy of their articles and this information can be added to our collection. This is called born digital.

4. Content Creation by Scanning:

This is yet another method for building the collection. The existing sources of information may be in print media. These sources can be converted into digital media by scanning the materials. This is the most popular method of converting the existing sources of information. Scanned documents are stored like pictures or graphics and this should be converted as text documents. Many software's are available for this purpose.

5. Portal Site:

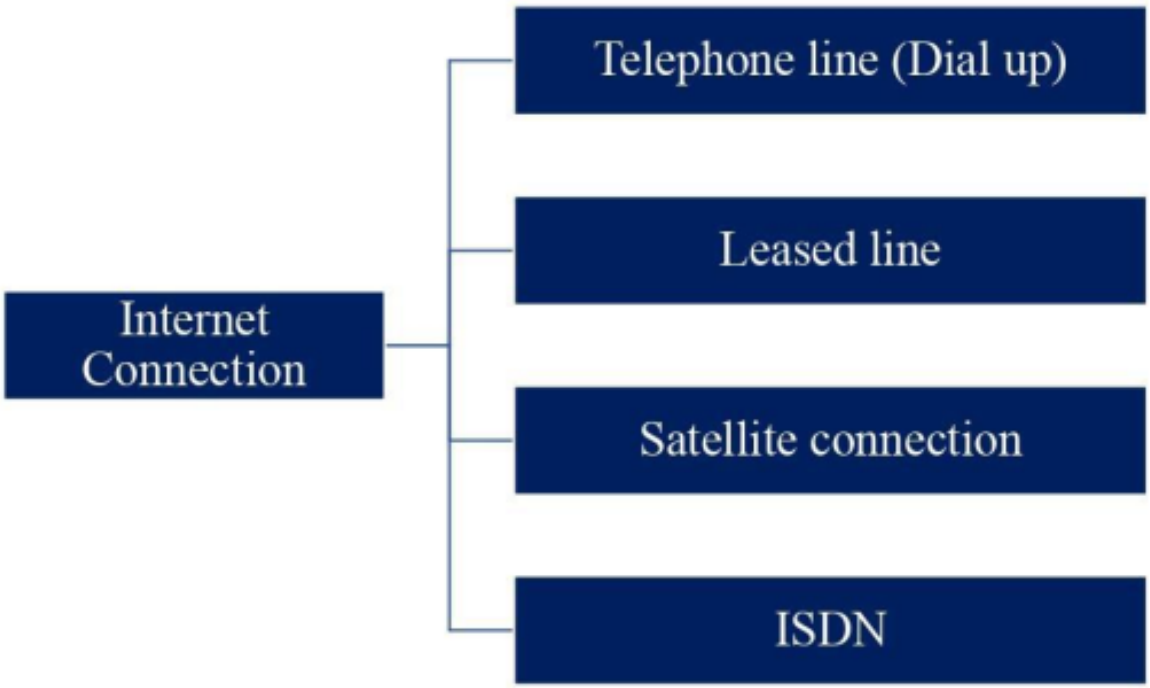
Portal means a gateway or entrance. We can include addresses of websites, which are of interest to our readers in our library so that users may come across these sites. If the user is interested to visit a site, he can directly click the address and he will be connected to that site. In this way our library can act as a portal site.

6. Integrated Access:

We can also develop digital collection by combining one or more methods discussed above.

4. HARDWARE AND SOFTWARE

Next important issue that needs to be addressed is hardware and software. We must provide enough storage location for digital information. Moreover, the server must have access to the Internet. System should provide enough hard drive space and should be capable of handling the expected access load. System must have a better connection to the Internet, which may be of the following types. Depending upon the type of connection, bandwidth and speed of connectivity varies [11].



5. CONCLUSIONS

Another important thing is the ever-changing technology. We must stay keeping up to date with the latest technologies and standards. In the current context is Suggest that instead of going to computing the existing libraries We can create a digital library along with the traditional library, because we You have to spend a huge amount to automate the existing libraries and even After spending that amount, what we get is just a bibliographical detail of the documents are available in a machine-readable format. While in the case of a digital library we can provide relevant information to the right users at the right time. In this way we can provide better and high-quality services to our visitors.

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CONFLICTS OF INTEREST

The author declares no conflict of interest.

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