Evolution and Development of E-Library - An Historical Study

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ABSTRACT

Digital library is the constantly growing and innovative information system; therefore, evaluation is of critical to ensure their correct development. This study has focused on the growth of the e-library by covering its historical portion globally. A "Digital Library" includes e-collections, services and infrastructure to support lifelong learning, research, scholarly communication as well as preservation and conservation of our recorded knowledge. It provides a huge platform for the end users with e-resources which create large impact for the library professions. This impact raised the library from tradition to digital. It generates the value-added services to its users.

KEYWORDS: *Library, digital library, e-library, online library, virtual library, ICT environment, technology innovation*

INTRODUCTION

Libraries are the system for the developing, organizing & preserving the information. The expansion of information technology, digital telecommunication technology, CD-ROMs, multimedia, computer networks, internet etc. have covered the way towards computerize publishing and changed the traditional libraries to digital library. DL is growing with the improvement of information, it is developed all over the world to accumulate, store and disseminate the information through electronic media. As compared to other developing country India is slow in the expansion of digital libraries because of many social, political and economic influences. The library community has used numerous different idioms as e-library, virtual library, library without walls and most recently digital library. Today digital library is considered as the World Wide Web.

Objectives:
1. To study the history and growth of the e-library
2. To study the development of the concept of e-library
3. To study the development of e-library globally
4. To study the development of the e-library in Asian country
5. To study the growth & impact of the e-library

Definition

1. It is a library that carries out the traditional library functions of collection, preservation, and access provision, while integration to an increasing degree to an increasing degree, digital media and remotely accessibly digital library services (Cleveland 1996).

2. Digital Library Federation offered the following definition in 1998: "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."

3. Another form of digital library is Virtual libraries (VL). It gives gateway to information which is accessible electronically universally. According to Gapen (1993) VL is "the concept of remote access to the contents and services of libraries and other information resources, combining onsite collection of current and heavily used materials in both print and electronic form with an electronic

network which provides access to, and delivery from external worldwide libraries and commercial
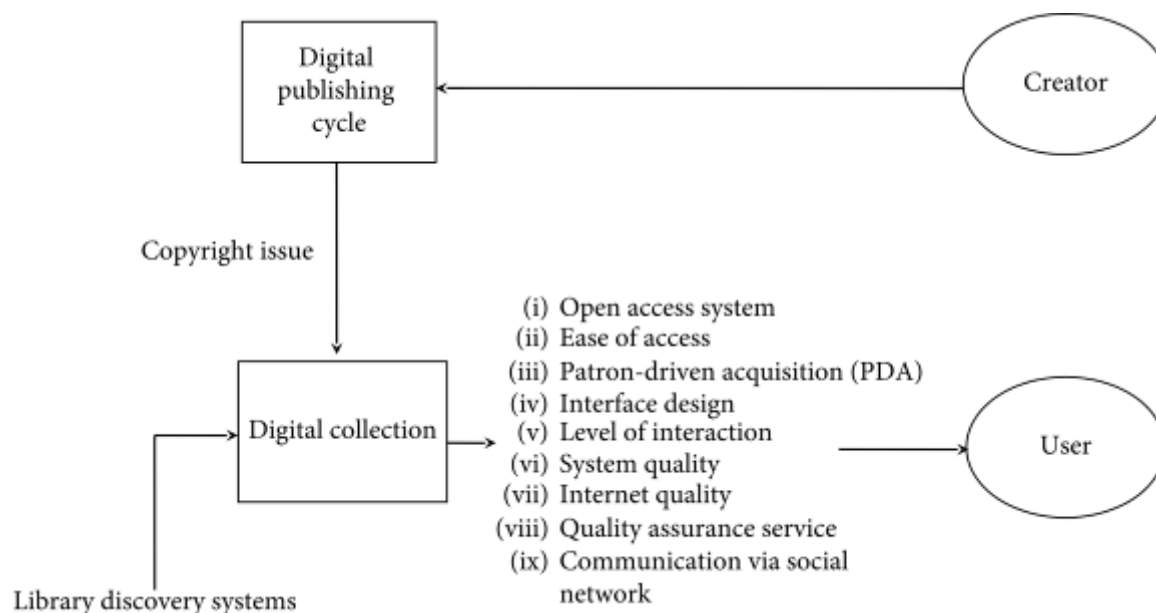
information and knowledge sources".

Figure 1: Design of Digital Library Services https://www.hindawi.com/journals/edri/2021/8883483/

History and Growth of E-Library:
The theory of first digital library was not clear until late 1980's. The beginning and expansion of digital libraries at this phase were driven by two main services. First electronic technological development, particularly in multimedia and networking, obtainable more efficient and sometime new ways in information processing and management. Second, societies required well share of vital information like library resources, scientific databases in academic and research. So, digital library schemes arose into actuality. It allows flexible learning and distant education accessing online. History of Digital libraries (DL) is the history of different type of information system and technologies that have been considered as "digital libraries". The progression of the DL it cannot follow the single track.

The history of the electronics it was 1890 Hertz done investigate the generation of electromagnetic waves. Sir J.C. Bose discovered the propagation of radio waves electromagnetic waves in 1894. These are the waves which are mediated through the space. Then in 1895 the existence of electrons by Lorentz postulated and then 1897 J.J Thomson theory experimentally verified the existence of electrons and then 1897 Braun developed the first electron tube and then in 1904 derived the Fleming's diode called vacuum tube. Then in 1906 De Forest developed the triode again a vacuum but since the vacuum to wear massive. They were switched by the transistor then in 1930 we derived the monochrome television and in 1950 the colour television arose to existence and in 1963 the Institute of Electrical and Electronics Engineers that was made and this is the Institute which is responsible for different standards. How did

we have the different standards for networking even the Wi-Fi connection, 4G, 5G all the standards protocols are defined by them Institute of Electrical and Electronics Engineers IEEE standard. This is just the summary of history of electronics.

DEVELOPMENTS OF DIGITAL LIBRARIES:
The growth of digital libraries is only three decades of age at the global scenario. Digital Libraries provide basic services for remote access and online search and retrieval. In fact, they make use of techniques to share bibliographic records and link difference remote system. DL is the outcome of information detonation. In 1970's libraries in the developed countries began to connect remote hosts to conduct on-line searches for commercial digital bibliographic databases. The invention of CD-ROM in 1980's was turning point in the digitization of information. 1990's makes an advanced move towards digitization due to networking, electronic document delivery service, on-line services, electronic journal etc.

Global Growth of the Digital Library:
Michael Stern Hart (born on 8 March 1943, in Tacoma, Washington) is the founder of the first project for digital library- Project Gutenberg, which makes electronic books freely available via the Internet (1971). He conceived the goal of making thousands of heavily consulted books publicly via computer. Without using scanners, he and his team had to type everything to make available. Now the team uses scanners to add new materials.

Henriette Avram developed the first metadata scheme using computer technology for the Library of Congress in the 1960s.

In the 1990s, when the internet was available to all, there was an explosion in the use of personal computers. The Internet Archive was established in 1996 with the aim of maintaining a historical record of the World Wide Web. Its aim is to preserve human knowledge and culture by making an Internet library for researchers, historians and scholars.

The Google Books Project was on track in October 2004 by Google to create a digital library of printed resources available to all over the Internet. Google Scanned in billions of books from libraries and universities from all over the world to create an online library that anyone can access online. Google books are available at the US, UK, Canada & Australia.

Digital library growth in India:
During the last five years India has seen several DL initiatives at the institutional, organizational & national levels. Apart from some are get successful and others are doing continuously progress.

Some of the Digital Libraries in India as below:
➢ Archives of Indian Labour' at the V.V. Giri Institute of Labour

➢ Indian Institute of Science NCSI

➢ Indian Institute of Management Kozhikode (IIM)

➢ Search Digital Library SDL at DRTC Bangalore

➢ Nalanda Digital library, National Institute of Technology (NIT) Calicut

➢ Vidyanidhi Project

➢ Million Book Universal Digital library Project - Carnegie Mellon - IISc - ERNET

➢ Indira Gandhi Centre for the ARTS (IGNCA Digital Library)

➢ INDEST, Ministry of HRD, GOI

➢ National Tuberculosis Institute (NTI), Bangalore

➢ Rajiv Gandhi University of Health Sciences, Karnataka (RGUHS)

➢ Traditional Knowledge Digital Library (TKDL)

➢ Indian School of) Business

➢ Indian Institute of Technology, Kharagpur

➢ Indian Institute of Technology, Mumbai

➢ IITMK Trivandrum

➢ National Chemical Laboratory (NCL, CSIR) – Digital Repository

➢ University of Hyderabad

Digital Library Projects in India:
The University of Hyderabad is the first organisation in India to initiate the DL Program along with Virtua. This was combined project between VTLS, SUN Microsystems and University of Hyderabad.

Nalanda (Network of Automated Library & Archives) is the outcome of the ongoing DL Initiative at National Institute of Technology Calicut Library, Kerala. Nalanda Project goals at a full-fledged DL at NITC to cater to the increasing demand for information resources from the Campus User Community as well as from Remote Users from rest of the Country, particularly from the Southern States of India.

ICICI Knowledge Park, Hyderabad is the excellent National R&D infrastructure of the highest standard, established together by Andhra Pradesh Government, ICICI Bank Limited and Department of Scientific and Industrial Research (DSIR), Government of India.

UNIVERSAL DIGITAL LIBRARY - a million books to the web, IISC, Bangalore. A project proposal for NSF support under the Indo-US Science and Technology Collaboration initiatives. Digital Library Initiative at TISS (DLI) unlike previous eras, ours is an age of lifelong learning.

Sir Dorabji Tata Memorial Library develops and provides important and specialised information resources and services to meet the rising information needs by; i) developing user-based resources, ii) organising information resources iii) providing human and technologically moderated access to information; and iv) aiding users to identify, locate, obtain and evaluate information.

Impact of Digital Libraries in 21ST Century:
With the new advancement of the technology in library there are lots of new things that can be connected to the improvement of library services area and management. Libraries have been started to use new features to serve the information & knowledge to their users. Earlier library was doing all kind of work manually and might not be interested in user. But can be observed today the library websites and vital growth of the information-based engine could be attached to website. RFID Technology helps to automated checkout & check-in system and electronic databases are among the good innovation in helping the library to provide for its users. ICT has transformed the concept of libraries. Libraries are slowly converting towards digitized. Another technology of cloud computing which is the system that using network of remote servers placed on the internet. So, information of the website is stored in the remote location. Library can stock their website,

information in the cloud system and the administration of the website can be done remotely anywhere at any time. Find the benefits of cloud computing in the image given below –

Figure 2 – Cloud computing for the library
https://www.researchgate.net/publication/328528 041_The_21st_Century_Library

Today it is possible to preserve the physical collection into electronic form which is easily readable by the electronic devices. It's called digitization and by doing this library has providing value added services to its users. The computer can store all kind of information or knowledge with high speed and provide it wherever need to the users. Now with the affordable cost we can digitize and store information into the form of high-quality graphics, texts, colour images, audio-visual materials etc. In this ICT era LIS professionals are given titles such as –

- ➢ Cyber Librarian
- ➢ Web Librarian
- ➢ Information Officer
- ➢ Information Facilitator
- ➢ Library Manager
- ➢ Knowledge Bankers
- ➢ Information Providers
- ➢ Institutional Repositories Developer
- ➢ Knowledge Manager/Professional
- ➢ Information Architecture
- ➢ Information Scientist/Specialist
- ➢ Information Consultant and many more.

Conclusion:
The e-libraries created the vast network of the information over the internet and proceed to distribution of resources to the end users such as books, research papers, audio-visual materials, magazines, journals etc. The future library will be small amount of space in which information is kept on a digital platform by which users will access the huge amount of the information resources globally. In future we cannot consider the library about ownership; it will be about only access and knowledge management. The role of the library professionals in the present scenario has made intellectual influences among different people due to

of large amount of information available on the internet and the use of ICTs for library activities and operations. Due to experiments and improvement of the new technology time to time digital libraries having new platform with information service interface which are creating the basic requirement is all users has to be expertise in using ICT. Instead of just doing cataloguing or shelving books on the shelves, Library professionals are the manager of knowledge.

References:

[1] Nagar Hemlata and Salve Meena. Digitization of Library in 21st Century-Digital Library. M. L. C. Govt. girls P. G. College, Khandwa, MP, INDIA 2 S. N. Govt. P. G. College, Khandwa, MP, INDIA (2013). www.isca.in

[2] Aruna Chanu Oinam & Purnima Thoidingjam. Impact of Digital Libraries on Information Dissemination (2019). International Research: Journal of Library & Information Science, Vol. 9 No. 1, Mar. 2019. https://irjlis.com/impact-of-digital-libraries-on-information-dissemination/

[3] Dr. Rajwant Kaur and Dr. AK Sharma. 21st Century Library Professionals in Dynamic Role in Digital Era. Library Progress (International). Vol. 38 No. 1, 2018. https://bpasjournals.com/admin/upload/dynami c2/13-Lib-67-2018%20Review%20P_129-139_.pdf

[4] Adnan Rizal Haris. THE 21st CENTURY LIBRARY. 21centurylibrary-oct2016.pdf

[5] Greenstein, Daniel I., Thorin, Suzanne Elizabeth. The Digital Library: A Biography. Digital Library Federation (2002) ISBN 1-933645-18-0. Accessed June 25, 2007 (2007)

[6] Khaidem Ranjita & Soubam Sophiarani. Towards Development of Digital Library in India: An Observation. Planner (2008). https://ir.inflibnet.ac.in/bitstream/1944/1150/1/ 35.pdf

[7] Agrey Kato, Michael Kisangiri, and Shubi Kaijage. A Review Development of Digital Library Resources at University Level (hindawi.com) Hindawi Education Research International. Volume 2021.

[8] Jie Suna & Bao-Zhong Yuan. Development and Characteristic of Digital Library as a Library. 2012 International Conference on Future Computer Supported Education. IERI Prodedia. https://www.researchgate.net/publication/26995 4368_Development_and_Characteristic_of_Dig ital_Library_as_a_Library_Branch

[9] M. M. Koganuramath and Mallikarjun Angadi. Design and Development of Digital Library: an initiative at TISS. http://eprints.rclis.org/4978/1/Digital-library-initiative.PDF

[10] Norbert Fuhr1, Giannis Tsakonas & others. Evaluation of Digital Libraries. International Journal on Digital Libraries. January 3, 2006. https://www.is.inf.uni-due.de/bib/pdf/ir/Fuhr_etal_06.pdf

[11] Momoh, Emmanuel Omeiza & Folorunso, Abubakar Lanre. The Evolving Roles of Libraries and Librarians in the 21st Century. Library Philosophy and Practice (e-journal). 2019. https://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=6243&context=libphilprac

[12] Leonardo Candela, Donatella Castelli, Pasquale Pagano. History, Evolution and Impact of Digital Libraries. 2014. https://tefkos.comminfo.rutgers.edu/Courses/e553/Articles/Articles%20Fall15/Candella%20History,_Evolution,_and_Impact_of_Digital_Libraries.pdf

[13] Sarah Katherine Howard & Adrian Mozejko. Considering the history of digital technologies in education. In M. Henderson & G. Romero (Eds.), Teaching and Digital Technologies: Big Issues and Critical Questions. Cambridge University Press 2015. (PDF) Considering the history of digital technologies in education (researchgate.net)

[14] Nagu N. Bansode & Manohar Ganapati Shinde. Impact of New Technologies in the Digital Libraries. Journal of Advancements in Library Sciences Volume 6, Issue 1. https://www.researchgate.net/publication/337209596_Impact_of_New_Technologies_in_the_Digital_Libraries