

## A STUDY ON LIBRARY AUTOMATION: TRENDS, CHALLENGES AND OPPORTUNITIES

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### ABSTRACT

This report examines chosen library automation in India's current trends, issues, and prospects. Utilizing convenience and purposeful sampling techniques, respectively. According to the survey, Dspace and Green Stone are the most widely used library automation platforms in digital libraries in India due to their interactive user interface, full text access and easy installation requirements. According to the survey results, valuable books, dissertations and dissertations for scientific and research purposes were digitized most frequently. The major problems facing digital libraries in India are lack of funding to support them,

incompatibility of digital library platforms with local languages and lack of digital library plans, policies and procedures. have been identified. Slow internet connections and insufficient digital collections made it difficult for users to access the digital library. The major prospects for digital libraries in India focus on document preservation for educational, cultural, historical and governmental purposes and broader document accessibility. It is therefore proposed that digital libraries in India should have a national digital library strategy, plans, standards and processes for digital library development in the country.

**Keywords:** Library Automation, Digitalization, Library Management, Database, Management

### 1. INTRODUCTION



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The gathering, handling, storing, and transmission of recorded material for reading, studying, and consultation is the responsibility of libraries and information centers. The library performs a

variety of tasks, which translates to library and information services, in order to achieve this purpose. Libraries and other information centers are expected to employ information and communication technologies (ICT) to offer people with information more quickly and thoroughly than they did in the past. The most obvious and necessary computerization of the library's daily operations is in this context. Otherwise, libraries risk losing significance in the digital world (Kumar, 2012).

## **1.1.BACKGROUND OF THE STUDY**

### **1.1.1. Library Automation in India**

In India, library computerization began its excursion somewhat recently of the twentieth hundred years. The primary utilization of PCs for libraries was in 1965 at the Indian Public Logical Documentation Place now the Public Organization of Science Correspondence and Data Assets in New Delhi (Sharma, 1993). During the 1980s, the UNESCO-supported Discs ISIS programming bundle was first utilized as a feature of the Public Data Framework for Science and Innovation project, the Guard Library The Executives Framework was created by DESIDOC in 1988, and the Catman programming was created by Indian Public Logical documentation community created and carried out in the Public Science Library (Rai and Kumar, 2011). Claim to fame and subject libraries subsidiary with different government Research and development establishments, for example, CSIR, ICMR, ICAR and DRDO followed after accordingly, prompting a development of library mechanization in subject libraries. Public libraries, for example, BHEL and SAIL ultimately joined the fad (Haravu, 1993). With the huge development of advanced education in designing, medication, training and sociologies, Indian scholarly libraries have embraced library mechanization all over. As per a report by the Relationship of Indian Colleges, (U. Otubelu Blessing Nnenna, 2015) there are in excess of 475 colleges in India starting around 2009 (Dongaonkar and Negi, 2009). In spite of the fact that India has as of late turned into a main country in the field of data innovation, the social and instructive areas have not been in the forefront Albeit the pursuit administrations market presently can't seem to get up to speed, library robotization in India is still in the beginning phases of improvement. Also, this in spite of the way that the area has developed firmly along with the data innovation industry. Tragically, the way of life industry overall has not superior its digital foundation, which might have sped up enhancements, subsidizing, and improvement. As of late, government spending on information framework has

gotten more consideration and scarcely any public drives have been sent off to make library consortia and organizations to empower interdisciplinary and shared admittance to data and to address every one of the monetary difficulties confronting India as a non-industrial nation. Established in 1988, the Data Library Organization is a cross country between college center for systems administration and asset sharing.

### **1.1.2. Training Library Professionals for Library Automation: Challenges**

Lack of money: Recruiting people with online technology experience to support and plan effective training programs for library professionals is hampered by a lack of resources. The budget is needed for conferences, presentations, structured seminars and workshops aimed at educating library professionals about library automation. According to Ezeani (2009), the majority of African universities find it difficult to raise funds for their staff members' domestic training, let alone international training (G.T, 2017).

Low comfort when using technology: Ani, Atseye and Esin (2005) argue that some professional librarians lack ICT skills, which makes them less technically skilled and difficult to train. In a similar line, Ashcroft and Watts (2004) noted that Nigeria suffers from a severe lack of people who are knowledgeable about information and web technologies and can establish and administer technology networks.

Lack of awareness of current ICT equipment: The training staff responsible for developing training plans themselves suffers from a lack of understanding of current library automation technologies, including: B. Hardware and Software Issues. According to Ameen (2006), the ongoing development and evolution of the ICT industry complicates the responsibility for training library staff (Sileshi, 2014). The worst part, according to Haider (2004), is that most training employees lack creativity, imagination, and vision when considering and making plans for the future of the library staff.

Insufficient training resources: Ineffective training of library professionals for library automation in India is further hampered by a lack of training facilities with suitable information technology equipment.

### **1.1.3. Significance of The Study**

Library automation involves careful planning, selection of hardware, software, personnel and budget. Even though, library automation gathered momentum during 1990's, the status of library automation is still progressing and in rural area it is at infancy level only. The automation of Arts and Science college libraries helps the user to fulfill their information needs as well as helps to facilitate information sharing among the libraries. Due to lack of sufficient funds, lack of awareness, techno-phobia, negative attitude of the professionals as well as management, lack of quality software at affordable cost, lack of uniformity and so on, these issues and challenges are more among the library and library profession towards automation (Kumbhar, 2015). Therefore, the investigator felt the need to fill this gap and motivated to undertake a study on issues and challenges of library automation among the Arts and Science college libraries affiliated to State and Private Universities in Maharashtra State.

#### **1.1.4. OBJECTIVES**

The main research goal was to examine the present trends, difficulties, and opportunities facing a few Indian library automation.

## **2. REVIEW OF LITERATURE**

Bachhav, Nitin B (2016) looks at the situation with library computerization and the key restrictions libraries face while robotizing. The investigation discovered that school libraries are still in their earliest stages with regards to computerization, and all libraries use on-premises business programming for robotization. The review finishes up with proposals that would improve and guarantee successful and proficient utilization of ICT (Data and Correspondence Innovation), subsequently empowering libraries to all the more likely serve their clients.

Ansari, Mehtab et al (2017) featured the status and use of a mechanized classifying framework in the Focal College Libraries of North India. The information were gathered utilizing surveys. Interview and observational strategies were additionally used to carry objectivity to the current review. The outcomes show that different headway has been made towards the execution of a listing framework

Selvaganapathi and Surianarayanan (2013) led the overview at the resources of the Dr. Sivanthi Aditanar School of Designing in Tiruchendur, Tamil Nadu and India. Resources having a place with this school find different enhancements required as far as mechanized library assets, network

administrations and furthermore regarding library offices. This study assesses how library computerization and workforce organizing offices can be utilized to work on the effectiveness and efficiency of scholastic exercises

I H Jahagirdar (2012) Portray library programming choice as perhaps of the main apparatus in carrying out library robotization. The product comprises of the multitude of capabilities that are viewed as the cerebrums of each bundle; LMS support the general requirements of the library like acquisitions, inventoriing and course.

Krishnamurthy and Meeramani (2012) contended that library robotization, similar to advancements in data innovation, has changed the scholastic library in late many years and hypothesizes on additional progressions to come, uncovering the central concerns, this article covering numerous significant issues, for example, open source innovation, Governmental issues examined, and different cravings.

### **3. METHODOLOGY**

#### **3.1. Research Method**

A quantitative cross-sectional study design was used to collect the necessary data to meet the study objectives.

#### **3.2. Population**

The participants in this study were staff members and patrons of digital libraries in India that were specifically chosen. The universities that were chosen for the digital libraries included Addis Abeba University (AAU), University of Gondar (UoG), Bahir Dar University (BDU), Jimma University (JU), Haromaya University (HRU), Adama Science & Technology University (ASTU), Hawassa University (HU), Indian National Archive and Library Agency (ENALA), and United Nations Economic Commission of Africa (UNECA).

#### **3.3. Sampling and Data Collection Methods**

The primary data were not used in the current investigation; instead, secondary data were used. The secondary data was gathered from a variety of websites, journals, articles, newspapers, etc.

#### **3.4. Data Analysis Methods**

The application software Statistical Package for Social Sciences (SPSS) version 20 was used to evaluate the collected data (Krishnamurthy, 2012). In relation to the specific objectives we considered, this study used descriptive data analysis techniques, specifically tables, charts, graphs and other easy-to-understand reporting formats, percentages and frequency distributions.

## 4. RESULT AND DISCUSSION

### 4.1. Digital Library Platforms

Digital library management software provides a simple, customizable architecture for building an online digital library (C, 2014). With the help of these institutions/organizations, researchers can release their research results, manuscripts, or other digital media for digital object preservation and worldwide distribution.

According to Madalli, D Space is collaboration between MIT Libraries and HP Labs. It is a digital asset management system that enables organizations such as libraries to collect, archive, index, and share the scholarly and intellectual efforts of their communities. It was created by MIT using a variety of technologies, and its main purpose is to collect bibliographic data regarding books, articles, theses, and dissertations. D Space can be modified to meet various community needs. There is built-in system interoperability, and the metadata format complies with global standards. D Space is an open source technology platform that can be modified to extend its functionality.

Regarding the types of digital library platforms used in libraries, Table 1 below shows that the D space and Green Stone platforms are used in several different digital libraries. However, most digital libraries in some universities use his D space, an open source platform. UNECA (United Nations Economic Commission for Africa) and the African Union digital library use digital library platforms E Print and Be press as backups.

Table: 1 Platforms for digital libraries of various types

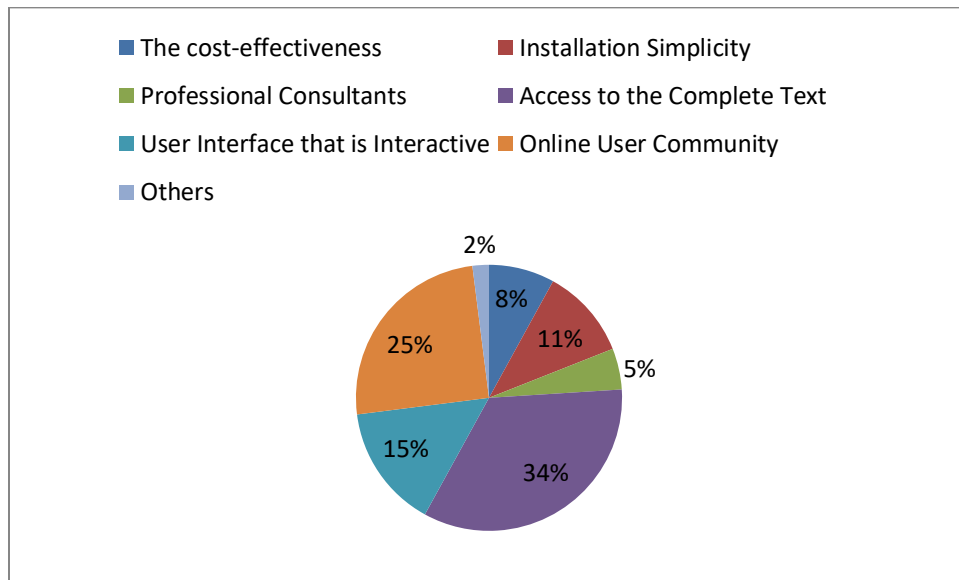
<b>Platforms</b>	<b>Institutions</b>
DSpace	AAU, JU, BDU, UOG, UNECA, AU
Greenstone	AAU, HU, ENALE, ASTU, HRU
Bepress	AU
Eprint	UNECA

These services also provide the software's stated popularity indications, which aid customers in choosing the best applicant (Oghenovo Kelvin Onoriode, 2012). According to the study, open source licenses, feature modules, stable releases, high levels of developer-user collaboration, interactive user interfaces, detailed and up-to-date documentation, and easy installation and maintenance of the software are the selection criteria for open is source library software.

According to the results shown in Figure 1 below, interactive user interface was the criterion that 15% of respondents indicated when choosing the aforementioned digital library platform, followed by complete text accessibility to the software at 11%, and ease of installation and maintenance at 34%.

**Table: 2 interactive user interfaces**

The cost-effectiveness	8%
Installation Simplicity	11%
Professional Consultants	5%
Access to the Complete Text	34%
User Interface that is Interactive	15%
Online User Community	25%
Others	2%



**Fig.1. selection standards for the software platform for digital libraries**



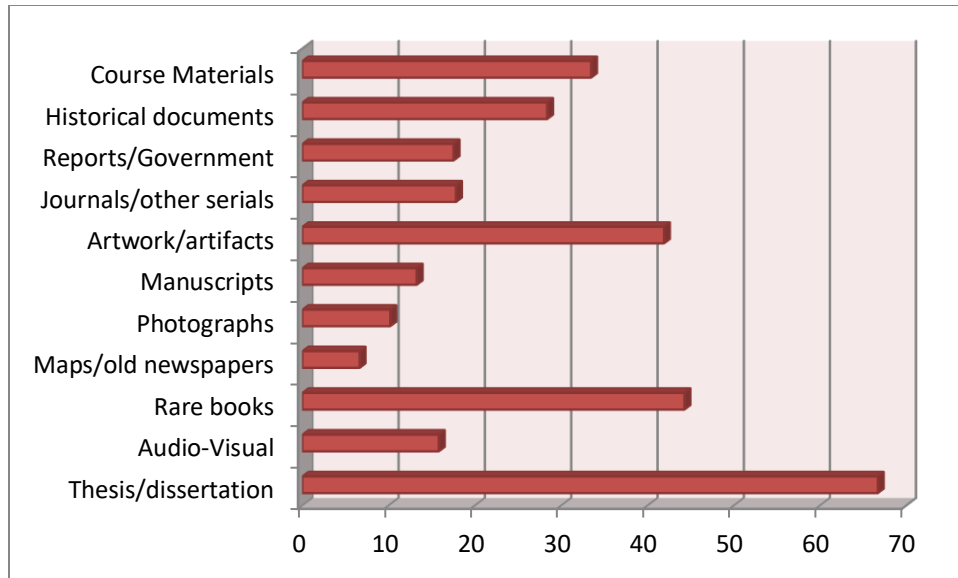
#### 4.2.Digital Materials Types

According to the results shown in Figure 2 below, theses and dissertations were most frequently digitized, followed by rare books (44.27%), journals and other series (17.80%), course materials (28.36%), historical documents/archives (17.52%), Reports/Government Publications (15.81%), Audiovisual Media (13.25%), Manuscripts (10.19%), Photographs (41.9%), Artworks/Artifacts (41.9%), maps/old newspapers (6.64), and maps/old newspapers.

A study found that scientific institutions attach great importance to digital institutional resources such as articles, manuscripts, special monographs, research papers, and photographs. A key force shaping the collective future of libraries as informants to academia is the evolution of collaboration, automation, and digital libraries to improve the delivery of services that support teaching and research (Lakshmisankari, 2017).

**Table: 3 Types of digitized materials**

Thesis/dissertation	66.72
Audio-Visual	15.81
Rare books	44.27
Maps/old newspapers	6.64
Photographs	10.19
Manuscripts	13.25
Artwork/artifacts	41.9
Journals/other serials	17.80
Reports/Government	17.52
Historical documents	28.36
Course Materials	33.45



**Figure 2: Types of digitized materials**

The following factors were taken into consideration when choosing which items to digitise: access, support for preservation efforts, collection development, institutional benefits, research, and education.

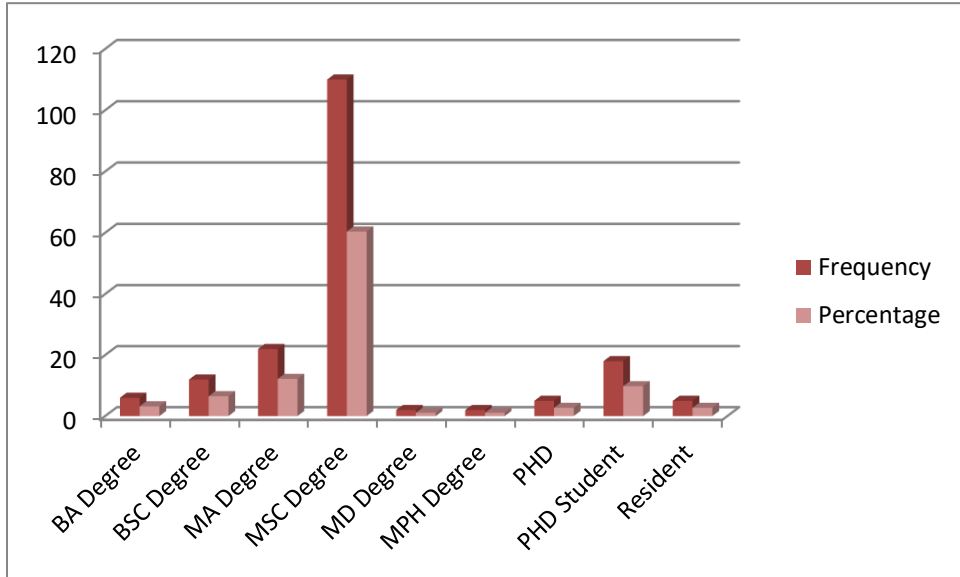
### 4.3. Response Rate of Digital Library Users

The frequency and proportion of responders by educational status are displayed in table 4 below. According to the results, 18 (9.8%) respondents were PhD students, 22 (12.2%) users had master's degrees in art, and 110 (60.4%) respondents were master's science students. The replies show that postgraduate students, academics, researchers, and undergraduate students are among the users of internet services and resources.

**Table: 4 Response rates for users of digital libraries by educational level**

Education status	Frequency	Percentage
BA Degree	6	3.2
BSC Degree	12	6.5
MA Degree	22	12.2
MSC Degree	110	60.4
MD Degree	2	1.09

<b>MPH Degree</b>	2	1.09
<b>PHD</b>	5	2.7
<b>PHD Student</b>	18	9.8
<b>Resident</b>	5	2.7
<b>Total</b>	182	100

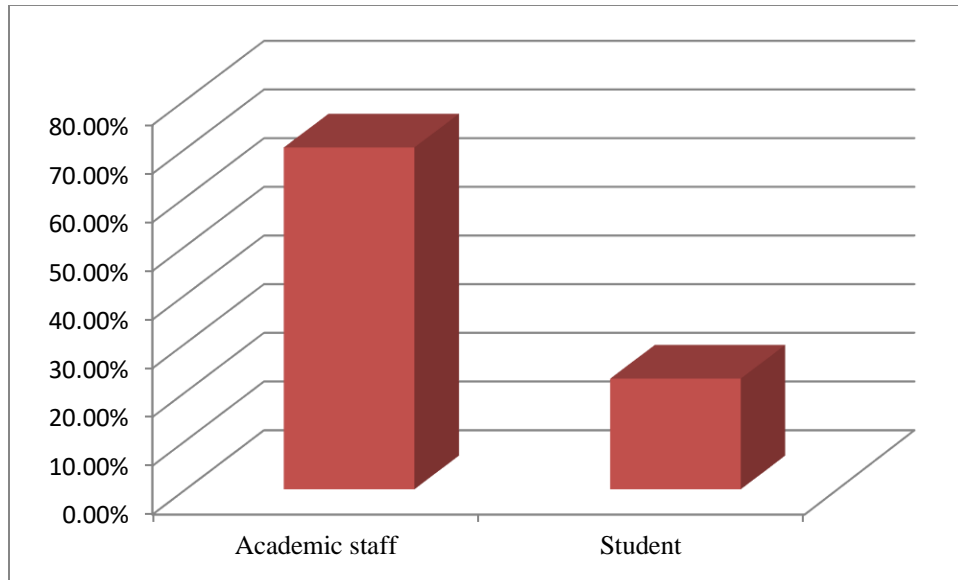


**Fig.3. Respondents by their educational status**

Figure 4 displays the frequency and proportion of responders per employment category. According to the results, students made up the majority of responders (70.2%), followed by academic staff (22.7%).

**Table: 5 Respondents from users of digital libraries by employment category: frequency**

	Percentage
<b>Academic staff</b>	70.2%
<b>Student</b>	22.7%



**Fig.4. respondents by job category**

#### 4.4.Problems Accessing Digital Libraries

According to the results in Table 6 below, 87 respondents (47.8%) indicated that a slow internet connection was a problem, followed by 25 respondents (13.7%), who indicated that the quality of digital collections was low, and 54 respondents (29.6%), who indicated that having trouble accessing links to digital libraries was a problem. The remaining 16 (8.79%) respondents ran into further issues when trying to access the digital library.

**Table: 6 types of issues that people encounter when accessing digital libraries**

types of issues	Frequency	Percentage
<b>inadequate internet connection speed</b>	87	47.8
<b>Collections' digital quality is poor</b>	25	13.7
<b>Links do not function</b>	54	29.6
<b>Others</b>	16	8.79
<b>Total</b>	182	100

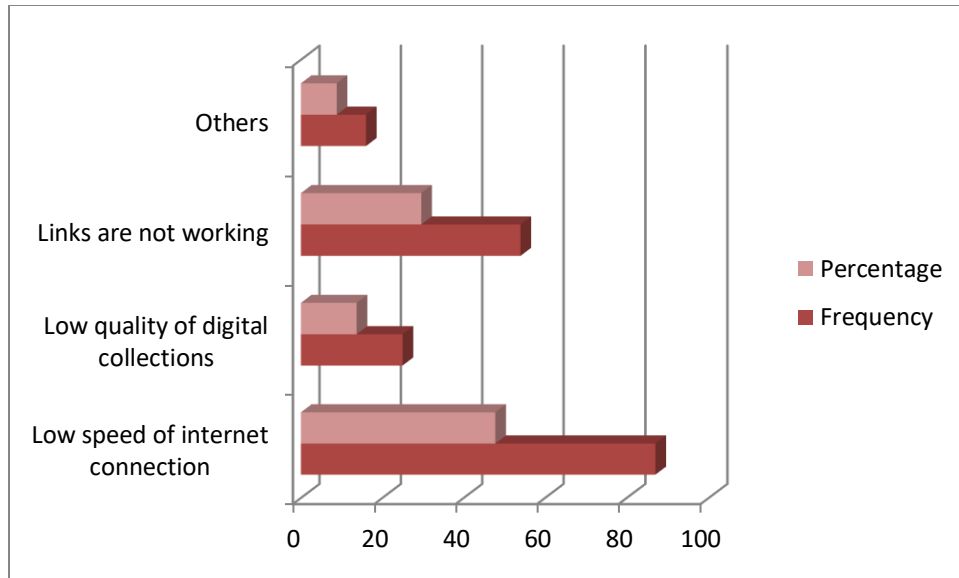


Fig.5. challenges that users may experience when browsing digital libraries

#### 4.5. Library Automation Challenges

Concerns of Employees and Users of KU's Digital Library. AVU centers have been found to be caused by many wide-ranging variables, including: Challenges with management practices, infrastructure-related elements, user attitudes about digitization, connectivity, and dependability, as well as issues with system design and training

One of the primary research goals in this study was to identify the difficulties faced by digital libraries in India. The responders were therefore asked to list the various difficulties they had encountered.

According to the results, the majority of respondents said the biggest challenges facing digital libraries are the lack of copyright and intellectual property policies, lack of funding to support digital libraries, and the lack of digital library platforms and local language incompatibility, and lack of language. Description of digital library plans, policies and procedures.

#### 4.6. Library Automation Opportunities

According to the results, the majority of respondents found that document preservation (educational, cultural, historical, government, and maps) and wide document accessibility (dissertations, laboratory manuals, dissertations, lecture notes, government policies, and cultural heritage) were the most important opportunities of digital libraries, followed by improving e-

learning systems, enhancing institutional collaborations and creating opportunities for authors, researchers and researchers.

## 5. CONCLUSION

The results showed that the study's focused on current trends, problems, and prospects for digital libraries in India.

Some digital libraries in India use Dspace and Green Stone digital library platforms. Dspace continues to be the most widely used open source platform for most digital libraries in some Indian universities. For the majority of digital libraries selected in India, interactive user interface, accessibility to full-text, and ease of installation and maintenance of the platform were decisive factors in choosing a digital library platform.

The kind of resources being digitized and the selection criteria that were used to make those decisions was another recent development in certain digital libraries. According to this, the previously digitized holdings of a given digital library, in descending order, are dissertations, rare printed publications, journals and other series of publications, and study materials. The main guiding factors for the types of resources to be digitized in a given digital library in India were academic and research purposes, broad access to materials, high user demand and preservation of materials.

Donations, researchers/instructors, the internet, and purchases were the main sources for the digitized collections. The Ministry of Education, as well as state and private groups, provided support for digital library initiatives. The majority of the chosen digital libraries collaborated on digital library projects with university libraries and INASP ().

Despite many difficulties encountered, the main problems with digital libraries are the lack of copyrights and copyright policies, the lack of funding to support digital libraries, and the lack of interaction between digital library software and local languages. Incompatibility and lack of a digital library plan. Library of policies and procedures.

In India, the key potential for digital libraries were document preservation, widespread document accessibility, support for e-learning systems, and improved institutional collaboration.

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