

## MOVING BEYOND LIBRARY AUTOMATION: ROLE OF DIGITIZATION IN ACADEMIC LIBRARY

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### ABSTRACT

*Modern academic library is a conglomeration of printed books and journals as well as electronic resources where both forms of the documents can be stored, retrieved and delivered as and when required. The automated library system is capable of handling large volumes of documents and of providing timely and effective information services to faculty, research scholars and students in achieving their goals. Digitization is an electronic process of converging information from a print format to a digital format. The process of digitization involves the scanning of the print material into digital. Computer based information system for acquiring, storing, organizing, searching, distributing and displaying digital materials for end user access; not necessarily network-based but designed and constructed so as to be capable of attaching or being attached to a network. Purpose of Digital Library, Vision of Digital Library, Managing Digital Library, Digital Preservation, Copyright and Licensing.*

**Keywords:** Library Automation, Digitization, Digital Library, Digital Preservation, Copyright and Licensing

### INTRODUCTION:

Modern academic library is a conglomeration of printed books and journals as well as electronic resources where both forms of the documents can be stored, retrieved and delivered as and when required. The diversified hunt for information and knowledge, the innumerable books and other printed materials together with endless and ever increasing scholarly e-resources made the traditional management of academic library a difficult proposition. In order to implement a new paradigm for excellence in the metamorphosed patterns, automation of operation and services of library is very much essential

The provisions of library and information services have dramatically changed over the last couple of years. Now access of information is no longer restricted to what is physically available in particular library. Information is accessible from a wide variety of globally distributed

commercial repositories such as electronic publishers and aggregators with access charge. However, it is also accessible from open access journals, open access archives, few websites and institutional repositories free of charge. Now libraries can enable worldwide access to a never-ending supply of distributed information and knowledge in electronic form that is constantly available, easily updated and convenient to use. It not only preserves and conserves materials but also increases the customer base by making older and rarer or more heavily used documents available to a much wider audience.

### **LIBRARY AUTOMATION:**

The main purpose of library automation is to improve the efficiency of library and to render optimum user service. The automated library system is capable of handling large volumes of documents and of providing timely and effective information services to faculty, research scholars and students in achieving their goals. The transition from paper-based books and journals to scholarly e-resources has compelled to use latest technologies in academic libraries. Use of technologies is not only helpful in restricting the effect of information explosion but also it over comes many problems associated with mass digitization in recent years. To achieve full advantage of technologies all housekeeping operations of a library need to be computerized along with conversion of existing bibliographic databases to computer-readable form.

Library automation system is a software package or set of computer program designed to automate operations and services of a library. Such system primarily hosts a user-friendly interface for browsing library database online (OPAC), replacing the old card catalogue of the library. Most of the integrated library automation systems are now providing web enabled online catalogue (WebOPAC). Other operations and services which are automated include borrowing, receiving them back and tracking interlibrary-loan of books, etc. procurement of books, classifying, cataloguing and indexing of books, acquisition of journals loose issue and bound volume management and generation all types of reports and statistics of library membership, operation and services.

Realizing the significant changes in information seeking behavior of the users by rapidly expanding use of e-resources, most of the modern libraries have promptly responded by converting their print catalogue into OPAC. Automation of library catalogue helps in speedy processing of books and other resources and saves time involved in editing, updating and rearranging large amount of information. It brings ease in searching and flexibility in configuring search and result screens (choen,2003). As a consequence of computerization the website of the library with fast Internet connection is created. This enables users to have seamless access to vital information resources in the web and searching library database through WebOPAC from any computer which is connected to the Internet.

### **Digitization:**

Print media has still not solved accurate and faster delivery of information, irrespective of time, space and cost factors involved in .The future of the library would be marked culmination of techniques/technologies which would act as a new state-of –the- art library .It is our moral duty to note down the wordings of our Ex. president of India Hon’ble Dr. A.P.J.Abdul Kalam in his recent visit of JNV University in Jodhpur . He asked all publishers of India to get ready to bring out their publications / books in CD formats or digital books before 2020 to make India succeed in the gamut of world digital knowledge.<sup>1</sup>

Digitization is an electronic process of converging information from a print format to a digital format. The process of digitization involves the scanning of the print material into digital. There are numerous scanners available like flat-bed scanner, hand scanner etc. The scanner type is dependent upon the size of the document needed to be scanned. The necessary software is available with the firm of the scanner. When a document is placed on the scanner the image of the material is taken into the computer. To transform the scanned images into text format, Optical Character Recognition (OCR) technology is needed. Optical Character Recognition technology is the technology, which converts image characters into machine language. The task of the system is to assign the respective ASCII values of the character.

**Digital Library:**

Computer based information system for acquiring, storing, organizing, searching, distributing and displaying digital materials for end user access; not necessarily network-based but designed and constructed so as to be capable of attaching or being attached to a network. Digital libraries are electronic libraries in which number of geographically distributed users can access the contents of large and diverse repositories of electronic objects. Virtual library is an organized, evaluated and a noted set of links to information on the Internet that enables a user in finding relevant information wherever it is resided on the web.

**Purpose of Digital Library:**

Present library is facing many problems that is – allocation of budget, lack of staff especially skilled staff, non availability of documents, no. of copies, library security in open access system, limited library hours, life of print materials etc. With advancement of technology, the libraries are moving towards digital resources, which are found to be less expensive and more helpful for easy access. These are helpful especially to distant learners who have limited time to access the libraries from outside by dial up access by the commonly available electronic mode of access to resources mainly through CD-ROMs, OPACs and Internet etc. Therefore print media is slightly getting less preference. In developed countries 60% to 70% information is available in the digital formats, where as in developing countries like India, this availability is 2.5% so there is a great scope of transformation to digital libraries here.<sup>2</sup> Moreover, as of now, these are affordable and economical.

**Vision of Digital Library:**

- ❖ If the future libraries are to survive, they have to be switched over to electronic mode because the information is fast changing and mostly resources are born digitally. At the same time, digitization of libraries is not an easy task. It requires large amount of funds and skilled manpower including the staff with a positive attitude, rich experience and expertise.<sup>3</sup>
- ❖ The library is a member of the National Digital Library consortium and through it the Global Digital Library is worked.
- ❖ The print material will be available in multimedia form.
- ❖ All services are accessible from home, workplace and public libraries.
- ❖ Information access / study time per student is 70% electronic, 30% print
- ❖ Library space is 70% networked study space and 30% book stock.

The mission is to create a Universal Library, which will foster creativity and free access to all human knowledge. As a first step in realizing this mission, it is proposed to create the Universal Library with a free-to-read, searchable collection of one million books, primarily in the English

Language, available to everyone over the Internet. Within 10 years, it may grow to 10 Million books. The result will be a unique platform of resources and will be accessible to anyone in the world 24x7 hrs, without regard to nationality or socioeconomic background.

#### Managing Digital Library:

Digitization is done not only for preservation or archival purposes but also, rather more, on account of the other advantages and uses of the same. A digitized work can easily be transmitted to members of a library through the Net. Transmission of images and text through the Net is a communication to the public and requires the permission of the copyright owner, if the work is in the copyright regime. Libraries cannot keep away from technological progress. Technology has to be harnessed for better servicing by the libraries. The library community in India needs to play a more active role than hitherto in the area of copyright legislation in the context of digital libraries as they only would be able to guide the policy and law that makers in the matter of making balanced provisions in the law that will facilitate libraries performing their basic objectives in the new technological era.

#### Future of Digital Library:

Large scale digitization projects are underway at Google, the Million Book Project, and Internet Archive. With continued improvements in book handling and presentation technologies such as optical character recognition and ebooks, and development of alternative depositories and business models, digital libraries are rapidly growing in popularity. Just as libraries have ventured into audio and video collections, so have digital libraries such as the Internet Archive.

According to Larry Lannom, Director of Information Management Technology at the nonprofit Corporation should be for National Research Initiatives, "all the problems associated with digital libraries are wrapped up in archiving." He goes on to state, "If in 100 years people can still read your article, we'll have solved the problem." Daniel Akst, author of *The Webster Chronicle*, proposes that "the future of libraries and of information is digital." Peter Lyman and Hal Varian, information scientists at the University of California, Berkeley, estimate that "the world's total yearly production of print, film, optical, and magnetic content would require roughly 1.5 billion gigabytes of storage." Therefore, they believe that "soon it will be technologically possible for an average person to access virtually all recorded information."<sup>5</sup>

#### Digital Library Software:

There are a number of software packages for use in general digital libraries, for notable ones see Digital library software. Institutional repository software, which focuses primarily on ingest, preservation and access of locally produced documents, particularly locally produced academic outputs, can be found in Institutional repository software.

#### Digitization:

In the past few years, procedures for digitizing books at high speed and comparatively low cost have improved considerably with the result that it is now possible to digitize millions of books per year.<sup>7</sup>

#### Advantages:

The advantages of digital libraries as a means of easily and rapidly accessing books, archives and images of various types are now widely recognized by commercial interests and public bodies' alike.<sup>8</sup>

- No physical boundary
- Round the clock availability
- Multiple accesses.
- Information retrieval.
- Preservation and conservation
- Space
- Added value.
- Easily accessible.

**DIGITAL PRESERVATION:**

Digital preservation aims to ensure that digital media and information systems are still interpretable into the indefinite future. Each necessary component of this must be migrated, preserved or emulated.<sup>9</sup> Typically lower levels of systems (floppy disks for example) are emulated, bit-streams (the actual files stored in the disks) are preserved and operating systems are emulated as a virtual machine. Only where the meaning and content of digital media and information systems are well understood is migration possible, as is the case for office documents.<sup>9,10,11</sup> However, at least one organization, the WiderNet Project, has created an offline digital library, the eGranary, by reproducing materials on a 4 TB hard drive. Instead of a bit-stream environment, the digital library contains a built-in proxy server and search engine so the digital materials can be accessed using an Internet browser.<sup>12</sup> Also, the materials are not preserved for the future. The eGranary is intended for use in places or situations where Internet connectivity is very slow, non-existent, unreliable, unsuitable or too expensive.

**COPYRIGHT AND LICENSING:**

Digital libraries are hampered by copyright law because, unlike with traditional libraries, digital libraries do not have access to works from every time period. The republication of material on the web by libraries may require permission from rights holders, and there is a conflict of interest between libraries and the publishers who may wish to create online versions of their acquired content for commercial purposes. In the year 2010 it was estimated that twenty-three percent of books in existence were created before 1923 and thus out of copyright. Of those printed after this date, only five percent were still in print as of 2010. Thus, approximately seventy-two percent of books were not available to the public.<sup>13</sup>

The Fair Use Provisions (17 USC § 107) under the Copyright Act of 1976 provide specific guidelines under which circumstances libraries are allowed to copy digital resources. Four factors that constitute fair use are "Purpose of the use, Nature of the work, Amount or substantiality used and Market impact."<sup>14</sup>

Some digital libraries acquire a license to lend their resources. This may involve the restriction of lending out only one copy at a time for each license, and applying a system of digital rights management for this purpose (see also above).

The Digital Millennium Copyright Act of 1998 was an act created in the United States to attempt to deal with the introduction of digital works. This Act incorporates two treaties from the year 1996. It criminalizes the attempt to circumvent measures which limit access to copyrighted materials. It also criminalizes the act of attempting to circumvent access control.<sup>15</sup> This act

provides an exemption for nonprofit libraries and archives which allows up to three copies to be made, one of which may be digital. This may not be made public or distributed on the web, however. Further, it allows libraries and archives to copy a work if its format becomes obsolete.<sup>16</sup>

Copyright issues persist. As such, proposals have been put forward suggesting that digital libraries be exempt from copyright law. Although this would be very beneficial to the public, it may have a negative economic effect and authors may be less inclined to create new works.

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