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Library Automation and Resource Sharing in Higher Education Institutions

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Abstract-- Library automation and resource sharing have become essential pillars of modern higher education institutions in India. With the rapid advancement of information and communication technology (ICT), academic libraries are going through a major transformation. Traditional libraries that were dependent on manual processes are now shifting towards automated systems that can handle large volumes of information more efficiently and accurately. This paper tries to explore the meaning, importance, and various aspects of library automation and resource sharing in higher education institutions. It also discusses the benefits, challenges, and the present status of automation in Indian academic libraries. The paper further highlights how resource sharing programmes like Inter-Library Loan (ILL), union catalogues, and consortia arrangements are helping students, researchers, and faculty members to access a wider range of information resources. The study also looks at some important software systems being used for library automation in India and suggests ways to improve the situation for better academic outcomes.

Keywords-- Library Automation, Resource Sharing, Higher Education, OPAC, Inter-Library Loan

I. INTRODUCTION

Libraries are the heart of any educational institution. They provide knowledge, information, and research support to students, teachers, and scholars. In the present digital era, the role of libraries has changed a great deal. The traditional concept of a library, where books were arranged on shelves and catalogue cards were maintained manually, is now being replaced by modern, technology-driven library systems. Library automation refers to the use of computers and software to manage and perform various library operations such as cataloguing, circulation, acquisition, and serial management. It makes library work faster, more accurate, and more user-friendly. Resource sharing, on the other hand, means cooperation between libraries to share books, journals, and other information materials so that users can get access to resources that may not be available in their own library. In the context of higher education in India, both library automation and resource sharing have become very important.

Universities, colleges, and research institutes are under pressure to provide quality information services to their users. With increasing demands and limited budgets, automation and resource sharing offer practical solutions to meet these challenges effectively.

Present Status of Library Automation in Indian Higher Education

The situation of library automation in India has improved significantly over the past two decades, largely due to government initiatives and the efforts of organisations like INFLIBNET and UGC. The UGC-INFONET Digital Library Consortium has been providing access to electronic resources to universities across India since 2004, and today it covers more than 450 universities. INFLIBNET Centre has also developed the Shodhganga repository, which is a national portal of electronic theses and dissertations from Indian universities. This is a major contribution to resource sharing in the higher education sector. Similarly, the e-PG Pathshala and e-Shodhsindhu initiatives have added a great deal of digital content for Indian scholars and students.

Under the National Mission on Education through ICT (NMEICT), several efforts have been made to strengthen the IT infrastructure in colleges and universities. The SWAYAM platform, digital libraries, and virtual labs are all examples of how technology is being used to improve access to education and information in India. However, the progress is not uniform across the country. While central universities, IITs, and NITs have well-developed automated libraries with access to a wide range of digital resources, many state universities and affiliated colleges still lack basic automation facilities. There is a significant digital divide between urban and rural institutions, and between well-funded and poorly-funded ones.

II. REVIEW OF LITERATURE

A review of existing literature reveals a consistent and growing body of scholarship on library automation and resource sharing in Indian higher education, highlighting both the achievements of early adopters and the structural challenges encountered by institutions in the early stages of technological transition.



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Birje et al. (2011) presented a case study of automation at the Barr. Balasaheb Khardekar Library, documenting that post-automation, catalogue search time was reduced by 78%, circulation transaction time fell from an average of 8 minutes to under 90 seconds, and staff were redeployed from repetitive clerical tasks to higher-value reference and outreach services. *Chitra and Kumbar (2020)* studied library automation in first-grade colleges affiliated to the University of Mysore and found that while 62% of surveyed libraries had implemented Koha software, only 34% had fully operationalised OPAC services for end users, indicating a significant gap between software adoption and user-facing service delivery. *Nimbhorkar (2024)* conducted a comprehensive survey of library automation status in universities and colleges across India and abroad, reporting that open-source software particularly Koha and E-Granthalaya accounts for over 70% of all automation deployments in Indian academic libraries, primarily due to zero licensing cost and active community support. *Trivedi (2025)* examined the digital transformation of higher education libraries and underscored that the integration of cloud-based cataloguing, remote access portals, and virtual reference services has become a post-pandemic priority, with institutions reporting a 40% increase in digital resource usage between 2020 and 2024. *Balachandran, Dominic, and Sivankalai (2025)* investigated cloud-based library management integrated with VPN access, demonstrating that consortium-level cloud deployments reduced individual institutional infrastructure costs by approximately 35% while improving resource availability and system uptime across participating libraries. *Umap and Jani (2025)* analysed electronic resource management systems in Indian academic libraries, finding that e-resource management remains the weakest link in the automation chain, with fewer than 28% of surveyed institutions maintaining a dedicated Electronic Resource Management System (ERMS) independent of their ILMs module.

III. OBJECTIVES OF THE STUDY

The study is guided by the following three primary objectives:

1. To assess library automation status, technologies, software, and networking systems in Indian higher education institutions.
2. To evaluate effectiveness of resource-sharing mechanisms, consortia, interlibrary loans, and digital repositories in academic libraries.
3. To identify automation challenges and recommend evidence-based solutions for improving library resource sharing systems.

IV. CONCEPT OF LIBRARY AUTOMATION

Library automation can be simply understood as the application of computers, software, and networking technologies to perform traditional library functions more efficiently. The basic idea is to reduce manual work, eliminate repetitive tasks, and provide faster and more accurate services to library users. The process of library automation usually begins with the computerisation of the library catalogue, known as the Online Public Access Catalogue or OPAC. Through OPAC, users can search for books and other materials from any computer or even from their mobile phones. This saves a lot of time compared to searching through manual card catalogues.

The major functional areas of a library that can be automated include:

- Acquisition: Ordering, receiving, and recording new books and materials
- Cataloguing: Creating records of library materials in a digital format
- Circulation: Managing issue, return, and renewal of library materials
- Serial Management: Tracking journals, magazines, and periodicals
- OPAC: Providing online access to the library catalogue
- Reference Services: Providing digital reference and information services

A good library automation system, often called an Integrated Library System (ILS) or Library Management System (LMS), combines all these functions into a single platform. Some popular library software used in Indian academic libraries include SOUL (Software for University Libraries), Koha, NewGenLib, and LibSys.

V. CONCEPT OF RESOURCE SHARING

Resource sharing in libraries means an organised arrangement between two or more libraries to share their collections and information resources for the mutual benefit of their users. It is based on the simple principle that no single library can afford to purchase all available information materials. Therefore, libraries cooperate with each other to ensure that users get the information they need, even if their own library does not have it.

Resource sharing can take place at different levels, such as local, regional, national, or even international levels. It can involve physical sharing of materials or electronic sharing of digital resources. The main forms of resource sharing include:



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Inter-Library Loan (ILL)

Under this arrangement, a library borrows books, articles, or other materials from another library on behalf of its users. This is one of the oldest and most common forms of resource sharing. In India, many university libraries participate in ILL programmes.

Union Catalogue

A union catalogue is a combined catalogue that shows the holdings of multiple libraries. It helps users to find out which library has a particular book or journal. INFLIBNET (Information and Library Network) maintains the UNION Catalogue of Indian University Libraries (SOUL).

Document Delivery Services

Instead of lending the physical document, libraries provide photocopies or digital copies of articles or book chapters to users in other libraries. This is a quick and cost-effective way of resource sharing.

Library Consortia

A library consortium is a group of libraries that work together to negotiate better deals with publishers for subscribing to electronic journals and databases. In India, the UGC-INFONET Digital Library Consortium, managed by INFLIBNET Centre, Ahmedabad, is the largest and most important library consortium for higher education. It provides access to thousands of e-journals and e-books to universities across the country.

Importance of Library Automation and Resource Sharing in Higher Education

Higher education institutions in India are facing several challenges related to information management. The number of students is increasing every year, research activities are growing, and the volume of published information is expanding rapidly. In this situation, library automation and resource sharing play a very important role.

Automation helps libraries manage large and continuously growing collections more efficiently. It minimizes errors in cataloguing and circulation activities while ensuring records remain updated and accurate. Automated systems also reduce the workload of library staff, enabling them to focus more on user-oriented services and academic support. Automated tools such as OPAC significantly improve information retrieval for students and researchers. Users can search library resources anytime and from any location without physically visiting the library, which is particularly beneficial for distance learners and researchers working in remote areas.

Resource sharing enables libraries to provide wider access to information resources without increasing financial burden. Through library consortia, interlibrary loans, and digital repositories, smaller academic institutions can access costly national and international journals, databases, and scholarly materials that would otherwise be unaffordable. This enhances the quality of teaching, learning, and research. Library automation and resource-sharing systems also support the objectives of the National Education Policy 2020 by promoting quality, accessibility, and equity in higher education. The effective use of technology in library services strengthens academic infrastructure and better supports the educational and research needs of students, teachers, and scholars.

VI. LIBRARY AUTOMATION SOFTWARE USED IN INDIA

Several library management software packages are being used in Indian higher education institutions. Each has its own features and advantages:

- SOUL (Software for University Libraries): Developed by INFLIBNET Centre, SOUL is designed specifically for Indian university libraries. It covers all major library functions and is widely used across Indian universities.
- Koha: An open-source library management system that is freely available and can be customised according to the needs of individual libraries. Many college and university libraries in India have adopted Koha because of its low cost and flexibility.
- NewGenLib: Another open-source system that provides integrated library management functions. It is particularly popular among smaller libraries and special libraries.
- LibSys: A commercial library software widely used in academic, public, and special libraries in India. It offers comprehensive features for all types of library operations.
- Evergreen and OpenBiblio: Open-source alternatives used by some institutions, particularly in resource-constrained environments.

VII. CHALLENGES IN LIBRARY AUTOMATION AND RESOURCE SHARING

Contempt its numerous advantages, the implementation of library automation and resource sharing in Indian higher education institutions continues to face several significant challenges.



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Financial limitations remain one of the major obstacles, particularly for rural and smaller colleges that lack sufficient funds to purchase automation software, computer systems, and networking infrastructure. Although open-source software is freely available, expenses related to hardware, internet connectivity, maintenance, and staff training still create difficulties for many institutions.

Another important challenge is the shortage of trained and technically skilled library professionals. Effective library automation requires staff members who are proficient in information and communication technology (ICT) and capable of handling library management software. In many institutions, library personnel have limited technical expertise, highlighting the need for regular training programmes and professional development initiatives.

Inadequate infrastructure also affects the successful implementation of automation systems. Continuous electricity supply and reliable high-speed internet connectivity are essential for digital library services. However, many rural and semi-urban regions in India still experience frequent power interruptions and poor internet facilities, which negatively impact library operations and access to digital resources.

Resistance to technological change among some library staff and administrators further slows the adoption of automated systems. Traditional methods are often preferred due to familiarity and lack of confidence in new technologies. Strong administrative support, awareness programmes, and motivation are necessary to encourage acceptance of modern library practices.

Data migration and standardisation present additional difficulties in the automation process. Converting manual records into digital formats is time-consuming, labour-intensive, and expensive. Problems related to cataloguing standards, metadata formats, and data exchange protocols can also hinder effective resource sharing among academic libraries.

VIII. CONCLUSION

Library automation and resource sharing are no longer optional extras for higher education institutions in India; they are absolute necessities. In a rapidly changing information environment, academic libraries must modernise their systems and services to remain relevant and useful to their users.

Automation helps libraries to work more efficiently, reduce errors, and serve users better. Resource sharing enables libraries to provide access to a much wider range of information materials than they could ever afford on their own.

The government, university authorities, and library professionals all have a role to play in this process. By working together and making use of available technologies and initiatives, it is possible to build a strong network of well-automated, resource-sharing libraries that can support the goals of quality higher education and research in India. The journey from a traditional library to a fully automated and networked library may not be easy, but it is essential for the progress of Indian education and scholarship.

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