PROSPECTS AND PROBLEMS OF LIBRARY AUTOMATION AND NETWORKING

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ABSTRACT

Library automation is seen as the application of automatic and semiautomatic data processing machines (computers) to perform traditional library housekeeping activities such as acquisition, circulation, cataloguing, and reference and serial control. Library networking means interlinked libraries or a system in which many library points stretched across a locality, city, state, region, nation, or world are linked with each other for information communication. The paper provided the concept of library networking, noting that it implies putting together sub-sets of information centres or libraries in order to act in a co-operative manner with a pre-determined obligation. It also gave an explanation of the concept of library automation and how prospects for library automation were used as the concept of library automation to produce repetition. It was on this basis that the paper concluded that libraries can achieve more benefits and can provide a wide range of services to their users, given that resource sharing among libraries has become a necessity in the modern era because of inflation in the cost of books and periodicals, budget limitations, storage of documents, and inadequacy of personnel. One of the recommendations was that, librarians should be sent out for training on automation in order to be well enlightened on automated library for easy utilization of the resources and effective mentoring of the users.

KEYWORDS: Library automation, Networking, Prospect & Problem.

Introduction

Libraries have been around for a very long time and have traditionally been seen as collections of information and services. Libraries have always played a significant role in enabling people to engage with all kinds of information and knowledge resources (Singleton & Brent, 2004). Through the technological development of electronic resources, the means to collect, store, manage, and use widely distributed knowledge resources have become more effective, serving library users even better (Mattson, 2000). Modern libraries are therefore being redefined as places to get wider access to information in many formats and from many sources. The technological development in libraries has affected both information space and information practice. Today we talk about libraries without walls as being logical extensions to libraries (Weiss, 2003). An important development in the second half

of the 20th century was the introduction of integrated library systems and online catalogues giving access to information on library collections from anywhere with an internet connection. The idea of the library room changed when much of the visibility of the library environment was on the screen (Haider & Syed, 1998). The distance between author and reader has been shortened, while it gives a more direct involvement in the dissemination of information. Libraries provide access to an endless variety of information resources and opportunities for interactive communication. However, the fundamental mission has remained to facilitate and give access to information and knowledge, but the processes, tools, and techniques have undergone major development. At the same time, the fact that the web is accessible from every corner of the world has meant that users are presented with the same interface, which is found problematic, while it is difficult to design an interface that suits such a wide range of users (Lalrohlui, 2021). Therefore, the development has also included a shift towards personalization and initiatives like My Library (Dilroshan & Chrishantha, 2000) have emerged. These are a further development of digital libraries, which provide personalised library services to Web users who expect customization and interactivity.

Concept of Library

A library is a collection of materials, books, or media that are easily accessible for use and not just for display purposes. It is responsible for housing updated information in order to meet the user's needs on a daily basis (Adegbore, 2010). A library provides physical (hard copy documents) or digital access (soft copies) materials and may be a physical location or a virtual space, or both. A library's collection can include printed materials and other physical resources in many formats, such as DVDs, CDs, and cassettes, as well as access to information, music, or other content held in bibliographic databases. A library, which may vary widely in size, may be organised for use and maintained by a public body such as a government; an institution such as a school or museum; a corporation; or a private individual. In addition, according to Mattson (2000), in his speech, to providing materials, libraries also provide the services of librarians who are trained and experts at finding, selecting, circulating, and organising information and at interpreting information needs, navigating and analysing very large amounts of information with a variety of resources. For instance, library buildings often provide quiet and conducive areas for studying, as well as common areas for group study and collaboration, and may provide public facilities for accessing their electronic resources, for instance, computers and access to the Internet. The library's clientele and therefore the services offered vary depending on its type; for example, users of a public library have different needs from those of a special library. Libraries may also be community hubs, where programmes are delivered and people engage in lifelong learning. Modern libraries extend their services beyond the physical walls of a building by providing materials accessible by electronic means, including from home via the Internet. Hence, managing information in an information world has become very easy simply because information can be provided or accessed virtually by people who are in remote areas and other places away from the library. The services the library offers are variously described as library services, information

services, or the combination "library and information services," although different institutions and sources define such terminology differently.

Concept of Library Automation

The name "automation" has been obtained from the Greek name "automate", which indicates something which has the power of unplanned motion of self-movement. Automation, when used in a library, refers to the mechanisation or computerization of all library movements. According to Gopal (2005), automation simply means the process of making plenty of work with the help of an automatic machine. It is used similarly to mechanization. In automation, the whole field of investigation is loyal to the design, application of methods and techniques for making a process or group self-regulating, self-operating, self-moving. Automation pertains to the theory, technique, or art of making a machine, advice, or purpose fully automatic. Presently, it is used in co-occurrence with computerization. Computer and information processing hardware play a major role in the process of automation by reason of the inherent ability of a computer to make decisions that impact, govern, or control the process based on the information collected by the computer concerning the position of the process.

Library automation may be defined as the application of automatic and semiautomatic data processing machines (computers) to perform traditional library housekeeping activities such as acquisition, circulation, cataloguing, and reference and serial control. According to Uddin (2009), "Library automation" is by far the most commonly used term to describe the mechanisation of library activities using the computer. In today's information age, automation of library services is therefore essential for the effective and efficient operation of a library system. The advantages of automation are rising for library scientists, not only due to the abundant flow of reading material and information, but also for their apparent viability and economic consideration. Therefore, the economy and efficaciousness of library systems become most important as a result of automation. It could be it is for this reason that Kimber expresses, "The library is no different from any other office or factory considering the use of computers to perform a given job of work most economically. Where the difference does arise, however, is in the concept of library service" (Jageesh, 1998) Appropriately, computerization brings about nearly a revolution in the functioning of a library. Computers are very productive, not only for management and library operations, but also similarly useful for library users. Processing of even huge quantities of data becomes greatly easier through computers. The traditional methods of information dissemination and data processing are now becoming obsolete. This conventional method of working is too time-consuming and cumbersome. Hence, from material preservation to cataloguing and data processing, all can be done much more easily with the help of a computer. There it is, a touch of timelessness and the availability of material through computers supplies an added impetus and energy to the entire library network. While much use of the information provided on the computer is possible, mostly, as it were, in a jiffy. Automation of the library facilitates most efficiency and accuracy, and library staff find a lot of support from the equipment they utilise in automation

and their regular work performance. As a result, numerous facilities, such as COM, database use regardless of geographic distance via telephone and telex, satellite, and so on, are available for simple operationalization; for example, the On-line Computer Library Center database can be used by approximately ten thousand libraries in thirty-nine countries (Gupta, 1995). Library automation covers the use of computers and other semi-automatic tools. These are semi-automatic because human intercession is involved in grater expansion, so when we talk of library automation in the present, it is significantly the use of computers, associated peripheral media, i.e., optical media, magnetic disks, etc., and computer-based services and products in library work. In current times, even the related topics such as networking of automated systems and information retrieval systems are also regarded as part of library automation. Although computers have an important role to play in library automation, reprographic and telecommunications technologies also have an important role because of the extent of support they offer (Singh, 2007).

Concept of Library Networking

Library networking means interlinked libraries or a system in which many library points stretched across a locality, city, state, region, nation, or world are linked with each other for information communication. Networking implies putting together sub-sets of information centres or libraries in order to act in a co-operative manner with a pre-determined obligation. It offers increased access to larger resources and a greater measure of service than the sum of all the constituents' parts. According to the National Commission on Libraries and Information Science (NCLIS), in the context of Library and Information Service, a network is defined as "two or more libraries and/or other organisations engaged in a common pattern of information exchange, through communication for some functional purpose."

***Need for Library Networking*:**

- To improve flow of information
- To improve contact among individuals, groups or organizations
- To improve collection and mobility of data/information
- To maximize utilization of resources
- To facilitate the planning and implementing of policies and activities
- To avoid duplication in research and development Network based Library Services:

All libraries with extensive collections offer more effective services to their patrons. The result is not satisfying all the clients due to the increase in user needs and lack of manpower in libraries. But this scenario has now changed due to the information explosion. Information technology has brought many useful changes to libraries, especially in the past ten years. Nowadays, most libraries are providing IT-based services to their clients. Network-based services are very cost-effective and offer

many opportunities to the users through the network that are not possible to provide manually.

Prospects of Library Automation

The recent trends in library automation systems are characterised by several strong changes brought about by technology and economic development. Unless radical change in either technology or the economy occurs, these trends seem likely to continue to dominate and to determine the course of library automation development for some time to come (Singh, 2009). Chief among these trends, and easily the most conspicuous, is the heavy emphasis being placed on library networks, that is, systems involving more than one library. The entire data processing programmes of the 1973 Clinic on Library Applications were devoted to networks, and the long-awaited draught report of the National Commission on Libraries and Information Science contained as its major recommendation a proposal for a national network, evolving from the existing local and regional ones. As Bierman has noted, the folly of individual libraries proceeding on their own to develop major automated systems solely for their own use seems well recognised and accepted. Networks come in many styles and flavours. One of the most common is the cooperative centre for providing catalogue cards, of which the outstanding and most successful example is OCLC, the Ohio College center. Many other state and regional networks are now tied into OCLC and dependent on it to a greater or lesser extent for the services they offer. A second type of network is also concerned primarily with technical processing but attempts to provide a means of cooperative acquisitions as well as cataloguing. Successful ones include the BCL programme in Massachusetts and the College Bibiocentre programme in Ontario, Canada. The mortality rate for this kind of network is high, however, as the deaths of CALBPC and ANYLTS make clear. A third type of grouping, sometimes called a network, is merely a loose consortium of libraries with special procedures for expediting inter-library loans, often using teletypes. Most of these are not automated in any significant way and so lie outside the sphere of this book, but some have been working for years to implement online networks for the same purposes. A universal interest in networks has several manifest causes. For one thing, declining library budgets and the starting increase in book and serial costs have made the need for cooperation between libraries more urgent. Resource sharing has become a byword, and the resources implied are both bibliographical and financial. Online networks enable libraries to know quickly and efficiently which books are in other duplicate copies needed. Bibliographical data can be shared more effectively too, as the OCLC system demonstrates.

According to Gupta (1995), a final and forceful incentive is that the sources of funds for purely local automation projects have almost dried up. The federal grants that were plentiful in the 1960s disappeared in the 1970s, foundations have been less willing to fund projects unless they were truly innovative, and most libraries' own budgets are being held static or reduced instead of being increased. Money for cooperative projects that can reasonably be expected to reduce operating costs can usually be found, but not money for local experimentation. Several technical

developments have also helped to make the network trend possible. The improvement in communication between computer systems and system users has already been noted, but it should be pointed out that this extends to communication between libraries as well. Telephone and teletype machines have long enabled some inter-library communication, but online networks enable librarians in many different libraries to literally share the same working files and catalogues in real time, almost as if they were working in one big data warehouse, and the cost of online terminals has dropped almost as dramatically as labour costs have risen. The combined force of all these has made the economic argument for networks compelling. Work in the development of standards has also enabled networking. Without MARC as a national standard for machine-readable bibliographic data, most of the successful networks would not only be to MARC's brilliant developers at the Library of Congress but also to the many librarians and others who worked hard to promote widespread acceptance of the standard through professional organisations such as the American Library Association Science and Automation Division Standards Institute and the International Standard Bibliographic Descriptions for monographs and serials. Standard Serial Number offers promise for eventual control of what sticky body of data These and other standards activities have done much to stabilise the future of networks.

Assuming that the trends mentioned above continue, the development of library automation in the near future can be predicted with some degree of confidence. For catalogue card production, very few new projects are likely to choose to join a network tied to OCLC or something similar, using it for catalogue searching and resource sharing as well as for card production. Attempts to use such networks for cooperative acquisitions are less likely to succeed and seem destined to fall into disfavor. Acquisitions work is more likely to be based on commercial package system development efforts. Columbia, Chicago, and Stanford Universities found that acquisition procedures differed so widely that a joint effort in systems development in this field was impractical. This situation is unlikely to change in the near future due to the increased use of online techniques (Tiwari, 2010).

Problem of Library Automation

• Lack of Proper Planning

Planning of library automation will involve a proper feasibility study of the project to avoid waste of time, money, and energy and to ensure the success of the project. In spite of its inherent benefits, library automation is a capital-intensive venture. This is because of the high cost associated with computer hardware and software. No project can succeed without a prior feasibility study. The adoption of any automation system in the library should be based on a wide range of feasibility studies, which will determine the adequacy of the programme. In light of the fact that there are now new hardware and software used for library automation, it becomes imperative for institutions to determine whether they have adequate sources of resources to operate library automation. Unless this is done, there are bound to be problems here and there. A proper plan for library automation must include the following points: the objective of the library, library finance and budget, system analysis, identification

of the main area of library automation, sources of data/standard format Z39.50, MARC, RDF, etc., hardware requirement, software for library automation for commercial or open source software.

● Lack of Fund/Economical Resources

The most crucial hurdle for a library in the pursuit of automation is obtaining the necessary funds. The major obstacle to any innovations in developing countries is the lack of resources. The initial cost of establishing a computer system is beyond the reach of most organisations and institutions. Generally, any successful and running operation requires sound financial aid for the purchase of hardware, software, and other associated peripherals of ICT. The library automation committee must keep in mind the expenditure for library automation and also the further maintenance and development costs for a successful automation process. A year-wise development plan for library automation and service must be added to the library automation plan.

● Lack of Resources and Technology

Most libraries encounter issues with library automation work due to a lack of awareness of current technology such as hardware and software issues. The library defined clearly the goal and objective of library automation and computerization, which is to provide wide access to digitised library collections, using computer-based skills to dispense library services to end-users. Library management decides on application software that could support an integrated library management system. The application software to be selected must be assessed to determine its scope and capacity that will be suitable to achieve the library's goal. There are long lists of application software packages on the market. Among these are UNESCO micro CDS/ISIS, TINLIB, Konlib pro-library manager, X-lib, Alice for Windows, Integrated Library Software, Koha, Greenstone, Glass, and others.

● Lack of Skilled or Trained Staff /Professional

Another problem is associated with a dearth of professionally trained and unskilled staff. The level of short-staffed is apparent while the little on the ground has so little or no computer knowledge. This posed a lot of technical problems for the automation exercise. In other cases, it was found that one or two professionals are saddled with the responsibility of managing the system unit there by limiting the outcome of service delivery to clients.

● Lack of Competent and Willing Manpower

Emphasis in library education had previously been on traditional librarianship. The building up of a collection and its organisation and administration dominated the curricula. Information science and information technology failed to find appropriate representation in the courses. This resulted in a scarcity of librarians who could plan, design, program, and implement various information projects. It is also true that the vast majority of the present generation of librarians have inadequate knowledge of computers and their potential in library and information work. The efforts made to

redress the situation have not helped very much. Three successive revisions of curricula and two reports on the subject have failed to find support from library schools with regard to the incorporation of information science courses into their curriculum. What made them oblivious to implementation? Of the many reasons, two are of particular importance: the lack of training laboratories with adequate information technology equipment and the non-existence of a competent faculty with adequate qualifications in information technology.

Prospects of Library Networking

Technology nowadays is moving very speedily and in this age of electronic revaluation and computers, more and better gadgets are being invented each and every day, which makes our lives easier and simpler (Gahale, 2013). Communication too has developed tremendously due to the advances made in communication technology, such as blue-tooth and WAP technology. We are moving towards a seamless environment where every form of communication is merging. The concept of networking is, in all likelihood, as old as telecommunication itself. Consider people living in the Stone Age, when drums may have been utilised to transmit messages between individuals. Certainly, we have come a long way off from the primitive devices and attitudes of our forebears. In the present, we have computers talking to each other over wide assemblages of wires, microwaves, and fibre optics. The simple meaning of a computer network is: any set of computers or devices attached to each other. However, we define a computer network as a collection of hosts that are capable of communicating with each other using a single technology, frequently relying on the services of a number of dedicated hosts that transfer data between the participants. Hosts are many computers, but one can also think of X terminals or clever printers as hosts. Small collections of hosts are also called sites.

The recent growth in the network user population has brought into the arena larger numbers of non-technical people who have learned the advantages of creating network applications, such as electronic mail, and wish to explore the increasing availability of networked information resources (Iyer, 1999). The increasing complexity of the growth in user access as physical computers brings into sharper focus the need for easy-to-use navigational information discovery and access tools. Information can sometimes be available faster in electronic form now than in the printed equivalent. The emphasis is therefore moving away from the speculative and uncertain implementation of technical features and towards the design of reliable network services that are appropriate for direct use by non-specialists without extensive support and training. A clear trend is toward a situation in which the end user interacts directly with the information source rather than through a human intermediary. Many of the problems in organising and making accessible this confusing welt of information resources seem analogous to those that the traditional librarian faces with printed material, although the solutions may not be directly transferable. One area in which librarians have been active has been in the complication of resource guides to network facilities. This has been a particular feature of the research network environment. The oriented guide or online text documents are unsuitable for comprehensive convergence of the rapidly changing

network environment. A database which can be queried from any network node can change resources and location. The scale of the problem is such that no single centralised and updated guide is likely to be feasible in providing these mechanisms.

A resource guide can consist of a central database that can be updated from local sources with local information or a distributed database that can redirect queries to the local site for processing in a web of co-operating databases. A distributed X.500 directory would seem an attractive option here, although there is doubt about whether the present standard is capable of providing an adequate solution at the scale that the problem requires. The distributed approach presupposes a level of agreement on standard descriptions for classes of items and on protocols for the routing of queries between local databases. To provide the user with immediate access to the resource, the guide would need to contain routing information as well as a description so that sought items could be retrieved in full without further action by the user. Several proposals have been made for schemes for organising and uniquely identifying resources, particularly in the internet world. There are, however, a number of problems with electronic information items in such an uncontrolled environment, including the possibility of loss of information in different versions and content between different instances of the same record, the problem of version control, the recognition of name changes in, say, filenames for items with the same content.

Problems of Library Automation

- **Fear of adverse impact on employment**

When we look into the various library activities like book acquisition, technical processing, circulation, and reference services, we understand that human interference is required everywhere. But manpower is required for cataloguing. The data that is entered at the time of ordering can be used for cataloguing with some changes. It will eliminate the multiple cards' preparation and subsequent filling. This saved manpower can be utilised for analytical cataloguing or introducing new services. This way, there will be no effect on employees.

- **Apprehension that the technology could be too expensive**

It is understood that hardware and software would be expensive and unaffordable. Actually, the cataloguing system is the most important, which forms the basis for other library activities. For this purpose, UNESCO has developed PC-based software CDS/ISIS which is available at a very low price in developing countries. It works on IBM compatible PCs or UNIX platforms. A Windows version is also available. The data can be exported in ISO 2709 format without difficulty. INFLIBNET has also developed a public domain library software called ILMS, which is suitable for DOS and UNIX platforms. Lately, PCs and other accessories like printers and scanners have become cheaper, so they are affordable.

- **The library staff has to undergo extensive training**

Training for operating the computer system and the programme is required and is given by the software developers, but training for CDS/ISIS is available at INSDOC, INFLIBNET, and DRTC. For cataloguing, a minimum training of one or two weeks will be enough for the librarians. The user can transfer the same data to a network environment. If there is a systems department with computer professionals, maintenance becomes easy.

- **Lack of support from the management, may be owing to budget constraints**

If the management support is not enough, then it may be a barrier to the development of the library. In this situation, the librarian has to make more effort to convince the management that users will benefit from the automation. Also, initiative and communication skills play a major role in convincing the management to pay more attention.

- **Retrospective conversion of data**

The manpower saved by computerised automation can be utilised for conversion and also for analytical cataloguing. This can be achieved in a time-bound project (Tiwari, 2010).

Problems of Library Networking

According to Sanbighna, Swadesh, and Malviya (2012), establishing a network for any set of libraries is a herculean task. Bringing together several libraries of the same type, or multi-type, to achieve a few common goals involves several issues and problems. Several authors have brought out the issues from different angles. An attempt has been made here to present such selected problems and the issues they involve. Williams and Flynn describe the most critical tasks in the network's operational state as:

- Network management and administration
- Standardization
- Implementation
- Document delivery functions and
- Communication functions
- The basis of financial support, authorization to use, charges for users, allocation of resources.
- Legal questions of copyrights
- The norms for evaluation of the operation of a network or its constitute elements

- The inter relationship between private and public networks
- Generalization of practices of the different media to access more networks
- Desirability of development of common database
- Role of the community in the improvement of the system and its content

Conclusion

Resource sharing is a useful and powerful concept for libraries. Libraries can achieve more benefits and can provide a wide range of services to their users given that resource sharing among libraries has become a necessity in the modern era because of inflation in the cost of books and periodicals, budget limitations, storage of documents, and inadequacy of personnel.

Recommendations

1. Librarians should be sent out for training on automation in order to be well enlightened on automated library for easy utilization of the resources and effective mentoring of the users.
2. Automation will bring about tremendous impact on libraries, it is essential that the authorities scout around for adequate funds to expedite the program.
3. In order to cope with the anticipated changes, there is a need for capacity building; a change in attitude and outlook of the staff would affect every aspect of the way they work in their respective libraries.
4. For libraries to achieve more benefits and provide wide range of services to their users, things should be put in place by the appropriate authority.

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