

Investigation On Information Technology's (It's) Role In Indian Universities Academic Libraries

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ABSTRACT

In India, Information technology (IT) has revolutionised organisational information activities in research and academic libraries. India has the third largest university system, after the United States and China. Academic libraries and information centres serve as important sources of valuable records that aid in meeting society's information demands. In modern settings, these centres are frequently outfitted with cutting-edge IT tools to help in information acquisition, dissemination, and access to resources housed in remote archives that were previously unavailable. To this end, it is impossible to emphasise the role of IT in university libraries in India in serving their clients' scholarly needs. Space availability, technological know-how, skilled IT labour, finance, and maintenance culture are all factors to consider while establishing fully working IT compliant libraries. Following these considerations, the perception of IT resources and the availability of proper training for prospective users of these tools could offer substantial issues. Finally, this research paper discusses a number of issues that may have an impact on the full deployment of IT services in academic libraries. As a result, it is suggested that study be conducted to discover which of these characteristics play the most important roles in the transition from a paper-based system to a completely automated IT-driven academic library.

KEYWORDS: Information Technology, Academic Library, Availability of Space, Trained IT Manpower, Funding and Maintenance Culture

INTRODUCTION

The importance of information in human life cannot be overstated. Since the mid-twentieth century, the impact of information has grown primarily because of societal change and significant advances in science and technology. Cholin VS (2005) ^[1] aimed to provide an overview of the utilization of IT in India's university libraries, with the purpose to provide easy access to materials both inside and outside of colleges. The author also mentioned INFLIBNET Centre's involvement in the expansion of university libraries across the India, focussing on the UGC-Infonet E-Journals Consortium's initiatives. Husain S et al. (2015) ^[2] found that to administer a variety of library operations and services, India's academic libraries have mostly depended on traditional ICT-based solutions, including information organisation and retrieval. In academic libraries, blogs, social networking, Web discovery tools, RSS feeds, wikis, and social bookmarking appear to be uncommonly used modern ICT-based information generation and sharing platforms. The key impediments to ICT applications in academic libraries were found to be lacking skilled ICT workers, insufficient ICT skills among Library patrons, are uninformed of the advantages of ICT, and have inadequate ICT infrastructure.

According to Singh and Kaur (2009) ^[3], Academic libraries' principal goal is to conserve and offer access to information and knowledge while also supporting their parent institutions' teaching and research missions. The entire concept of the library began to change when the highest accessibility of the university library was visible to its users on a computer screen. 'Turnkey systems on microcomputers,' now called as ILS (Integrated Library Systems), were available as a result of these advancements. ILS included all of the essential hardware and software to connect major circulation services like circulation control and overdue alerts. ^[5] Other library duties, such as acquisition, cataloguing, title reservation, and serials monitoring, might be accomplished by ILS as the technology advanced. ILSs allowed patrons to be more passionately connected with their libraries by OPACs and online web-based portals as the Internet evolved during the 1990s and into the 2000s. Users could reserve or renew books by registering onto their library accounts, as well as enrol themselves for online databases to which the library subscribes. During this period, the ILS market increased at an exponential rate. The organising of information/knowledge is a prerequisite for its effective exploitation and distribution in an academic library. The requirement to organise knowledge grows in importance as the quantity and quality of knowledge grows. Since the dawn of time, a plethora of various methods for organising data have been invented and used. Heavy requirements are exerted on storing library information and retrieval systems as a result of the vast generation of different material and the ever-growing degree of specialisation in different fields of human knowledge, which can only be addressed with the use of IT devices if conventional means are not used. Improvements and advancements in computing and telecommunications, as well as their integration, have had a considerable impact on academic library knowledge processing and distribution methods, hence enhancing the performance of use of such libraries. Today's library information systems are software systems that assist persons, organisations, or other software systems and are capable of acquiring, transferring, storing, retrieving, manipulating, and displaying information. In the library setting, this system is referred to as an automated system that comprises of software designed to perform the library's fundamental housekeeping activities, which include acquisitions, cataloguing and categorisation, distribution, document management, and serials control and/or management, which are all today augmented by manual labour. Rapid advancements in computing technologies have resulted in changes in practically all services, regardless of whether they are provided by the government or the public sector ^[6]. Obviously, people will want libraries to provide services on par with those provided in other areas of their lives. Libraries have a history of being forerunners in adopting innovations, as seen by significant transitions all through the history of the profession of librarianship. This is also true when it comes to implementing and utilising Internet technology.

INFORMATION TECHNOLOGY DEFINITION (IT)

Many academics have studied information technology (IT) in various ways. The capture, interpretation, store, and transmission of text, numerical, visual, and auditory information is defined as information technology in the library science. In other words, it is a term that applies to the congregating (acquisition), packaging, making repository, and distribution of data, which can be textual or mathematical (books, documents), vocal and pictorial (audio-visual), or a consolidation of entire discussed above (multimedia), utilizing an amalgam of computer and human resources. IT is the utilization of technologies to handling of data, which encompasses storage, processing, generation, retrieval, and distribution; the combining of communication and information technology with the aim of handling information.^[7] IT is characterized as "all forms of technology applied to the processing, storing, and transmitting of information in electronic form," emphasising that Computers, communication devices, and networks, as well as fax machines and electronic pocket calculators, are examples of physical appliances utilized for this purpose.^[8] IT is defined as the utilization of a computer system and telecommunications appliance in the administering of information, with three

basic components: electronic processing utilizing a computer, data dissemination utilizing telecommunications appliance, and information dissemination via multimedia.^[9] In libraries IT refers to entire electronic infrastructure and appliance that libraries utilise to advance and provide well-organized services. Such provisions, in general, comprise of communication linkages, hardware, and software, and connecting service outlets of library systems in order to enable the distribution of common resources, in particular networks of library. Today's library must not only keep and preserve records, but also design methods for transmitting the contents of such papers quickly and effectively for use.^[10] The rapid pace of innovation brought on by novel technology has had a profound impact on how people across the globe live, work, and play.^[11]

Mail, radio, newspapers, telephone, television, books, and magazines are the conventional means by which consumers convey and receive information.^[12] Data communications systems—computer systems—have, though, been constantly sending across communication lines like telephone lines since the mid-1960s. Businesses, libraries, institutions, and individuals now have easier access to knowledge because to the Internet. Some of the most prevalent options are www (World Wide Web), FTP (File Transfer Protocol), e-mail, Usenet, and Telnet. All of these high-tech items are considered essential to the globalisation notion. By enabling swift commercial transactions and promoting global collaboration among individuals and organisations, the Internet and its technology continue to have a significant impact on information exchange, notably amongst scholars. These technologies have the capacity to create "virtual campuses" and "virtual libraries," allowing more students to participate and learn.^[11] Nancy Schiller, one of the primordial writers used the term "virtual library," which she described in 1992 as "libraries in which computer and telecommunications technology enable access to a wide range of information resources."^[13] The idea is now called as a "digital library," an "electronic library," a "community network," or in simple terms a "library without walls".

BENEFITS OF IT IN LIBRARY SERVICES

The utilisation of information technology (IT) in the library has numerous benefits. According to Igbeka (2008)^[14] and Adeleke (2014)^[15], the following are some of the benefits of IT to library services: Assist researchers in their hunt for effective literature reviews. Introduce and provide novel services, as well as revitalise current ones, by facilitating resource access and addressing space and time constraints. The OPAC (Online Public Access Catalogue) is a tool based on that helps library patron's catalogue library materials. To give users with need-based (tailor-made) browsing and retroactive search capabilities. Having a huge number of databases stored on CDs. Computers have helped libraries by creating a digital library that takes up minimal space but has a large storage capacity. To make better use of the staff in order to provide better information services. Retrieving and disseminating data in a user-defined format. Professionals' abilities to be developed/improved. Information is stored and conserved over a lengthy period of time without deterioration in picture or quality. At the local level, to stimulate networking and resource sharing. Placing orders, checking for duplicate books, calculating prices, and ordering are all done extremely efficiently with the use of ICT. Being able to view a variety of peer – reviewed journals (National or International) that are solely available in machine-readable version. To save space and preserve the records by digitising them. To collect, store, alter, and disseminate data. The goal is to make library functions more efficient. Assists with serial control by producing a union list of serials and distributing it by e-mail to branch libraries in various places. To increase the efficiency of library operations at a lower cost. To aid with distribution, serials control, purchase control, maintenance of stock, and other daily office activities, as well as to create an internal database. To use library networks to gain access to other libraries' catalogues and databases. Integration of library services on a global scale. Because of the

Internet, everyone has access to information. Increased innovation and the conversion of knowledge from hardcopy to softcopy books. The library's ideology has shifted from being a physical structure that houses books to a database that provides universal access to information. By storing, retrieving, and discriminating information in real time, IT has lowered the library's services/organization, and library automation has been a huge aid to the librarians.

STATUS OF IT IN INDIAN UNIVERSITIES ACADEMIC LIBRARIES

In India, there is a growing need for distance education; it is, however, today relying on the out-dated technique of print media. As a result, it is a necessary to incorporate IT into the distance education curriculum. Recently COVID-19 pandemic has forced educational institutions around the globe to close, putting academic calendars in jeopardy. To keep academic activities alive, most academic institutions in developing countries like India have transitioned to online learning platforms.^[16] Indian higher education system, positioned at number three following United states and China, have around 310 institutions/ universities, 15,500 associated colleges, 100 lakhs students, and 5 lakh faculty in the system.^[1] In India, University libraries are at different phases of integrating information technology into their daily operations. India's Academic libraries are still learning about the value of current information and communication technologies. Librarians should revitalize current library environments and evolve training and expertise among their staff members in the professions of website or portal development, hardware maintenance, computer programming, and metadata or e-resource management in order to cater quality information services to their users. ^[2] Due to technological advancements, the use of ICT tools in Academic Libraries is expanding, particularly in Technical (Engineering) Colleges and Arts and Science Colleges. As per respondents, the mobile phone ranks first due to its ease of use at any time and from any location. Because most academic libraries lack a LAN connection, Internet usage is low. Academic libraries should improve their video conferencing capabilities so that users can get the most out of ICT-based activities and services. Due to a lack of consortiums, it has been discovered that only some libraries offer video conferences. If collaboration with other libraries becomes more common, so will the use of video conferencing.^[17] The findings of Nazim M et al. (2011) ^[18] revealed that while most professionals are aware with the term "knowledge management," the methods in which they know and the depths to which they grasp it vary. They were primarily concerned with the management of precise knowledge, and their responsibilities were viewed as routine data management tasks. Knowledge management in academic libraries is aided by professional education and training programmes, communities of practise, information technology, and knowledge exchange. Misinterpretation of knowledge management ideas, dearth of knowledge disseminating culture, top management allegiance, rewards and incentives, economic ability, and IT infrastructure are the key challenges to incorporating knowledge management into library practises by library professionals.

IT IN APPLICATION

The utilisation of IT in the library and information area has advanced dramatically across the globe. Information technology influences not just the technical services provided by libraries, but also the library services given to the general public. Libraries across the globe have been experimenting with novel technologies in order to provide better and more efficient access to massive data resources and effective data services to their users. Libraries can now accomplish operational excellence, output, and service quality thanks to advances in IT. The notion that perceived simplicity of utilization, utility, and Cloud computing popularity in libraries is fuelled by the pervasive availability of the underlying technology. ^[19] In addition, attitude is linked to the behavioural desire to utilize cloud computing services. The perceived cloud computing features and the librarian's motive to employ cloud computing technology had a high level of association. Security risk, on the other hand, has been

the most significant factor influencing behavioural intentions. The technological era has begun, and the librarians, must express their identity by obtaining the necessary knowledge and abilities and giving the appropriate information to the user at the appropriate moment, which has been their slogan since the beginning.^[20] Academic libraries face numerous obstacles, which are exacerbated by the fact that they are already dealing with dwindling resources. In the library field, the prospects of social media in academic libraries have been high, and the use of various Social Media Networks has been widely supported in Library 2.0 literature.^[21] The study made by Kumar S et al. 2013^[22] identified computer literacy levels from three major universities of North India that were sufficient for fact-finding academic content from electronic resources and databases. They discovered that less than half of the respondents claimed to have sufficient computer skills to find information in databases or electronic resources. However, in computer abilities no significant differences were detected amongst pupils with various demographic features. There were considerable disparities in the utilization of the internet and the OPAC among academic majors. Significant disparities were also found between academic internet use and students of various ages. Libraries are utilising IT to automate a variety of administrative and technical operations, create databases and networks, and improve user services. In libraries, technology aids in the efficient execution of operations and services. The use of technology, as well as its accessibility, allows for the free circulation of information, creative expression, and successful management. The present study looked into the state of technology in the IIMT Library. Overall, service quality and consumer happiness were average, indicating that there was room for improvement. The three characteristics listed below were: Print resource adequacy, electronic resource adequacy, and IT service adequacy were all given low ratings. According to the findings, the library personnel should pay greater attention to these three characteristics. Improving performance necessitates paying attention to the primary elements via which consumers receive service quality, as well as management and library staff dedication.^[20]

LIMITATIONS TO EFFECTIVE INFORMATION TECHNOLOGY AVAILABILITY AND USE IN THE ACADEMIC LIBRARY

People's aversion to technological change; encountering technical issues when using the product; The translation of analogue material into digital format, as well as its storage capacity, places a heavy demand on the University's bandwidth. A computer crash caused by a virus, malware, or hackers, for example, might result in significant data loss and information disclosure to non-users. Academic Funds are also limitation is digitization of Libraries.

CONCLUSION

It might be concluded that knowledge organisation is a fundamental intellectual pillar on which the practise of librarianship is built. They serve as the scientific foundation for a librarian's claim to professionalism. In Indian universities academic libraries, the utilization of ICT in library services raises the issue of knowledge organisation depth. What should a catalogue entry's length be, and what hotspots are required? For automated catalogue records, the shorter the entry, the better. The availability of adequate ICT facilities and peripherals has the effect of shortening distances, increasing the volume and scope of information that can be handled or processed in a given period of time, and making it easier for patrons to search.

RECOMMENDATIONS

The following suggestions are provided for making efficient use of information communication technology capabilities in knowledge organisation:

1. The parent body of libraries should make a concerted effort to raise library subventions so that they can participate in required information and communication technology programmes.
2. All library employees and patrons should receive computer training.
3. Setting up workstations for all cataloguers to undertake online cataloguing, eliminating the problems that arise during cataloguing and the errors that data entry clerks make. All of these workstations should be connected to an uninterruptible power supply (UPS).
4. Establishment of a Local Area Network (LAN) in the divisions where knowledge organisation is carried out. The supervisors should be able to revise cataloguing and categorization records more quickly as a result of this.
5. Maintaining a consistent power supply in the library, particularly in areas where cataloguing is done. This can be ensured by Power Holding Company of India's deployment of a standby electricity producing set as a backup in the event of a power outage.
6. Staff should be retrained in basic cataloguing rules.
7. Adequate ICT infrastructure to ensure a continuous flow of work.

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