Chapter-III

REVIEW OF LITERATURE
3.1 INTRODUCTION

Review of literature is the most important aspect in any research work. It is a measure stating the recent output on a particular area of research and organized in a helpful sequence to strengthen the present research techniques. The main objective of the review of literature is to understand the research activities that have taken place in a particular discipline in general and in the area of research in particular.

A review of literature of related Information Products Management is attempted in this chapter. The review covers combinations of international and national level.

3.2 INTERNATIONAL

Dumant and others (1989)\(^1\) dealt with human response to library automation. They explored role of attitudes towards technology as a determinant of careers. He used a questionnaire survey of 105 members of the Ohio Library Association. The hypothesis that the women librarians are less interested in technology than men is not supported by the results of the study in the profession

Brown, S. (1992)\(^2\) described use of the information management product HEADFAST at Wirral Metropolitan College, UK, to support the library and learning resources catalogue. HEADFAST's strengths include: high speed full text retrieval and updating; and flexibility of application development. He outlined future applications.
Nawe (1992) brought out problems of training and personnel development in the context of inadequate training facilities and inadequately defined skills resulting in failure on the part of the professional to meet the needs of users. Key attributes and attitudes required for the identification of skills in the context of African librarianship in general and that of Tanzania in particular are covered. The author stressed the need for a concrete and appropriate training and personnel development programme.

Dominguez, A. C. B. (1994) in his article entitled “The management of product information in a biotechnological institution of a new kind” discussed the experiences of the National Centre for Bioproducts in the use of a network for the management of product information. Further, he discussed steps to be followed in establishing a basis for the management of information and considered the advantages offered by a network for the time and cost effective processing of information by a biotechnology organization.

Lambert (1994) stated the application of CD-ROMs staff implications in Library and information centers. The advantages of CD’s and the related problems like financial sources, staff requirements, training and assistance to users were discussed. The article emphasized the need for the professional staff to attend administrative as well as technical functions. The need of staff training programmes from time to time was highlighted in this article.
Lapp, E. and Neubauer, W. (1994)\textsuperscript{6} opined that Planning and delivering library products and information services should be a systematic process and quality should be the central goal. Further, they attempted to define quality in terms of library products and services. Taking current quality discussions as a starting point, a quality concept for a special library and elements of extensive quality \textit{management} of \textit{information products} and services are presented. The combination of strategic, organizational, human and technical measures is crucial for quality improvement.

Geller, M and others (1995)\textsuperscript{7} prepared a report of a variety of publishers explaining the experiences with the development of electronic products and the problems content management of electronically produced products. These also deal with the likely ways of charging for information which is delivered over the Internet.

Butterworth, M. (1996)\textsuperscript{8} considered issues for schools and school librarians arising from the new directions in information technology taking place in the Singapore education scene in a workshop held in 1996. Topics covered included electronic information sources; local suppliers of \textit{electronic products}; the importance of reading; an invaluable bibliography of background reading material for the workshop with a bearing on schools and school libraries is appended at the end.

Carrington, B. M., (1996)\textsuperscript{9} has set out how the Electronic Access Committee of Perkins Library, Duke University, North Carolina, USA,
tests electronic products for accessing by disparate and remote users. He discussed choosing access pathways, testing of hardware, operating systems, connections, printing and World Wide Web browsers.

Borghuis (1997)\textsuperscript{10} in his book entitled “User feedback from electronic subscriptions: the possibilities of log file analysis, described With the advent of full text information products and services in electronic form, feedback from end users through analysis of log files could become a powerful management tool both for librarians and publishers. Further he highlighted the importance given to audio-visual materials, manuscripts and rare books in university libraries. He also considered how the advent of library automation will affect the future of library services in Iran.

Levergood, B., (1997)\textsuperscript{11} surveyed some of the major issues involved in managing US Federal information in electronic format that is available through the Federal Depository Library Program (FDLP), with a focus on problems and solutions that may be unique to a documents department. He dealt with hardware and software needed; information sources; challenges presented by the provision of public access, particularly to very large files; license agreements; the importance of obtaining adequate documentation on the electronic products; and staff training. Further, he compared tangible products, such as CD-ROMs and floppy discs, with Internet and bulletin board products and services.

Chambers, S. and Perrow, D. (1998)\textsuperscript{12} in their article examined the use of project management techniques and software in UK university
libraries. A simple project methodology was applied to 2 university libraries: Newcastle and Reading and a comparison made with North Umbria University, where a different approach to project management training was taken. A number of project software packages were evaluated and the chosen package used selectively by a number of project managers. The effect of using these packages was evaluated by comparing project participants' views of previous projects with those managed using the new tools and techniques.

Davis, T. L. and Reilly, J. J. (1998) discussed on the issue of serials that Librarians regularly deal with when acquiring electronic products and services. As the librarian's role evolves from handling only the traditional serial subscription to managing these electronic services, knowledge of contractual issues is mandatory. The actual license review process is complex and requires expertise and skills beyond the training and experience of most library staff. Further, they described the steps required to acquire and process a license agreement using a sample electronic product.

Opaleke, J. S. (1998) in his article entitled “Implication of the state and management of non-print resources in Nigerian university libraries on clientele academic achievement.” reports results of a questionnaire survey conducted among university libraries in Nigeria to determine the existence and use of non print materials. He concluded that issues which need to be addressed include: less restrictions on library use;
more appropriate opening hours; expansion of software from the current
focus on science to other areas, notably education, arts and social sciences;
and better training for library staff in non print materials.

Pasanen-Tuomainen, and Talikka, (1998)\textsuperscript{15} in their article entitled
“Network at work: tailoring digital information” in the Seventeenth Annual
IATUL Conference 1996, University of California, Irvine, California,
USA, 24-28 June 1996. The author argues that the electronic information
marketplace offers the technological university libraries new possibilities
to disseminate tailor-made information products. Further, the article also
focuses on the recent initiative concerning the electronic information
packages provided by the Finnis technological libraries as part of the
information content industry. The issues dealing with the information
contents of CD-ROM and Internet products provided by technical
university libraries are also discussed.

Paternostro (1998)\textsuperscript{16} in his article entitled “The Red Chip Review”
reviewed the Web version of the Red Chip Review, a print investment
newsletter and Web site devoted to tracking the rising and falling fortunes
of about 300 small-cap stocks (securities of smaller companies).
Subscribers may choose from Focus Reports, the Current Issue, Report
Archives, News Updates, News Archives, and Specialty Report Archives.
The service also included analysis of current economic trends and issues.
The Red Chip Review is a robust and unique resource for serious investors
and would also be a useful addition to the traditional information products held by university libraries.

Uhlinger, E S; Murray, C J (1998) in their article entitled “Coastal data and information resource at the University of Rhode Island” He described the ‘digital center’ and online database, containing coastal data and information, produced by Rhode Island University. A coastal Web site was created to provide a point of entry to the distributed data and information system.

Breeding, (1999) in his article entitled “Does the Web spell doom for CD and DVD?” commented on the fact that, although many information products have migrated away from CD-ROM to World Wide Web, this has not meant the total demise of CD-ROM. Based on the experience of Vanderbilt University, Tennessee, the author concludes that CD-ROMs and DVD-ROMs will still have an important part to play in the future.

Celik S. (1999) presented a paper at the Turkish Librarians' Association's 50th anniversary symposium: Adventure of information, its past, present and future, November 1999. It presented the results of a survey of personnel management in Turkish university libraries. The libraries were found to be inadequate in the provision of efficient, high quality, speedy and economical information services. Further, he recommended that emphasis should be put on improved personnel management in order to that libraries reach the desired level of productivity.
Coult, G, et al; (1999)\textsuperscript{20} in their article entitled “Managing electronic products and services” commented on Contribution to an issue devoted in part to Managing electronic products and services. Reports stated that 4 case studies involving libraries within the UK law firms Gouldens, Field Fisher Waterhouse, Mishcon de Reya and Beachcroft Wansbroughs, all of which are concerned with developing and managing the electronic product service.

Fleming, S. and Wilson, P. (1999)\textsuperscript{21} discussed that contribution to an issue devoted in part to Managing electronic products and services. Today computer users are turning to the Internet to obtain medical advice. Growth of the Internet and increasing access to and familiarity with computers are heralding a shift in the traditional patient-doctor relationship. They also discussed virtual hospitals and electronic prescriptions and considered the advantages and disadvantages of these online and electronic services over conventional healthcare information on the Internet for credibility, reliability and honesty.

McLeish, S., (1999)\textsuperscript{22} discussed Managing electronic products and services. The rapid expansion of Internet use following the development of the World Wide Web shows its success as an interface and today the most popular sites are taking the ideas of uniformity and customizability a stage further: portals to the information available on the Internet. He discussed portals and described the Hybrid Electronic Access and Delivery in the Library Networked Environment (Headline) one of the 5 Hybrid Libraries
projects funded under the Electronic Libraries Phase 3 programme of the UK Higher Education Joint Information Systems Committee, and its use of portal technology.

Leonard, C. and O'Neill, J., (1999) have said that the demand for electronic products and desktop access in the past 5-8 years, information providers have had to reorganize their operations to manage and produce digital versions of their publications. In building the web environments, Institute for Scientific Information (ISI) had to establish new or modify existing processes for conceiving, planning, developing and testing a product prior to commercial release. The context in which this process was developed mirrors the changes at large in the publishing and information industries during the period between 1993 and today.

Tardon, E. (1999) concentrated on the effects of applying KM in university libraries. Special attention is given to developing new strategic directions and redesigning technical processes and information flows in order to reposition academic libraries within the galaxy of current information services.

Vanti, N.(1999) described the 5S programme conceived in Japan in the 1960s and a participatory style of management and the application of both the 5S programme and a participatory style of management in the Library of the Faculty of Veterinary Science of the Federal University of Rio Grande do Sul in Brazil. He attempted to demonstrate that it was
possible, in a climate of dwindling resources, to improve services to users by creating an environment of trust and involvement in the workplace.

Varela, A. R. (1999) discussed data characteristics and needs of the user community and collection evaluation (quantitative and qualitative, according to format). The adequacy of the collection to potential user needs and institutional objectives can then be established, and policies on selection/acquisition, weeding and conservation elaborated.

Brimah, A. (2000) examined that collection development at the Institute of Public Administration and Management (IPAM) Library, University of Sierra Leone. He offered some historical background to the IPAM and its library and look at key collection development issues. Further, he discussed selection, acquisition and budget allocation and identifies collection development problems faced by the library.

Dabas, K. D. and Sing, S. (2000) reported that the findings of a study conducted to measure the application of Total Quality Management (TQM) in the university libraries of the Punjab in India. Defines TQM and lists the libraries that form part of the study. It provided quantitative statistics for the 4 university libraries focusing on the allocation of the library budget, use and growth of the university libraries, documents added in 1998-9, costs incurred and users views of quality in university libraries.

Davarpanah, M.R. (2000) made a survey of university libraries and medical libraries with emphasis on periodicals. The author also highlighted the importance given to audio-visual materials, manuscripts
and rare books. He also considered how the advent of library automation will affect the future of library services in Iran.

Ifidon, B. I. (2000) in his article entitled “Quick service collection in university libraries: management and problems” discussed the method of introduction of a quick service collection and typical examples of this type of service, in Delta State University and Edo State University, Nigeria. Their management and the problems arising from them are also considered together with some possible solutions.

Ifidon, B. I. (2000) debated during the Virtual Conference on Global Information in Africa. He presented the viewpoint of a library manager who has experienced personnel management in libraries in both urban and rural environments. Asserts that staff in a rural setting behave in an extraordinary way, due to a 'Son of the soil' syndrome, the concept of godfathers, the neglect of rural areas in terms of development, poor economic conditions, and a lack of understanding of personnel management on the part of some heads of department. The resolution of this problem is the single greatest task for the library manager.

Mangrum, Rikki (1990) in his article entitled “Networking information products on campus: local area network and campus broadband” discussed that a public services local area network (LAN) avoids many of the problems of mainframe networks because it can be effectively closed to the outside world, costs far less to create, and requires less cooperation. The experimental public services network at the North
Carolina University at Chapel Hill Library serves as a context for a discussion of issues relating to the acquisition and use of electronic Information services by academic libraries.

**Tardon, E. (2000)** discussed that the development of the 'new economy', dependent on knowledge for productivity and competitiveness, has impact on university libraries, now competing in the commercial market as product and service providers. The electronic university library needs new linguistic tools for information retrieval, new information architecture and new conceptual tools to underpin its management model. Its role is to define and manage interchangeable scenarios for facilitating the creation, dissemination and use of knowledge, taking into account the matrix of knowledge relations in the academic environment between content, producers (scholars, researchers) and users (students).

**Loghry, P. A. and Shannon, A. W., (2000)** discussed that the advent of **electronic products** has made the selection and acquisition of library materials more complex. Nevada University at Reno has responded by streamlining the acquisition process using forms to track the procedure from first vendor contact through purchase, implementation and eventual promotion of the product. Inclusion of necessary selection criteria has helped bibliographers to ask the pertinent questions when considering purchase, and the checklist of actions to be taken has ensured that all appropriate library departments are notified during the acquisition process.
Cavaleri, P. (2001) pointed that exploration of the trend for libraries to generate personalized online reference services as a response to the innovative information products now being offered on the Internet by commercial and other competitors. Citing specific projects, described six evolving typologies of library service: Reference via e-mail; Virtual Reference Desk; Real-Time Digital Reference Services; Personalized portals; online applications for Distance Learning Units; and Complex Projects. The survey also covers the basic characteristics of the digital environment; an analysis of the user-base in academic libraries; statistics on Internet use worldwide; and changes in readers' attitudes to library reference services.

Plappert, R. (2001) in his article entitled “User survey at the University Library of Erlangen-Nuremberg within the framework of the work of the central department of quality management” The quality management department was involved in carrying out the survey of 2000/2001. Questions covered the individual users answering their use of the library and its services, their evaluation of services offered and their expectations of the library. The survey provided information important for future planning and revealed a clear connection between the deficiencies mentioned and the library's financial shortages.

Roitberg, N. (2001) opined that the electronic library is growing rapidly in parallel to the traditional library. The high rate of growth is dictated by factors outside the library. The library's administration is under
great pressure to achieve goals much faster than planned, to adopt new
technologies, to compete with others in the information field and to be able
to lead in this area. This process added an enormous burden on the library
staff and budgets. The library should plan and update its strategic plan and
change priorities frequently. As a result the work flow should be changed
and librarians should adopt new and additional duties. Library management
at present and in the coming years needs a different approach in which
flexibility, team work and enthusiasm are likely to be the keys to success.

Suikkanen, E. (2001)\textsuperscript{38} in his article entitled “Information
management skills, web teaching and university libraries” Web teaching is
increasing in Finnish universities. One sign of this is the establishment of
the Finnish Virtual University in January 2001. There is an increased
growth in electronic materials. He described a project on the present state
of web teaching of information management skills in Finnish university
libraries. There are 20 universities in Finland, each of which has a library.
14 of these libraries offer teaching in information management skills on
their web pages. 8 university libraries offered web teaching in information
management skills. All these university libraries offered very similar
courses in information management skills on the net.

Badu, E. E. (2002)\textsuperscript{39} in his article entitled “Macro environmental
analysis for strategic management: stakeholders' view of Ghana's
university libraries.” Assesses some political, cultural, technological and
international issues believed to affect strategic management in Ghanaian
university libraries. The external environment of Ghana is perceived by some major stakeholders of the libraries to be highly uncertain. The macro environmental analysis of the strategic positions of the libraries is developed through the identification of opportunities and threats in the political and economic environments.

**Badu, E. E. (2002)**\(^{40}\) aimed to provoke discussion on the concept of team management in the context of African university libraries, with particular reference to Ghana. He also considered the influence of the historical roots of the universities and described the aspects of the socio cultural environment, which influence the operating environment.

**Chang, C.-B. (2002)**\(^{41}\) explained that Total Quality Management (TQM) is a prevailing response to the bottleneck of management in an organization. It might offer an alternative solution while libraries are faced with difficulties, such as budget cuts, the downsizing of human resources, and the challenge of information brokers. He introduced the theory and content of TQM and discussed its application in the management of university libraries.

**Francis, S. (2002)**\(^{42}\) in the case study he described the changes brought about by the project, which included the creation of one of the first strategic development plans produced by a Russian university library and a considerable change in the attitudes of Tomsk State University Library staff.
McManus D.; Loughridge, B. (2002)\textsuperscript{43} in their articles they reviewed that some of the reasons why knowledge management is apparently so unpopular in universities. Corporate culture and organizational structure are found to be major factors affecting perceptions of the relevance of knowledge management programmes and projects.

Ishii, Y. (2002)\textsuperscript{44} in his article entitled “Electronic journal management as a source of revenue from e-mail account registrants: example of Tokyo Medical and Dental University Library” Tokyo Medical and Dental University) Library, Japan, began subscribing to 41 core electronic journals in 2001 but following sharp price rises in Elsevier journals decided it could only afford more extensive e-journal subscriptions by distributing costs to users. Subscriptions to 1,600 e-journals from various publishers were established costing 11.3 million yen. A webpage was designed to promote access. Introduction of the 'electronic journal tax' required good cooperation with users and brought current library issues into focus.

Salvesen, H. (2002)\textsuperscript{45} outlined the socio-cultural change in higher education in Western countries where universities have become mass education factories and are increasingly run on marketing lines. He set out Norwegian government policy on higher education aimed at achieving quality reform and analyses the challenges for libraries created by the reform, among which are the need to become study centers for project work, offer networked access for distance learning and ensure good user...
training in multimedia sources and critical assessment of information retrieved. In addition to its reference and documentation functions, the academic library will be a component of a learning centre and involved in all information processing for students and teachers and in the production of teaching aids.

Valls, A. and others (2002)\textsuperscript{46} described the basic concepts of knowledge management and proposes the application of this system in libraries in a society where the demand for professionals that understand information and knowledge management is increasing. It gave an account of the experience of the Library Rector of the Polytechnic University of Catalonia, giving examples of the knowledge management programme including the use of yellow pages, an intranet, good practices and learning groups.

Belefant-Miller, H; King, D W (2003)\textsuperscript{47} in their article entitled “A profile of faculty reading and information-use behaviors on the cusp of the electronic age” analyzed the demographic portion of a library use survey given to faculty and staff of the University of Tennessee at Knoxville (UTK), USA, to obtain a profile of information-related activities carried out by university faculty. Journal articles were the predominant document type that faculty both read and authored. Faculty averaged 4.2 journal subscriptions per person, of which 84% were paid for personally. 25% of the faculty had obtained some funds for information products and of those funded, the median amount provided was $500. Faculty spent 24 minutes
per day using e-mail and 78 minutes per week using non-email computer networks. Faculty reported publishing 3.0 journal articles per year and 31% of the faculty had won an award for professional contributions in the previous 2 years.

Dreier, Thomas and Nolte, George. (2003) discussed that Digital information technologies have led to a dramatic change in the production, reproduction and dissemination of information products. The legal framework for this change is largely provided by copyright. However, it is still rather uncertain how copyright should react to the technological and corresponding economic changes. Today, due to the challenges brought forth by digital and networked information technologies, In view of the rapidly growing availability of information, agents and navigators gain importance, which search for and open up access to the information available. Furthermore, digital information technologies facilitate the supply of new information services which are based on existing information products. An added-value may consist in a follow-on development or simply in the selection or combination of pre-existing information according to the users individual information needs. It is still not clear to what extent copyright will allow such value-added services in a digital environment. Difficulties exist not only with regard to the application of new legal rules, but also with regard to the question how new forms of digital exploitation of works are subject to copyright.
Loxton, L. (2003) outlined that Reviews the commercial success of Inspec (http://www.iee.org/publish Inspec), the abstracting and indexing services publishing arm of the UK's Institution of Electrical Engineers, from its beginnings in 1898 to the present. Inspec has succeeded in managing the transition from print-based to electronic information to the extent that only 10 per cent of customers are currently print-based and 90 per cent are subscribers to different electronic products. The company has also been successful in transforming itself into global business.

Pacios, Ana R. (2003) in his article entitled “Management-related information on Spanish university library Web pages.” A typological analysis of the management-related documents that Spanish university libraries show on their Web sites is provided. Further, he discussed about the structure and contents of the Web pages; provided some analysis on the location of the documents in the pages; and presented a view of document changes after 1 year, taking into account their presence and currency.

Feria, Lourdes B; Machuca, Paulina (2004) in their article entitled “The digital library of Iberoamerica and the Caribbean: humanizing technological resources” discussed that in the last two decades, the University of Colima has worked out a very interesting project for information technologies development through its Coordination for Information Technologies (CIT) program. This has provided years of experience in the application of technologies for the academic community.
After its designation as a UNESCO Regional Center, our university developed a very ambitious education and research plan that was submitted to one of UNESCO's educational programs. This project was approved as the "UNESCO Chair on New Information Technologies," and it started working successfully with the "Diploma Course on Digital Libraries" 2 years ago. The Diploma Course is part of the action taken toward the creation of a Great Iberoamerican and the Caribbean Digital Library. Today 144 trainers from 36 national libraries in Latin America and the Caribbean state members are receiving training courses based on the UNESCO methodology, which is comprised of the registration of digital objects, adherence to standards for audio and video digitization, and development of international open-source software for information management.

Ito, Yoshito, (2004) discussed the incorporation of Japanese National Universities will introduce a new era. In libraries, the balance must be maintained between cooperation and competition. Digital reference services similar to the American Question Point may be appropriate. Libraries already cooperate in electronic journal purchasing consortia but must address issues of walk-in users. International cooperation in areas such as open-access publishing is also important. Closer links with public libraries must be developed

Jange, and Sami, (2004) in their article entitled” Management of internet service in a university environment” commented that Majority of
the users of the University Libraries are aware of the developments in Internet, WWW. etc. They able to browse though the various search engines to find their required information. This has made the library staff to be more responsible finding the right information to their readers. They need to keep themselves abreast of the developments in the field. The paper discussed the challenges to be faced while managing the Internet.

**Konno, Minoru (2004)** outlined on the use of MetaLib/SFX system to provide one stop shop access to 2,298 electronic journals. The system uses the OpenURL system and the SFX resolved enables users to access the most appropriate copy of an item, if multiple copies are available. Some publishers provide article-level linking, while others link only at issue level. Users can access journals directly from a PubMed search with the SFX revolver.

**Kurosawa, Kimito, (2004)** pointed out that International Christian University Library, Japan, introduced an automated storage and retrieval system, the first in Japan, for 200,000 items from its stock of 600,000 books. The planning, development and installation of the system, which is linked to the library's Web OPAC, is described. Books are stored in containers arranged by size. Size has to be measured accurately and analysis of stock size is an important element in installing such systems.

**Nyamboga, and Onus, (2004)** in their article entitled “Digitizing a research library: Edgerton University – Kenya” described that Academic libraries have always aimed to fulfill their research objectives and
ambitions by using any means at their disposal, particularly in these times when there is shift from traditional library services to digital library services, so long as they can satisfy their clientele. The attempt to provide digital library services is exemplified by the J. D. Rockefeller Research Library at Edgerton University, Kenya. This paper discussed digital research libraries, reasons, advantages and disadvantages of digitization. It also provided the development of the research library studied and types of clients who are beneficiaries of the services. It offered a general overview of both the information resources and services given.

Ultimately, it concluded that the essence of the digital research library is to cater for the information needs of researchers in specific fields of specialization.

Thompson, Laurie L., (2004) commented that Electronic products and their accompanying licenses have become the norm in most health sciences libraries and consume large amounts of a library's budget. Careful thought and advance planning will result in products and agreements that will best serve the library and its users. Using teamwork for contract analysis, careful identification of the library's users and their use of the product and efficient communication with legal counsel will ease the task of evaluating and negotiating the license. This article offers strategies for effectively managing electronic licenses.

Manuel, Sue (2005) in his article entitled “Weblog use in information and enquiries service provision” made a Pilote that the use of a
weblog in 2003. The project set out to determine whether weblogs would assist in information management and organization. It was thought that the provision of a central repository of information with clear presentation and keyword search facility would save staff time and give a more professional impression when dealing with user’s enquiries and also foster a culture for information sharing amongst the team. Describes how the Information Enquiry Team set about the process and concludes that the weblog has been a major success. Its use is increasing steadily, making information sharing a much more open and accessible process.

3.3. STUDIES IN INDIA

Bhooshan Lal (1986) conducted a study on the relationship between need fulfillment and job performance. The sample for the study was drawn from academic, special and public libraries in India. A questionnaire was administered to 400 library personnel out of who 79.5 responded. The study revealed that Indian Library system has been relatively successful in satisfying the security, social and esteem needs. In the Indian context security is an accepted fact to everybody who secured a job. The study concluded that libraries attempting to motivate increased productivity should be careful to relate to the needs of workers so that energy source of workers’ behaviour is fully tapped.

Shaw (1986) conducted a study on the attitude of staff towards automation at the Indian University Library. Two surveys are conducted before automation and one year after automation. Reactions to automation
were positive in both surveys. By the time second survey was conducted most of the respondents, expressed the view that automation expertise the various tasks in the library and would lead to over all improvement in the quality of library services.

**Gupta, (1997)** stated that the library automation is one of the key activities in converting library service tools and practices to electronic based media. The information requirements of the users and its impact on libraries for using information technology are also discussed. The area of automation in libraries is thoroughly studied. An attempt was made to state the financial requirements necessary for hardware and software. The importance of information super highways, Internet facilities, digital libraries and retrieval databases on tapes or CD’s are also discussed.

**Jain, V (1998)** discussed in his paper presented at the 5th National Convention for Automation of Libraries in Education and Research (CALIBER-98), at Bhubaneswar, 4-5 March 1998. He described the hardware and software facilities of Banaras Hindu University and the developments due to the INFLIBNET programme

**Pathak, N, (1999)** in his article entitled “Necessity of Internet to university library and information services in North East (NE) Region” discussed in his Paper presented at CALIBER 99; Proceedings of the Sixth National Convention for Automation of Libraries in Education and Research, Nagapur, India, 18-20 February 1999. He described the experiences of the K. K. Handiqui Library, Gauhati University, India, in
installing and using the Internet and related services. Set against the overall situation in the North East Region of India. Services and tools used include electronic mail, Usenet, Gopher, file transfer protocol (FTP) and Telnet.

Sangam and Byadagi (1999) studied the impact of information technology on library services and products in which a reference was made regarding development of the professional skills. The importance of Information technology in library and information centers was thoroughly discussed while discussing the requirements of the IT. They emphasized the need for manpower development and motivation of man power. The morale of the library staff will be increased, if the facilities of IT are applied in library and information centers. They observed that most of the libraries would react negatively to any new system, particularly library automation. Therefore, the attitudes in the library staff should be re-examined and suitable measures should be taken to attract the library staff towards automation.

Ramana, P Venkata; Chandrasekhar Rao, V. (2003) in their article entitled “Use of information technology in Central University Libraries of India” discussed that the Central University (CU) Libraries in India are currently at various stages of advancement in the use of information technology (IT). This paper presents the results of a research study conducted to survey the use of IT in CU libraries. It describes libraries collection, current periodicals, library staff, users, budget, and infrastructural facilities of CU libraries. It discusses planning approaches
adopted for IT implementation, objectives of library automation, persons involved in library automation planning, steps taken for library automation implementation, factors considered in selecting library automation software, and constraints faced in library automation. It covers computers and software packages used, computerized library operations, development of databases, bibliographic standards used, computerized information services, level of participation in networks and computerized facilities offered to users, etc. The results Summarized in this paper reflect the current trends and future plans relating to the use of IT in CU libraries.

Arora, (2004) in his article entitled” Network-enabled digitized collection at the Central Library, IIT, Delhi. He outlined the emergence of the Internet, particularly the World Wide Web (WWW), as a new medium of information delivery, coupled with the availability of powerful hardware, software and networking technology, triggered large-scale commercial and non-commercial digitization programmes the world over. During the past decade, great progress has been made in both theoretical and practical research in the digital library. Besides, acquiring and buying access to digital collections, academic and research libraries are exerting efforts to initiate digital library projects in their respective institutions so as to build their own digital collections. Moreover, proliferation of network-enabled electronic information products is exerting ever-increasing pressure on traditional libraries, which, in turn, are committing larger portions of their budgetary allocation to either procuring or accessing web-
based full-text search services, CD-ROM products, Online databases, multimedia products, and so forth. The increasing commitment for building up network-enabled digitized collections at the Central Library, IIT Delhi coincided with the installation of a fiber optics based campus LAN connected to a 2 MBps VSNL Radio Link enabling faster access to the Internet for the academic community of the Institute. The availability of high-speed Internet connection has led to the launching of a number of sponsored and unsponsored projects for building network-enabled digitized collections within the framework of the traditional library and information services at the Central Library, IIT Delhi. The Library has adopted a multi-pronged strategy to embark upon the digital world. The article outlined various constituents that contribute to the making of a digital library at the Central Library, IIT Delhi.

Kumbar, B D; Ramesh. (2004) in their article entitled “Performance evaluation of Karnataka State University Library resources and services: a librarians' approach” opined that the Library service is the supreme activity to attract the attention of the user community. It is more so in the case of a university library. Looking at the commitment of the university library to promote the cause of healthy higher education, it is essential on the part of the library professionals to evaluate and assess the usability of the library resources in the light of the vast amount of investment made in acquiring the information resources and the cost of the
manpower in managing the library activity. This paper reveals one such attempt with reference to the university libraries in the state of Karnataka which is a part of Independent India.

Varalakshmi, R S R. (2004) in her article entitled “Collection management in digital environment: policy statement for University libraries in India” analyzed the present collection development procedures under the impact of electronic information environment. The emergence of new media supersedes the well-established social network of print and publication. The digital electronic materials offer reduced Production costs and more sophisticated method of use. The interest of the university libraries in India is to strike a balance between print and electronic resources. The article reviews various solutions that have been proposed to solve the issues of collection management in India and abroad. Suggests policies to be considered for effective planning of collection management in the digital environment.

Pillai, Mini G; Suku, J (2005) in their article entitled “Perspectives on... automation of university libraries in Kerala: status, problems and prospects” discussed the present scenario of automation activities of university libraries in Kerala. The survey findings mainly cover various aspects of library automation such as information technology infrastructure, in-house activities, information services and their usage, manpower development, and budget. The paper briefly describes the role of INFLIBNET Centre in accelerating the automation activities of
university libraries, especially in the context of the recently introduced UGC-Info net programmed. The problems encountered in this process are identified and possible suggestions are stated.

Chakravorti, and, Singh. (2005)\(^1\) in their article entitled “E-resources for Indian universities: new initiatives” narrated that Academic Libraries in India are facing the problem of shrinking/static budgets and simultaneous exponential rise in journal prices. The need of the hour is to find a pragmatic solution to this problem. Something substantial has to be done in order to facilitate access to Scholarly resources to research scholars and faculties. UGC-INFONET and INDEST-Consortium are two major initiatives that have come to the Rescue of academic libraries so that they can cater to the needs of academia depending upon them. These revolutionary steps are providing scholarly resources including peer reviewed journals, databases, abstracts, proceedings, etc. These efforts will definitely boost the higher education system in our country.

Chandran, D. (2007)\(^2\) discussed in his article entitled “Use of INTERNET in Libraries” that infusion of technologies into creative process leads to new technology, which enters into creative spheres at varying speed over different routs. Today it seems that each new advance in technology centre on new ways to store, retrieve and transmit information. The PC could now deliver all types of information i.e. text, still images, graphics, audio etc. there has been a big change in the way information is accessed due to telecommunication network. This
phenomenon has come in a big way for retrieval of enormous output of information combining the concepts of time, space and precision. He concluded that the use of Internet provides a much enhanced interface between the user and the information. By use of fixed or moving images, combined with text and voice, information can be provided in forms which are more easily interpretable by the recipient and also felt that Internet, through its tools and services really makes easy to access the global information at a high speed, crossing the barriers to communications.

The review of literature indicates that no significant studies have been made on the use of information products and services either in the Western countries or in India. Hence, it is felt that the present study is significant contribution in the field of library and information science filling up a major gap in this area.
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