**Literature Review**

Since the 1940s the problem of information storage and retrieval has attracted increasing attention. It is simply stated: we have vast amounts of information to which accurate and speedy access is becoming ever more difficult. One effect of this is that relevant information gets ignored since it is never uncovered, which in turn leads to much duplication of work and effort. With the advent of computers, a great deal of thought has been given to using them to provide rapid and intelligent retrieval systems. In libraries, many of which certainly have an information storage and retrieval problem, some of the more mundane tasks, such as cataloguing and general administration, have successfully been taken over by computers. However, the problem of effective retrieval remains largely unsolved.

With the rapid and increasing growth of the World Wide Web (WWW) and the abundance of documents and different form of information available on it, the need for good IR systems has come to the forefront of everyone attention.

Vickery B.C (1970), examined the main contemporary problems of information transfer, more particularly searcher are faced by sciences and technology and also traditional tools for literature search, its also examine the information system as a whole.\(^i\)

Oddy, R. N (1977) introduced a new method of information retrieval by man-machine interaction. The dialogue supported has more symmetry than most interactive computer systems in that the machine forms an image (rather as a man does) of the view of the human enquirer, without requiring him to ask a precise question, and responds with references according to its image. Initial tests with a prototype program indicate that a performance equal to that obtainable from a more conventional on-line retrieval system is possible without obliging the user to formulate his query.\(^ii\)

Fenichel, Coral Hansen (1979). This project attempted to examine the various information retrieval (IR) techniques in use today. Over the years many different TR techniques have been suggested, from Boolean modeling to Fuzzy set theory or
probabilistic modeling to natural networks. Some of these techniques are used more than others; some are better than others for specific task.iii

Ravichandra Rao, I.K. (1992), discussed the characteristics and functional approaches to an IR system and issues pertaining to design, development and implementation of IR systems in the context of India.iv

Gopinath, M.A (1992) identified the analogical approaches in both the systems and finds global ontological approach to organization of knowledge and provided cognitive basis among users of knowledge.v

Shah, G. A, Desai, A-T. and Nagarkar, S.A.. (1992), examined the search strategies should be formulated with a view to enhance capabilities of a system in retrieval of the most relevant information with a high degree of precision. vi

Raman, T Mythili (1992), explained pre-requisite before search operation begins in the process of retrieval. Described steps involved in search formulation, suggest certain retrieval approaches and mentions causes for search failure. vii

Chatterjee, Amitabh (1992), brought out the difference between natural language and an IR language and the attributes of IR languages in the light of those differences. Emphasized the role of controlled vocabulary in IR and made a comparative study of the various types of controlled vocabularies. Discussed also the measure to gauge the effectiveness of a controlled vocabulary. viii

Belkin, Nicholas J. and Croft, W, Bruce (1992), presented information filtering system are designed for unstructured or semi structured data, as opposed to database applications, which use very structured data. The systems also deal primarily with textual information, but they may also deal primarily with textual information, but they may also entail images, voice, video or other data types that are part of multimedia information system. Information filtering systems also involve a large amount of data and streams of incoming data, whether broadcast from a remote source or sent directly by other sources. Filtering is based on descriptions of individual or group information preferences, or
profiles that typically represent long-term interest. Filtering also implies removal of data from an income stream rather than finding data in stream; users see only the data that is extracted.\textsuperscript{ix}

Dominich, Sandra (1994), presented the existing information retrieval model there are three different ways documents are represented for retrieval purposes vector of weights, collection of sentences and artificial neurons. Accordingly, retrieval depends on a similarity function, or means an inference, or is a spreading of activation. Relevancy is considered to be a critical modeling parameter which is either a prior or it is not treated at all. Assuming that relevancy may equally be an emergent entity, thus not requiring any prior modeling.\textsuperscript{x}

Robson, David and others (1996), elaborated the idea of development of online bibliographic databases from their beginnings in the early 1970s to the present. Warned that most academic journal publishers have not changed their structures and overheads and that they must now co-operate strategically with agents and libraries if they are not to be made redundant by the virtual library.\textsuperscript{xi}

Shukla, K. K. (1996) described that the efficient retrieval of information from the vast sea of distributed databases over the internet has assumed great importance with the convergence of computer and communication technologies. This paper presented some state-of-the-art techniques for online informational retrieval over the information superhighway. It further advocated the application of Artificial Intelligence (AI) search techniques to locate and disseminate information an effective manner. Content based image retrieval can also benefit from AI techniques by utilizing evolutionary programming for feature extraction and object recognition.\textsuperscript{xii}

Subba S. Rao, (1997), outlined information access through the right mixture of technologies, namely online and CD-ROM. While mentioning the electronic databases, electronic information path and generations of online services.\textsuperscript{xiii}
Kowalski, Gerald J. (1997), provided a theoretical and practical explanation of the latest advancements in information retrieval and their application to existing systems. It takes system approach, discussing all aspects of an Information Retrieval System. The importance of the Internet and its associated hypertext-linked structure is put into perspective as a new type of information retrieval data structure. The total system approach also includes discussion of the human interface and the importance of information visualization for identification of relevant information. The theoretical metrics used to describe information systems are expanded to discuss their practical application in the uncontrolled environment of real world systems.xiv

Odini, Cephas (1997), reported on a comparative study carried out at the University of Sheffield to compare the performance of some manual and online sources in the retrieval of record in the subject of technology. Compared the performance of two related manual indexes with those of three related online databases. Considered all five sources with specific-reference to relative recall and precision. While online searches have some considerable advantages over manual, the manual sources still have some qualities which render them available. Emphasizes the selection of databases on the basis of compromise between high recall and high precision, and ultimately between both of these and the cost.xv

Rowley (1999) identified three generation of online searching. The first generation of online searching from the beginning to 1981, was characterizes by dumb terminal, slow transmission speeds, and mostly bibliographic databases. The second generation of online searching which lasted through the 1980s, was characterized by PCs as workstation, medium transmission speed, bibliographic as well as full-text databases and interfaces directed at the end users. The third generation, which started as the beginning of the 1990s, is characterized by multimedia PCs, higher transmission speeds, bibliographic as well as full text databases, and improved users interface, help and tutorial facilities.xvi
Mercado, Heidi (1999), described online database searching was done solely by librarians and present state of online database searching by the library users in academic libraries. Suggests, the library users need to know how to search, but they also need to learn critical thinking skills for database and keyword selection.\textsuperscript{xvii}

Romano, Nicholas C. and Roussinov, Dmitri (1999) observed that information retrieval (IR) system user experience reveal a strong desire for collaborative capabilities are rarely, and then only in a limited fashion, supported by current searching and visualization tools. Equally interesting is the fact that observations of user experiences with Group Support Systems (GSS) reveal that although access to external information and the ability to search for relevant material is often vital to the progress of GSS sessions, integrated support for collaborative searching and visualization of result is lacking in GSS system. After reviewing both user experience described in IR and GSS literature and observing and interviewing users of existing IR and GSS commercial and prototype systems, the authors conclude that there is an obvious demand for systems supporting multi-user IR. It is surprising to the authors that very little attention has been made to the common ground shared by these to important research domains. With this the paper described that how user experienced with IR and GSS system, which has shed light on a promising new area of collaborative Information Retrieval Environment (CIRE). Finally this paper presents theory-developed from initial user experience with the prototype and describes plans to test the efficacy of this new paradigm empirically through controlled experimentation.\textsuperscript{xviii}

Labrie, Ryan C. (2003), investigated a multi-method approach. First, an empirical examination of keyword usage from a representative IS research journal is performed to validate the need for the research. Secondly, a case study underway with the Intel corporation, on their satisfaction with the quality of their information retrieval capabilities. Lastly, a laboratory experiment is proposed to test the informational retrieval accuracy of two types of knowledge management system infrastructure - traditional relational based and multidimensional - based LKM.\textsuperscript{xix}
Robins, David (2000), the paper provided an introduction to interactive information retrieval - the study of human interaction with information retrieval systems. Interactive Information retrieval may be contrasted with the "system-centered" view of information retrieval in which changes to information retrieval system variables are manipulated in isolation from users in laboratory situations. The paper elucidated current models of interactive information retrieval, namely, the episodic model, the stratified model, the interactive feedback and search process model, and the global model of polyrepresentation.

Landoni, Monica and Bell, Steven (2000), highlighted the importance of scientifically sounded approach to search engines evaluation. Nowadays there is a flourishing literature which describes various attempts at conducting such evaluation by following all sort to approaches, but very often only the final result are published with little, if any, information about the methodology and the procedures adopted. These various experiments have been critically investigated and catalogued according to their scientific foundation by Hell in flu-attempt they provide a valuable framework for future studies in this area. This paper reconsidered that some of Bell's ideas in the light of the crisis of classic evaluation techniques for information retrieval and tries to envisage some from of collaboration between the IR and Web communities in order to design a better and more consistent platform for the evaluation of tools for interactive information retrieval.

Othman, Roslina and Halim, Nor Sahlawaty (2004), Studied were to identify the retrieval features for online databases; difficulties faced by users; and retrieval features expected by users. A total of 25 databases were surveyed and 40 users were interviewed after the training sessions. Common retrieval features included Boolean operators, phrase searching, match of exact words or phrases, field specific and limit fields searches, truncation, and wildcard. Even though features are offered in many systems, their interpretation and implementation are different. Unique features included lateral searching, density and frequency of terms, reference link, and searching via table of
content. The expected features included relevance feedback and term weighting other than those already offered by ACM Digital Library and IEEE Xplore. Such expectations were influenced by the users’ background in ICT. Difficulties included application of the retrieval features in searching. Database providers must include the expected features; synonyms linked to terms in the thesaurus, and extensive search examples.

Xie, Hong Iris (2004), evaluated two different types of online information retrieval systems. It also compares four types of Web search engines: directories, search engines, meta-search engines, and specialized search engines. The results shows that three elements are essential to users in the evaluation of online IR systems: interface design, system performance and collection coverage. While participants preferred the ease of use and intuitive interfaces of web search engines, they also liked the credible and useful information offered by online databases. Based on the discussion of advantages and problems of online databases and Web search engines, implications of for the design of IR systems are further suggested.

Broughton, Vanda (2006), presented an examination of various subject access tools intended for retrieval of both print and digital materials to determine whether they exhibit features of faceted systems. The study finds that faceted systems are now very common, with a major increase in their use over the last 15 years. Most US subject indexing tools (classifications, subject heading lists and thesauri) now demonstrate features of facet analysis to a greater or lesser degree. This article provides an overview of an important conceptual approach to information retrieval, and compares different understandings and applications of this methodology.

Goth, Julia (2005) investigated that in IR, the return answer (called hits) are different in their relevance values for a given query; this represent important information for the users. A new concept called retrieval 'categoricity' (i.e. how categorical the hits are) was introduce in this dissertation, it means the spreading degree of the answers' relevance value. Categoricity can be varied in the traditional VSM (Vector Space Model) model, but it is costly process. The categoricity - from the user prospective — is an
important property of the system, thus is useful to develop an efficient method to vary the categoricity. In this dissertation author try to introduced a new efficient way to vary retrieval categoricity using a new information retrieval techniques based on hyperbolic geometry.xxv

Siffiqui, Tanveer J (2006) demonstrated that by improving document/query representation and by incorporating more information from within the document and query into the retrieval process, the effectiveness of the information retrieval is enhanced.xxvi

Bhavanani, Suresh K., Drabenstott, Karen and Athota, Sashi M. (2001) addressed the efficient use of information retrieval (IR) system such as search engines and library catalogues, its present a unified framework of strategies as for information retrieval strategies that are useful across many IR systems, and can be used to identify key missing functionality in IR systems, and to design training approaches that lead to the efficient retrieval of information.xxvii

Shoaib, Muhammad and Shah, Abad Ali (2006), described that effective retrieval requires an efficient indexing technique. With the availability of the volume of information, it has become necessary to capture the semantic of the document, which is almost impossible with the existing techniques. Moreover in the existing techniques the weights once assign are remains unchangeable throughout the cycle. In this paper an indexing techniques assignment using Rhetorical Structure Theory with dynamic weight assignment techniques has been presented- The nodes of Rhetorical Parsing tree contain relations and text spans that can be used for indexing by indexer. The results are promising for different texts. Enhancing the techniques of NPL can improve the proposed algorithm to accommodate more relations and huge documents.xxviii

Zabed Ahmed, S.M., McKnight, Cliff and Oppenheim, Charles (2006) Presented the results of a heuristic evaluation of the Web of Science interface conducted independently by 3 human factors experts and then combined and discussed. Findings showed that the key strength of the interface then current was consistency in the
conventions used, screen layouts, minimal use of colours, graphics and icons and that the main weakness lay in functionality, e.g., searching, navigation and online help. The results demonstrate the effectiveness of a heuristic approach to evaluating user interfaces to online retrieval systems.xxix

Multimedia Material

The increased availability of multimedia material is accompanied by a need for indexing techniques that support effective retrieval. This calls for research on multimedia retrieval techniques and empirical similes of why, when and how people search for multimedia material.

Sievert, M.C. and Andrews, M.J., (1991). Described irrespective of media, the traditional means of enabling retrieval from large repositories is intellectual indexing. In intellectual indexing human indexers use controlled vocabularies or natural language to express the content and subject of texts, images, sound and video. This has led to the development and application of numerous indexing schemes, but it is at the same time well documented that different indexers tend to index the same pieces of material rather differently.xxx

Anderson, J.D. and Pe'rez-Carballo, J., (2001) the retrieval performance resulting from intellectual indexing has remained a challenging baseline for automatic indexing. For non-text material, automatic indexing is a rather recent possibility and intellectual indexing is in general superior. For text, automatic and intellectual indexing produce different results, but it is becoming an increasingly common view that the two types of indexing are, on balance, about equally effective.xxxi

Spark Jones, K (2000), noted that the more recent comparisons of Intellectual and automatic text indexing are typically based on text retrieval conference (TREC) data, in which news material is somewhat over-represented and, especially, technical material is poorly represented.xxxii
Belkin, N.J. and Croft, W.B., (1987) With respect to automatic indexing of text, the so-called partial-march techniques are founded on the idea that word-distribution statistics can guide the extraction of index terms.xxxiii

Croft, W.B., (1987) described that the frequency with which a word appears in a text tells something about how central that word is to the subject of the text, and the number of texts in which a word appears indicates how well that word distinguishes texts in a collection from each other. Over the years automatic indexing techniques based on the extraction of individual words from texts have proved surprisingly effective. In fact, the only vocabulary control that has consistently yielded definite advantages is to reduce words to stems and incorporate simple synonym relations.xxxiv

Again, Blair, D.C., (2002) showed the scalability of current partial-match techniques is evident from the search engines on the Web. The effectiveness of the techniques is, however, modest in that many relevant texts are typically not retrieved whilst a number of non-relevant ones.xxxv

Furthermore, Borgman (1996) user studies provided plenty of evidence that text retrieval is often experienced as difficult and that many searches fail altogether.xxxvi

**Online Database**

An online database is a database accessible via a network, now generally the internet. It differs from a local database, held in an individual computer or its attached storage, such as a CD. Some of the important documents, which dealt with online databases, are as follows:

Schiller, Anita R. (1984), presented intermediary position between the commercial vendors and end users, libraries has been describe as 'channel' 'linking agents' 'brokers' and retailers. Although these terms suggest various interpretations, such as neutral role or a possible advisory role, or an implicit associations with the forcing of services and products, in general they convey the nation that librarian will pass on to library
consumers whatever comes down the pike. A basic problem is the lack of consistency and lack of standardization on with is and among the individual database. Another is the different command language, which must be caused for each of the separate vendor service. Poor database formatting, uncontrolled vocabularies, overlap between files, and incomplete or defective tapes are also problems which have been noted.xxxvii

Gray, Rosemary (1985), presented the downloading as a means of capturing data sent to a computer from another computer and storing it on local magnetic disk has become an important auxiliary technique in both data processing and online information searching. It has also become a controversial issue within the information industry, raising economic and legal problems for database producers and end-users alike.xxxviii

Tonsing, Rolf E. (1991), discussed the problem of many researchers experience of having to spend much time rekeying records obtained from external online and CD-ROM databases into their own personal databases on personal computers (PC). Results show that, with a few limitations, records from online and CD-ROM databases can be converted successfully to the formats required by these three personal database systems, and that significant time savings are possible by electronic transfer of converted records, instead of rekeying these records into personal databases.xxxix

Tenopir Carol (1996), related the expansion by several major producers of general interest databases to become online vendors. IAC, EBSCO and UMI joining Wilson as online purveyors of their own content; Their use of Client/ Server technology, 7.39.50 compliance, graphical user interface, access over the internet, and ten use of the World Wide \X7eb (WWW) for enhanced document delivery.xl

Notess, G. R (1996), explored the internet as an online services and compares it to other online services and their access to bibliographic databases on the internet.xli

Tenopir, Carol (1999), discussed the importance of a library ability to provide access to full-text databases or bibliographic databases that provide links to complete article. It also discussed the reasons for which databases are chosen for use in libraries,
influence of librarian; content factors in academic libraries; Uniqueness of the database. And, determined the patterns of online database use within multiple academic libraries. One pattern that quickly emerged is that a majority of students access electronic databases at times they would most typically use the library.\textsuperscript{xlii}

Rader, H.B. (2000), examined the cost of full text database services at the University of Louisville, thus providing a model for determining cost effectiveness of electronic resources.\textsuperscript{xliii}

Rao, Siriginidi Subba (2000) presented briefly the impact of information technology in information management and the major activities to be considered for improving information accessibility in India. Discusses the Indian scenario and information availability with various departments / agencies for database production. Lists the Indian database services providers with their services from government and corporate agencies. Concludes that the database sector is growing very fast in spite of some factors hindering its growth.\textsuperscript{xliv}

Sathyanarayana, N.V. (2000), presented several factors have been successfully pushing the sciences publishers to accept the transition to e-journal. Some of the influencing factors are the conveniences of web for access and browsing, the economics of Internet for delivery, the digital library revolution etc. The paper discusses the technological history of e-journals, access model, archiving pricing and other several issues.\textsuperscript{xlv}

Horwath, Jennifer (2002), presented the result of survey conducted for the purpose of evaluating the accessibility of four proprietary Web-based online resources. The survey was conducted entirely via e-mail. The survey responses revel which online resources are accessible but also the elements that comprise accessible online resources are described.\textsuperscript{xlvi}
Sandra, L., Groote, De and. Dorsch, Josephine L (2003), examined the online biomedical journals and databases and to assess current user characteristics associated with the use of online resources in an academic health sciences center.\textsuperscript{xlvii}

Tenopir, Carol (2003), described the most significant impact of cooperation is the convergence that is making full texts readily available.\textsuperscript{xlviii}

Chandrakar, Rajesh (2003), discussed some of the barriers to progress of databases in this area in university libraries in India.\textsuperscript{xlix}

Calvert, Hildegund M. (2004), reported the results of a series of studies conducted at Ball State University Libraries to examine the impact electronic journals and aggregate-databases have on interlibrary loan activities.\textsuperscript{l}

Singh, Anil and Gautam, J.N. (2004), this article provided the access to information online or in CD-ROM media is now just a matter of money; at the same time access to indigenous information has remained a challenging effort both for the user and the infomediary and presented an overview of some of the important electronic databases developed in India or on Indian topics.\textsuperscript{li}

Narendra, Vivek. , Stewart, Ron and Schmetzke, Axel (2005), indicated that, while most indexes and databases are now largely compliant with common accessibility standards and permit the performance of common search tasks, their actual user-friendliness for people with disabilities tends to be low. But the limitation of this study is the research could benefit from closer attention to the degree of difficulty involved in performing search tasks and to the accessibility of document content.\textsuperscript{lii}

Tenopir, Carol (2008), described that the libraries across the globe are challenged to integrate e-resources into their collection, services, and patrons' lives and academic libraries face obstacle when virtual learning environment (VLEs) become "the primary means of interaction between students and universities."\textsuperscript{liii}

**Users Studies**
Reneker, M. (1992). investigated the information seeking activities of 31 members of the Stanford University academic community were examined over a two-week period during the 1990-91 academic year. She adopted the naturalistic approach and employed qualitative techniques for the data collection using mainly personal interviews. Informants perception of their information environment is expressed in positive terms, and there is a close relationship between knowledge of the information environment and the sources used. Information seeking is embedded in the day-to-day activities and relationships of the participants and is triggered both by the articulation of need and availability of information. A large number of needs are satisfied by sources the informants created or organized themselves and by interpersonal information sources. The findings of the study indicated that the action of information seeking originated from a wide variety of needs like personal, professional, entertainment, etc.

Ray, Kathryn and Day, Joan (1998) described that student are increasingly expected to use electronic resource while at university. Studies were undertaken to determine the level of use of this type of resource, how student feel about various issues surrounding electronic resources and whether attitudes change dependent upon subject studied. 317 student across three universities completed questionnaires to determine level of use of various electronic information resources; ways in which they felt electronic resources had hindered or improved their academic career; it they provided themselves capable of using the resources; would the standard of their work suffer without the use of these resources; and the various method employed to acquire the skill necessary to use the sources. 155 student were questioned as part of a larger study IMPHL2, investigating the impact on people of Electronics Libraries, supplemented by 162 students, question as per the MA Dissertation, using the same methodology.

Challener, J. (1999), investigated artists and art historians teaching in five liberal arts colleges and three universities. Results found that they need information for teaching the participants almost all subscribe to art journals, and many read newspapers. They visit libraries frequently, usually more than one library, and unlike previous reports, the
majority are willing to ask the librarian for help. A large percentage of both art historians and artists are using computers for teaching. All 27 participants use slides extensively in the classroom, supplemented in most cases by textbooks.\textsuperscript{lviii}

Rusch-Feja, Diann and Siebeky, Uta (1999) is a good example of user study in online access of information, the study has conducted within the Max Planck Society, the German basic research organization similar to an academy of the sciences, a survey of researchers use and acceptance of electronic journal was carried out from April 15th May, 1999. The results of this survey show a significantly high acceptance of electronic journals and unwillingness to return to print version only. The frequency of use of electronic journals from four scholarly publishers was devaluated. The researchers also rated the advantages and disadvantages of electronics journals related to various aspects, such as currency, ease of access, timeliness, up-to-date information, additional searching mode, etc. The questionnaire also allowed capture of additional information, such as which additional journals were desired in electronic form, which services could be done without in case of budget restrictions, what information 'might be felt necessary for additional assistance in using electronics journals, etc. Data from publisher-provided usage and transaction statistics shed more light on the distribution of use among the inter and cross disciplinary fields of research within the 84 Max Plank Institute and additional working Groups and research Centers. Subject -oriented comparison between the researchers' use in biomedical section, the chemical -physical-technical section, and the humanities section of the Max Planck Society are drawn. A review of the recommendations resulting from the survey, as well as a suggestion for expansion of the information provision structures through establishment of a new Center for Information Management within the Max Planck Society, close the paper.\textsuperscript{lviii}

Mercer, Linda (1999) discussed that much has been written on issues pertaining to licensing and archiving of digital information. Until recently, there has not been enough information to evaluate how these digital products, particularly journals, are being used. Furthermore, meaningful data are often difficult to obtain as some publishers and vendors
supply little or no data or only information they feel supports the purchase of their products. As it become increasingly difficult to afford all digital content, librarians must be able to measure digital use of e-journals and books in order to make the best purchasing decision for their institutions. Librarian must develop their own solutions as well as solutions in collaboration with publishers so that better evaluation of digital content use can occur.

Shokeen, A., & Kushik, S.K. (2002), studied about information seeking behaviour of social scientists working in the universities located in Haryana. They reported most of the social scientists visit the library daily. The first preferred method of searching the required information by the social scientists followed by searching through indexing and abstracting periodicals, and citations in articles respectively. The social scientists use current journals followed by books.

Sunil, A. and Nagabhushanam, V. (2004), studied that advent of modern computers has made possible the construction of large indexes automatically. Which is much more related to the system itself, than to the user need. This paper traces, on information retrieval system in academic libraries and describes various information retrieval systems of academic libraries and describes various information systems of academic libraries and conclude with recent trends.

Suriya, M., Sangeetha, G., & Nambi, M. A. (2004), carried out a research work on "Information seeking behaviour of Faculty Members from Government Arts Colleges in Cuddalore District," The purpose of their study was to investigate, how faculty member seek information from the library. It mentions that most of the respondents 61 (38.12 percent) visited the library several times a week to meet their information needs. Regarding the type of search made by the respondents the majority of the respondents 91 (56.87 percent) made their search by subject.

Patitungkho, Kingkaew and. Deshpande, Neela J (2005) studied shows that most of respondents (forty one percent) stated their method of seeking information by consulting a knowledgeable person in the field. Two hundred and thirteen respondents (82 percent)
seek information for preparing lectures. Fifty-four percent of faculty members access more documents was references from a book. It is revealed that most of the faculty members (57 percent) used textbooks. Seventy four percent of respondents read information materials in Thai and twenty four percent read materials in English. The Internet had been almost universally adopted; they trace materials from the library via the Internet. Google.com was used for searching information by respondents. They use frequently e-mail for communication. It is found that 42 percent of respondents use the ERIC (Education Resources Information Centre) database. The majority of respondents faced the common problem while seeking information i.e. unavailability of information.

Kaur, Amritpal (2006) examined the use of E-resources at Guru Nanak Dev University, A questionnaire was prepared to elicit opinions from the users of E-resources. The responses were gathered from 120 users (60 teachers and 60 research scholars of Sciences and Engineering & Technology faculties). The results of the survey provide information about the type of E-resources, success rate of finding required information in E-resources, adequacy of information in E-resources, influence of E-resources on academic efficiency of information in E-resources, influence of E-resources on academic efficiency and views regarding feature of E-resources. On the basis of results of the survey some suggestions have been put forth for optimum utilization and exploitation of E-resources.

Chand, Prem, Thiyam, Satyabati and Chauhan, Suresh Kumar (2006), the paper highlighted the status of UGC-INFONET E-journals Consortium and usage pattern of these resources during the last two and half years. It discusses the high usage statistics for electronic resources of selected universities. It also gives a bird's eye view of overall expenditure and cost avoidance for two years.

Mallik, S.K., Saxena, Shyamala and Roy, P.K. (2006) studied and assessed the CSIR E-journals usage pattern, its describe that the phenomenon of consortia or group of libraries buying E-information, specially the E-journals, together has become very important in
the last few years. The CSIR E-journals Consortium was formed in the year 2001 with the objective of strengthening CSIR library resource by pooling, sharing and providing electronics access to scholar and scientist of around 40 CSRI laboratories and to promote the culture of electronic access. The CSIR E-journals Consortium entered into a contract initially with M/S Elsevier Sciences during 2001 to enable access to 1200 E-journals on their Science Direct platform. Since the year 2005, the CSIR E-journals consortium has over 40UO E-journals covering most of the outstanding publisher such as Blackwell, Elsevier, Kluwer. American Chemical Society, Taylor and Francis, John Wily, Springer, Royal Society of Chemistry, Cambridge University Press and Oxford University Press. Changing use patterns of users enables the librarians to examine collection development policies, instructional programmes and reference services to meet information needs in the online environment.

Paramsehwar, S. and Kumbargoudar, Praveenkumar (2006) studied that the use of Consortium for research scholars in providing electronic journals. Further, it includes the data collected through questionnaire survey to study the information needs of the researcher in chemistry and use of UGC-Infonet Consortium by the research scholars in the Department of Chemistry, Gulbarga University, Gulbarga.

Web-based information retrieval trends of researcher : a case study of Sambalpur University (India) (2007) published in Electronic Library, it studied the trend of web-based information seekers at Sambalpur University, India, since the internet is more helpful than the library in the present electronic era. This study is based on case study method. A structured questionnaire was distributed among the relevant researcher at Sambalpur University in order to ascertain their web searching habits. The study shows that the application of is ever increasing — to the extent that people believe that electronics material will eventually replace the traditional library and users need to go there find and collect the information they need. The study reveled, however, that in one Indian University, traditional library and printed material are still more effective to researchers than web-based information and resources.