CHAPTER – 4

INFORMATION SEEKING BEHAVIOUR: A CONCEPTUAL FRAMEWORK

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INFORMATION SEEKING BEHAVIOUR: A CONCEPTUAL FRAMEWORK

4.0 Introduction

Information is an important national resource. It is required in each and every phase of human development. In one form or other it has consistently been a significant element in the development of human society. It is an indispensable resource for right decision-making at governmental, organizational and personal levels. It is a vital ingredient for the socio-economic and cultural development of any nation, especially in developing countries like India. It is a well-accepted fact that the country, which is rich in information is always ahead in socio-economic spheres. The countries, which suffer from information gap due to non-transfer of information, lag behind in socio-economic development. There is a need to fill the information gap to ensure overall development. Efforts are being made by organizations, like UNESCO, IFLA etc., to fill the information gap among developed and developing countries.

The essence of information is a critical factor not only for the countries, but also for the individuals besides its multiplier effect on the efficiency and effectiveness of an entity for which it is being utilized. At the individual level, information is required to be understood in terms of various concepts, which are new. A person's need for information arises, when his stock of knowledge does not give any answer to a
particular concept. Persons require information to quench their need and use it for a particular purpose. To understand information needs of a particular group of users, it is essential to undertake user’s studies. The concept of information need, information seeking and use studies are synonymously used in the area of user’s studies. The user’s studies involve the study of information seeking behaviour of users in a particular subject and environment.

4.1 Information

Information means communication of knowledge about an event of a given condition or the spread of knowledge derived from observation, study, experience or instruction. The dictionary meaning of the term 'Information' is "knowledge", "data", "intelligence", a "fact", a "message", a "signal" and a "stimulus". The late Prof Bhattacharyya (1978) defined information as "a message conveyed or intended to be conveyed by a systematized body of ideas". According to Kemp (1976), "indeed, information has been described as the fifth need of man ranking after air, water, food and shelter". The word 'information' is used, in the context of user's studies research, to denote a physical entity or phenomenon, the channel of communication through which messages are transferred or the factual data, empirically determined and presented in a document or transmitted orally.

Information can be categorized on the basis of nature of its use and purposes for which it is used. J.H. Shera (1972) has categorized information into six types; viz., conceptual information, empirical information, procedural information, stimulatory information, policy information.
Information and directive information. Information, being an important valuable resource, has certain qualities. According to Rojas (1984), some of the important qualities of information are: accessibility, comprehensiveness, precision, compatibility, timeliness, clarity, flexibility, verifiability, free of bias and quantifiable.

Information becomes more meaningful, when it is transferred or communicated. The concepts of information and communication are so co-existent that they are often used synonymously without much distinction in common usage, and one often implies the other in many situations. Information is generated through a number of communication channels through print and electronic media, viz., books, journals, websites, etc. These sources generate a large quantity of information. It is being observed that growth of literature is roughly three times faster than the growth of population. The factors, which have contributed to such an exponential growth of literature are innovation in the field of printing and technological revolution in the filed of information and communication technologies.

The phenomenon of information flood thus created various problems for information workers in respect of retrieval of information exhaustively, expeditiously, pin-pointedly and with precision. The factors like quantitative growth of users, diversified nature of user's needs, multidisciplinary nature of research and development of new subjects, etc., has aggravated the problem further. Information workers used various techniques both quantitative and qualitative to tide over the problems. A survey method focused on users to understand
their approaches to information is one of the important techniques being used.

4.2 Users Studies

The user is an important component of an information system. All the luxuries of information revolution and problems of information explosion are centered round the user and his/her convenience. The success of any information system depends considerably on how best the system design is based on a close and accurate understanding of the users. The up-to-date knowledge about users and their information-behaviour is one of the essential ingredients for planning, designing and development of an information system. However, this vital fact was not recognized for a long time in the field of library and information science. It was revealed from the literature that information workers focused their studies only on the components of information system except the user. Attempts were made to study user as a component of information system only in the 1930s.

User studies are essential not only for planning and designing information systems but also for their efficient and effective operation. User studies would help to improve the relation of the library with users in an objective way. User study means 'a study, which is focused on users to understand directly or indirectly their information needs, use behaviour and use pattern.

The reasons for conducting user studies in the field of library and information science are varied and numerous, important among them
being: to know the users and their information needs; to identify the
levels and kinds of user needs; to identify the approach, perception and
information-seeking behaviour of users in the parent library
environment; to identify, by the results, the real strength and
weaknesses of the existing library resources and services; to specify the
limitations or problems which might appear to discourage the use of the
library; to understand the level of involvement and participation of the
users in building a good library environment; and to improve the
library system as a whole. These reasons are quite pragmatic in
achieving the preordained goals of a given library system of any class,
and to make the library environment more user-friendly and purposive.
The basic necessity in undertaking such a study on users it to know
who they are, what their information needs are and what suitable
methods available to provide need-based services to derive their
optimal satisfaction. Another factor, which is led by the above, is to
determine the future demands on library and information system.

The user studies in the field are being conducted by using direct
and indirect methods of research. Earlier user studies undertaken to
assess the information needs were based on indirect methods such as
library issue records, citation indexing, reference records, etc. Such
studies could bring out some aspects of the use of literature, but it was
soon realized that much more information is required than what these
studies could reveal. A complete picture of the functioning of the entire
system of communication and its components was needed. Citation
indexing, for example could not reveal the use of secondary or tertiary
sources or the use of other communication channels. This resulted in the use of more direct methods of studies.

4.2.1 Historical Background

The foundation of user studies was laid down in 1948 in the Royal Society Scientific Information Conference, where Urquhart and Bernal reported their research findings focusing mainly on the serial literature (Bernal, 1948). This was followed ten years later by the International Conference on Scientific Information in 1958. One area of this conference was devoted to ‘literature and reference needs of scientists: Knowledge now available and methods of ascertaining requirements’ (ICSI, 1959). A study entitled ‘Pilot study on the use of scientific literature by scientists’ conducted by Ralph R. Shaw (1956) is another important pioneering study in this direction. The period of 1960s-1970s was the boom period for user studies as the number of studies flourished during this time. During the 1960s studies began to take more sophisticated forms, trying to answer more complicated questions, as well as in the choice of scientific communities examined. An interesting feature of the 1960s is that user-research became the concern of institutions. By the 1970s, the studies introduced a diversity of target user groups like university students, citizens, magistrates, etc. An important development during this period was the establishment of the Centre for Research on User Studies [CRUS] at Sheffield University in 1975-76.

The 1980s was characterized by an increasing awareness surrounding the conceptual framework and methodological issues of
user studies. Also this is the period, when information technology invaded the area of user studies and secured a permanent place within the interests of the field. More and more studies were undertaken to determine the needs of users in relation to different information retrieval systems, like OPAC, databases etc. The implementation of conceptual theories, which took shape during the 1980s, grew stronger during the 1990s an increasing number of researchers acknowledged the due value of these theoretical frameworks. The decade also saw a tremendous growth and establishment of the Internet as an information provider in the information community. As a result a number of studies set out to investigate a plethora of issues concerning the impact of the Internet on the user and information community. The present trend on user studies shows that the rate of studies on the subject and varied kinds of users in the electronic environment is increasing year after year.

4.2.2 Types of users studies

The user studies are broadly classified into three main categories, viz., behaviour studies, use studies and information flow studies. Studies, which are conducted to find out the pattern of overall interaction of the users community with the communication system, without reference to any specific information-receiving event, are called communication behaviour studies. Studies, which are conducted to find out the use of any communication medium such as a primary periodical, a secondary periodical, etc., are called use studies. Whereas information flow studies are studies, which are conducted to find out
the flow of information in the communication system. They are studies in the flow of information. Grouping of users studies varies from author to author and even sometimes in the case of the same author it varies in different studies. Menzel (1966), in his study on information needs and uses in science and technology, has grouped user studies into channel studies, utility studies, studies of failures and near misses, exposure by phase research, exposure of measure of success, critical incident studies, critical incident decision studies, dissemination studies, etc.

4.3 Information Need

The need for information arises, when persons stock of knowledge does not find solution to a particular problem. According to ODLIS (2006), information need is an “A gap in a person's knowledge that, when experienced at the conscious level as a question, gives rise to a search for an answer. If the need is urgent, the search may be pursued with diligence until the desire is fulfilled”. Atkin (1973) defined it as “a function of extrinsic uncertainty produced by a perceived discrepancy between the individuals current level of certainty about important environmental objects and criterion state he seeks to achieve”. The information requirement or need refers to a lookout for a sort of relevance of information to a given user and to his areas of concern and interest, likes and dislikes. In other words, information need is a composite concept of different types of requirements and approaches to information.

Information need is seen both as a subjective and relative concept existing only in the mind of the experiencing individual. It may vary
with various situations with emphasis on individuals' different perceptions and characteristics. Their information needs are influenced by various factors such as work activity, discipline, availability of infrastructural facilities, etc. Paisley (1968) found that the following factors affect the information needs of users to a great extent.

- the range of information sources available;
- the uses to which the information will be put;
- the background, motivation, professional orientation and other individual characteristics of the users;
- the social, political and economic systems surrounding the user; and
- the consequences of information use.

This shows that the information needs of human beings are, to a large extent, affected by the environment in which they work.

There have been numerous studies as well as reviews about users needs and requirements, but meaning, scope, levels and types of information needs have varied widely. The studies categorize these needs as perceived needs and actual or idealized needs, immediate needs and deferred needs, continuous needs and discrete needs, regular and irregular needs. Further, information needs could be unexpressed or expressed/articulated, felt or unfelt, dormant or delitescent. Wilson advocated that the term 'information-needs' should be replaced by 'information-seeking towards the satisfaction of needs'. A natural assumption is to consider the needs as perceived by the users.
Melvin Voigt (1961) made a remarkable analysis of composite nature of information need. His study revealed that the same person could interact with the information system in different ways at different times, depending upon his purpose in relation to his work, stage of his work, general interest, amount of information already available to him and so on. He clearly identified three types of information requirements. Later on, a fourth type was added by other workers in the field. The four different types of approaches or requirements are as follows:

1. Current Approach
2. Everyday approach
3. Exhaustive approach
4. Catching-up or Brushing-up approach

4.3.1 Current approach

Every researcher has to keep himself abreast of the latest developments in his/her field of research and also in the broader field of interest. In this approach researcher interacts with the information system in a very general way browsing through periodicals, databases, etc., of his/her interest, but all these without keeping in view any specific search for information. The nature of this approach requires constant interaction with the information system.

4.3.2 Everyday approach

This approach is the result of researcher's frequent needs of information during the different stages in the course of his/her investigation. The information required could be data, method,
formulae etc. The nature of information sought in such a situation is very specific, and it usually expects quick answer from the library staff.

4.3.3 Exhaustive approach

Under this approach, a researcher looks for detailed information on his/her area of interest. For, which dependence of documents is very much necessary to find out all the relevant literature on a subject. Such an approach to information is done, when a researcher or team of researchers wants to take up a new area of investigation or have come to the stage of reporting the results of investigation. This kind of approach is done occasionally.

4.3.4 Catching-up approach

A researcher, at times, may need to have a brief but a complete picture of the recent developments of a related subject or a subject in which the researcher was not very much interested or which did not come within the areas in which he is not an expert. As a result, he is not current with the subject under investigation. Hence, in such situations, occasionally, the researcher expects the information system to provide him the required information.

4.4 Information Seeking Behaviour

Much of the human existence is characterized by the notion of search. Human beings seek and pursue material objects, sensual experiences and ethereal objects. Here the prime concern is, search for information, which is called information seeking. Information seeking is
a process in which humans purposefully engage themselves in order to change their state of knowledge. The term information seeking is preferred to information retrieval because it is more human oriented and open ended. Seeking connotes the process of acquiring knowledge. Information seeking is a fundamental human process closely related to learning and problem solving. The process of information seeking became complex along with the development of social organizations. The process needs to survive by adapting itself to changing nature, growth and format of information. Today, the generation, storage and communication of information are inextricably linked with the technology. Hence, the seeker of information or inter-mediator has to adopt new methodologies in search of information, which is available in both print and electronic formats. Varieties of gross strategies used in information seeking, which includes consulting both formal and informal sources of information. Both analytical and browsing strategies are involved in search for relevant information.

The concept of information seeking behaviour came into foray due to the complexities involved in defining the concept of information need. Information seeking behaviour results from the need for some information. Krikelas (1983) referred information seeking as “any activity of an individual that is undertaken to identify a message that satisfies the need”. According to Wilson (1981), ‘Information seeking behaviour results from the recognition of some need, perceived by the user, whom as a consequence makes demands upon formal systems such as libraries, information centers, on-line services or some other persons in order to satisfy the perceived need’. In other words,
information seeking begins when someone perceives that the current state of possessed knowledge is less than that needed to deal with some issue or problem. Information seeking is, thus, a cybernetic process in which the state of knowledge is changed through inputs, purposive outputs and feedback. Information seeking is, however, a strictly human process that requires adaptive and reflective control over the different actions of the information seeker. The progress achieved during the information seeking process, thus a product of attributes of information seeker and informational environment and the communication channel through which information flows.

The studies of information seeking behaviour demonstrated that users progress through different stages as they recognize and articulate an information need. Marchionini et al (1993) characterizes information seeking as a problem-solving activity dependent on: the seeker, the problem, the search system and the outcomes. It involves interaction among a number of sub-processes such as problem recognition, problem definition, search system selection, query conceptualization, formulation and execution, examination of results etc. The steps constituting information seeking process intended to establish a formalized search statement are information, information need, sources of information, conversion of need into concepts, search strategy and strategy implementation and review.

There are different factors, which influence the human information seeking behaviour. According Rouse and Rouse (1984), the factors include: payoffs and costs, resources available, update rates,
amount of information available, diagnosticity of data, distributional characteristics of data; and conflicts among sources. As of now, there is a whole body of knowledge on human information seeking. It is widespread among the areas of library and information science, psychology, management, computer science and systems engineering. Also now it is fairly established that a correct appraisal of information seeking behaviour implies knowledge of (Sethi, 1990):

- The purpose for which information is required;
- Environment in which users operate;
- Users skill in identifying and information providers' skill in providing the information;
- Channels and sources for tapping the information; and
- Barriers to information.

4.5 Information Seeking Behaviour Models

The early models of information use were conveyed more with document-seeking or library-use than with the characteristics of behaviour. However, with the advancement of library use, development of information system and services, a close look was given to the information needs and information seeking behaviour. This resulted in several in-depth studies in specific subject areas to determine the users, their information needs and specific traits of information seeking behaviour through development of suitable models.
Information science has produced numerous models of information seeking. A model may be described as a framework for thinking about a problem and may evolve into a statement of the relationships among theoretical propositions. The general model of information behaviour outlined that information seeking behaviour arises as a consequence of a need perceived by an information user. The user in order to satisfy that need makes demands upon formal or informal information sources or services, which result in success or failure to find relevant information. In case of failure, then the individual has to reiterate the search process.

The research on information behaviour has yielded many information-seeking behaviour models. Pioneering among them include Wilson's (1981) revised model of 1981 and problem solving model of 1996 (Wilson, 1997), Ellis (1987; 1993) behavioural model of information seeking strategies and Kuhlthau's (1991) model of the stages of information seeking behaviour. Collectively these studies suggest that information seeking exists within a particular context, and is a linear process consisting of stages and iterative activities. In addition to these, new models have emerged due to the impact of electronic environment, especially the impact of Internet on information sources.

Wilson based his model of information-seeking behaviour upon two propositions. The first information need is not primary need, but a secondary need that arises due to needs of a more basic kind; and the second is in the effort to discover information to satisfy a need, and the inquirer is likely to meet with barriers of various kinds. He also incorporated the work of Ellis and projected how information needs
arise and what may prevent the actual search for information. He also revised his model continuously to incorporate changing needs of users or nature of information. The revised model was based on research drawn from a variety of fields other than information science, including decision-making, psychology, innovation, health communication and consumer research, using the basic framework of 1981 model. According to this model, if information needs are to be satisfied, then three relevant theoretical ideas are suggested, viz., stress/coping theory, risk/reward theory and social learning theory.

Ellis' behaviour model of the information seeking pattern of social scientists proposed different features such as Starting, Chaining, Browsing, Differentiations, Monitoring, Extracting, Verifying and Ending, which represent different activities in the process of information seeking. In any given situation, individual information seeking, according to him, must initiate with Starting and end with Ending. However, the remaining behaviours do not necessarily take place in a specific sequence and may be initiated in different sequences at different times in the overall search process. Ellis account, therefore, in terms of different kinds of features it embodies, appears to sit between the micro-analysis of search behaviour (Starting, Chaining, Extracting, Verifying and Ending) and a more macro analysis of information behaviour generally (Browsing, Monitoring and Differentiating).

Kuhlthu's model of "Information Search Process" (ISP) incorporated affective and cognitive aspects exhibited by users in six stages. Her work complements that of Ellis by attaching six stages of
information search process, the associated feelings, thoughts and actions and the appropriate information tasks. The stages of Kuhlthau’s model are Initiation, Selection, Exploration, Formulation, Collection and Presentation. Like Ellis model, each of the stages explained various activities involved in the process of information search.

With the more recent focus on electronic sources on CD/DVD and WWW browsing and search, a new set of data collection and user modeling studies are possible. While these new web-based models can be primarily based on detectable patterns in either individual interest or situational activity, it is hoped that it may be possible to generalize a set of habits from these patterns that can then be either integrated with existing information seeking models or to form a new basis for information seeking studies. It is possible that by combining the previous studies with new data collection methods and accounting for newer information seeking technologies such as the Web, it may be possible to discover, measure and compare information seeking and information retrieval patterns. The alternative model suggested in a study by Choo et al (2000), covering information seeking behaviour in the web environment based on Ellis and Aguilar, which analyzed patterns of web-based information seeking, is worth mentioning.

4.6 Information Seeking Behaviour by various groups of users

Several studies have been undertaken in the areas of information needs and uses and information seeking or the variables that influence it. These studies aimed at various groups of users such as scientists, social scientists, humanists, administrators, government officials, school
teachers, general public etc., and the kind of resources, approaches used by these groups was studied while seeking information. The studies on these groups have yielded varied results as each one's needs are different depending upon their area of study and nature of work or stage of project or activity.

The studies in the general field of information seeking behaviour focused on general public, group of academic researchers/faculty/students, government workers etc to find out how these groups seek information in their day today activities and what problems they encountered in seeking information. Information use and information seeking patterns of groups of users vary, depending upon level, areas of study or research and field of study. The methods and channels used by them also vary in seeking information. For example, the students at the level of university seek information, in most cases related to their course. General public seek information on various aspects, which in most cases is related to their day today activities.

4.6.1 Information Seeking Behaviour of Scientists and Technologists

The need for information and information seeking of scientists and technologists arises due to several factors such as areas of study, phases of research, non-availability of information, etc. The information need of scientists and technologists is based more on their work role, the set of activities, responsibility, which they play in organizational setup. The type of information sought by scientists and engineers include basic S & T information, background and current information on one hand, and technical, physical, design and other technical data,
facts and figures, process; method and equipment information and other related information, which is most concerned to them, on the other hand they seek this information by using formal and informal sources of information, within their available information system, reference group and invisible college.

Several studies have been undertaken to find out information needs and use by scientists and technologists starting from Royal Society Scientific Information Conference held in 1948. Important among them are a series of review studies reported in various volumes of "Annual Review of Information Science and Technology". Different experts such as Menzel, Paisely, Allen and others described in their reviews on the subject, how scientists meet their information needs at different situations. According to them, scientists make use of various channels of communication to meet their information needs, depending upon the nature of their work and phases of research or situations of work. An understanding of these systems is essential for effective transfer of information. These systems include his surrounding culture, reference group, invisible colleges etc.

4.6.2 Information Seeking Behaviour of Social Scientists

The information seeking behaviour of scientists has been under investigation from the 1940s, whilst the behaviour of social scientists has been studied seriously from 1970s. Till then the methods of science user studies were applied to studies in social sciences. The Investigation into Information Requirements of the Social Sciences (INFROSS) carried out at the University of Bath between 1968 and 1970 was the largest
survey ever undertaken in the field. According to Skelton (1973), one of the reasons behind the project was the fear that in the absence of knowledge about information requirements in the social sciences, solutions adopted in sciences, based on the findings of science user studies, would be applied in social sciences.

Information needs and information seeking behaviour of social scientists differed to some extent as compared to scientists and technologists. They both use similar information sources, similar methods to retrieve information and both experience similar problems in dealing with information. However, the extent of use of different methods and degrees of problem created do vary and account for the differences in the information seeking behaviour of scientists and social scientists.

The Bath University experiment set a trend for several other studies on the information seeking behaviour of social scientists throughout the world. To quote a few, a study by American Psychological Association (1960-1970), Bath University studies under the programme 'Design of Information Services in Social Sciences (DISISS), 1973-1978 and several other studies were undertaken in the field. These studies, while confirming the findings of INFROSS, further suggested the following:

1. Practitioners in social science do not use and seek information in the same way as academics. This is due to lack of training in the use of libraries and by inclination they prefer informal channels
of communication and rarely use bibliographical tools and other formal channels;

2. Social scientists require documents and information from a wide range of sources, covering in an irregular fashion, a wide span of time;

3. There has never been a complete agreement, even in any one social science discipline, about methods of inquiry;

4. The majority of social scientists are not happy with the formal communication system which includes journals, monographs and secondary literature and also they are ignorant about existing information tools; and

5. The much of the information seeking activity of social scientists is undirected, haphazard and arbitrary.

As reported by Menzel (1966), these findings of information seeking behaviour of social scientists stood in striking contrast to the communication behaviour of scientists. According to his analysis, first, scientists have a very high motivation to obtain information. Secondly, they expect the information to help in very specific activities; and finally, they have very well developed and very well structured behaviour patterns with regard to professional communication. They have worked out a rich set of customs, habits, traditions, mechanisms, tricks and devices on how to obtain information, how to screen it, how not to obtain or listen to particular type of information.
Social scientists, as it is evident from various studies, make use of various formal and informal sources to meet their information needs and use the various methods to retrieve information. This is required for them to know the developments in the field and the results of previous studies. The formal sources include books, journals, reports, abstracting and indexing journals etc., and informal sources include colleagues, learned professional societies, meetings/conferences etc. As it is already noted, the use of information sources by any group is influenced by the working conditions, subject of study, nature of information sought, the attitude of user etc.

The preference for types of sources and methods used by social scientists varies compared to that of scientists. Regarding use of formal sources, many studies undertaken on them revealed their preference for books and monographs as compared to literature published in journals and other sources, except a few, where in the results showed their preference for journals compared to books and monographs. And their preferred method for retrieving information from various sources is bibliographies or references given at the end of articles or chapters as compared to abstracting and indexing periodicals. They also make use of informal sources such as colleagues, experts, institutions, learned societies and students in meeting their information needs, even though invisible colleges do not exist like in science and technology.

4.6.2.1 Information Seeking Behaviour of Economists

Economists are dedicated information seekers, since their work requires regular information flow in the form of statistical data, articles,
reports, papers, etc., to undertake research and advice government on various economic policies. Their job involves regular interaction with the information system for information retrieval, analysis, repackaging, processing and dissemination of information. They seek information to undertake teaching, research and development. Economists like any other social scientists seek information from both formal and informal sources; however, they need a lot of statistical data to undertake empirical research on any subfield of economics. This shows their dependence on statistical data, which is clearly evident from this study, which has been explained in detail in the analysis chapter.

Many factors other than the existence of need play a significant part of information seeking. They include importance in satisfying the need, penalty incurred by acting in the absence of full information, the availability of information sources and the costs of using them. There may also be time delay in between recognition of the need and the information seeking activity. Among the economists, factors associated with their information needs include: information required for research work, teaching, consultation work to government and national and international agencies, to participate in conferences and for keeping abreast of latest developments in the field and for communicating new information.

The studies on economists' information seeking behaviour revealed that their information needs are closely associated with the nature and type of the work undertaken by them. Like any other group of users, their information seeking activity also increased during the
initial stages of research, and slide down during the end. The influence of institutional resources compared with their individual characteristics has great influence on their selection and use of various resources and communication channels.

4.7 Information Seeking Behaviour in Electronic/Internet Era

The growth of information deluge has given rise to a situation, where one needs information in increasing variety and diversity frequency, volume and use. This has brought in a complex situation which is ambiguous and heterogeneous in character, so that information needs of a particular group of users and information flow from a specific situation/organization are difficult to determine. In addition, the use of information is so complex that one system can not cope with the task of effective retrieval without assessing the user's specific needs. This concept has given rise to the growing concept of searching, and the manner of determining the pattern of search is said to be considered information seeking behaviour.

The electronic or Internet era has brought in far reaching changes in how users seek information. With the advent of Information and Communication Technologies (ICTs) and their massive use in libraries, pattern of information seeking behaviour of users have experienced a changed phenomena. This new environment has thrown open floods of information, which is more accessible than ever in terms of scope, speed and ease. Seekers of information in any discipline have at their disposal an unprecedented array of information resources, which include CD-ROM/DVD databases and resources available on the Internet. This
has changed the way in which users seek information to support their academic and research activities. Consequently, it has challenged the traditional model of scholarly communication, wherein information is primarily disseminated through refereed print journals. Hence, today user's scholarly information behaviour is governed to a significant extent by the existence of wide variety of electronic information sources.

The growing popularity of the Internet has given wide variety of choices for users to browse and seek information from a wide variety of resources. However, accuracy and quality of information have become matters of grave concern, as Internet is not a controlled medium of information like scholarly publications. While interacting with the web, users come across digital information objects of their interest, whether directly or indirectly useful to them. In other words, they engage in complementary modes of information seeking, varying from undirected viewing that does not pursue specific information need, to formal searching that retrieves focused information. This may be compared with the browsing of books on the shelves, wherein while looking for book/s on a particular subject, users come across many other books in that subject.

The various kinds of users use web as a storehouse of knowledge to support their research activities and to meet their day-to-day information needs. The mode of information seeking on the web depends on the nature of information needs, information seeking tactics and the purpose of information use. The most important factor in determining the behavioural framework is the motivation and the
method of information seeking. The availability of Internet based information sources and successful use of search engines guides the behavioural pattern of information-seeking. In the present Internet era, users find it more interesting and easy to browse web for required information than to search library documents. Hence it may be concluded that search of information on the Internet has influenced the users since it is congenial in digital environment.

4.8 Conclusion

The field of information needs and information seeking behaviour has evolved over a long period of time. The user seeks information from various sources by using different channels to meet his/her information needs. The nature and type of information required by various groups of users such as scientists, social scientists and humanists varies to some extent owing to the nature of their work and activities. The changing nature of information sources due to the impact of Information and Communication Technologies (ICTs) have brought in challenges for information users and organizers. This has completely changed the way in which users seek information. The libraries and library professionals have a greater role to play in this ever changing nature and type of information to meet information needs of library users effectively.
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