CHAPTER - 1

INTRODUCTION

Information is an indispensable resource for socio-economic development of a country. It is needed and utilized by society for its development and prosperity. Today's age is the age of information. The world has now moved from the industrial revolution into the information revolution. The dependency on information in every sphere of intellectual activity is increasing day by day. The supply of correct and precise information in time helps the researchers/policy makers in making maximum use of available resources as also in avoiding duplication of work. The rapid development of technology, and the fast pace of the modern world has created an increasing awareness of the importance of information and the need for professionals, dedicated to studying and understanding it.

Information and communication are intrinsic to the practice of science. Research is stimulated often by new information, it is sustained by the continuous flow of information and when completed again yields new information. This in turn generates a fresh cycle of creation and discovery.

1.1 Information: Concept, Meaning and importance

It is very difficult to exactly define information. Perhaps the most explicit definition in the literature defines information as 'recorded experience that is used in decision making.' Information has now become vital resource. The use of information is a topic of obvious interest to an information scientist and is often the motivating force for the examination or information.
According to Webster's Third New International Dictionary [1] “Information as knowledge of a particular event or situation or as the knowledge communicated by others or obtained through investigation”.

The Random House Unabridged Dictionary [2] defines information as "knowledge communication".

Belkin [3] has defined information as that which is capable of transforming image structures.

According to Paisley [4] it is any stimulus that alters the cognitive structure of receiver.

Information is an ingredient, which is very much required for decision making in every walk of life. In fact information-seeking behaviour has been linked to problem solving behaviour, which is nothing but information processing.

A model developed by Simon [5] clarifies that there is close relationship between the act of decision-making and goal achievement vis-à-vis the role of information. Simon's model identifies four phases of decision-making. In the first phase the internal and external environment are monitored and actively searched to identify conditions in which decisions are needed. The second phase focuses on identifying a series of possible courses of action. The third phase is concerned with making the correct choice of so many choices. The fourth phase is to evaluate what has happened after a choice has been made and a course of action has been implemented. This phase thus focuses on the evaluation of the impact of actions taken following a choice that has been made in decision-making. The evaluation thus analyses how far the decisions have helped in achieving the objectives of the organization.

The importance of the model is such that it has led to realization of the significant role that information plays at each phase of decision-making.
Information is part of all human experience. Acquiring and processing information are fundamental aspects of life itself. Current interest in science of information has developed as the result of complexity of life problems. The word information is used in a variety of contexts as under:

i) **Information as a Commodity**

Information like any other commodity is meant for consumption. When information is used as a commodity, it often assumes economic value. Consequently the management of information as commodity becomes essential. The individual in possession of information does in a more advantageous position than the one not possessing it.

ii) **Information as Energy**

Those who view information as energy regard it as a quantifiable physical entity. It can be said that the information is transmitted by, or embedded in, ordinary forms of energy.

iii) **Information as Communication**

Information is often considered to be synonymous with communication when one person is in communication with another, the person initiating the exchange of data is moving his or her understanding of the data to other person, when the data are received the person becomes informed. Being informed therefore is the result of communication, or information transfer.

iv) **Information as Fact**

Information is often thought to be the same as fact. For example, what is the population of Chhattisgarh? When the word information is used in this way, it does not necessarily mean that there is any implied or actual use of the facts, although one actually wonders about day-to-day facts. The fact may or may not be of immediate concern unless the fact placed in context, it remains just a fact and nothing else.
v) Information as Data

Information is often thought to the same as data. Data are the product of symbols that are organised according to established rules and conditions. A data may have meaning or may not. For example the population of India is 101 crores is data with specific meaning to convey.

vi) Information as Knowledge

Information is often used interchangeably with knowledge. Knowledge implies a state of understanding beyond awareness. It represents an intellectual capability to extrapolate beyond facts and draw original conclusions. Knowledge must be deducted, not simply sensed. What we know or think is often called information.

This wide variety of perspective illustrates that data, information and knowledge are used quite differently depending on context and intention.

There is no field of human activity where information is not a component whether it is research and development, business and industry, government affairs, education, and training. The information has to be acquired, processed, stored, retrieved and disseminated. Indeed the performance in all these spheres of activity depends largely upon the availability of information at the right time in adequate quality and quantity. All human activities result in the creation of information which are mostly communicated through various media.

It is absolutely necessary for an information system to respond to environmental stimuli and acquire information to meet the requirements of user’s interests. Another significant and important aspect of information is the general acceptance that there should be free flow and exchange of scientific and technical information without any barriers. It is viewed as an essential resource for all economic and social change. Information generation, dissemination, transfer and communication take place between people.
through diverse channels and media, in a variety of contexts and environments.

The different authors have given different theories with regard to information. According to the Mathematical theory of Information [6] the amount of information in a message is related to the probability ratio of the message. The more it reduces probability, the more information it has. This theory believes that the prior knowledge of the recipient may reduce the information in a message. The Semantic theory [7] of information on the other hand, suggests that a prior knowledge may increase the amount of information in a message.

An information scientist or librarian has some interest in both of these theories of information. But he is more concerned with behavioural problem that is with the effect, which the meanings of the transmitted symbols produce on the recipient. If the behaviour of the recipient is not affected, no information is said to have conveyed to him.

Keeping the above in mind, information may be defined as data of value in decision making. Information is the data, which can be transmitted between individual, and each can make whatever use he can of it. No decision is taken generally when there is uncertainty and arrives at a decision. The degree of uncertainty varies from person to person depending on the time and place.

Rajan [8] says, “no universally accepted definition of information has yet crystallized, perhaps it will never be crystallized.” In view of this, the study should be made on the information-related phenomena rather than information itself.

Accordingly, Wersig and Neveling [9] have identified the following approaches towards information:
a) The structural approach – in this approach information is viewed as structures of the world or static relations between physical objects which may be perceived or not;

b) The knowledge approach – this approach records knowledge that is built on the basis of perception of the structure of the world. But the problem with this approach is that the term ‘information’ may erroneously be used for the term knowledge.

c) The message approach – the mathematical theory of communication uses this approach. It is concerned with the transmission of symbols representing a message.

Information is one of the several basic resources available today. The role and value of information has been much discussed by economists in the context of competitive marketing, advertising and marketing. There is no field of human activity wherein information is not a component. Whether it is research and development, business and industry, government affairs, education and training: the information has to be acquired, processed, stored, retrieved and disseminated for communication. Information is viewed as an essential resource for all economic and social change. [10].

1.2 Information Need and Seeking Behaviour

In the present age of information, it has been increasingly felt that to serve readers better, information needs and users must become the central focus of attention [11]. Careful initial planning and constant monitoring of need and demand to keep it on the rails of relevance to its user group is necessary. In fact, because of the inherent restless nature of the parent field, and the many different disciplines and interests it embraces at any one time, user studies and user education were also thought to have above average importance.
The information handling activities are to be based entirely on the needs of the users. The user categories have different needs for information depending upon their functions, responsibilities and duties. The user group belongs to government officials, legislators, parliamentarians, researchers, teachers, students and so on. Information needs vary distinctly among these categories of users. The matching of information needs to sources of information has to be based on the careful assessment of information needs. Use of information, gaps in information requirements to meet variety of use has become the focus of study today.

Part of the difficulty with information needs lies with the troublesome concept of 'information'. Numerous definitions have been evolved seeking to distinguish, for example, among data, information and knowledge and recently there have been attempts to evolve a single concept of information for Information Science. The word information is used, in the context of user studies, to denote a physical entity or phenomenon (as in the case of questions relating to the number of books read in a period of time, the number of journals subscribed, etc.) the channel of communication through which message are transferred, (as when we speak of the incidence of oral versus written information), or the factual data, empirically determined and presented in a document or transmitted orally.

The situation is further complicated by the fact that distinction may or may not be made among 'facts', 'advice', and 'opinion', the distinction is of course, is that the first of these is assumed (not always correctly) to be free of value judgments, whereas value judgments almost certainly affect advice and opinion.

These multiple uses of the term 'information' causes confusion because researchers sometimes fail to distinguish between one sense and another, or simply leave the reader to discover which sense is meant by
reading the paper or report. Even then it is something unclear which of the senses the researcher has in mind when setting research objectives.

The UNISIST II [12], gives a restricted meaning to information in the context of science, technology and societal development: "information is the symbolic elements used for communication scientific and technical knowledge irrespective of their nature (numerical, textual etc.), material carriers, form of presentation etc. It refers to both substance or contents of documents and physical existence. The term is also used to designate both the message (substance and form) and its communication (act)."

The information need of the users is of central concern to providers of information service. The ultimate aim of any information-retrieval system is to supply and deliver the information, which can precisely match the information requests or requirements. Information needs and users are studied with a view to improve the overall system of information transfer.

Investigation have centered upon information seeking behaviour. We identify search strategies to satisfy a user's demand for information. If we choose to investigate any of the search strategies we are clearly investigating 'information seeking behaviour' rather than the user's need for information. Equally clearly, our motives for investigating search process may be to make inferences about need, or it may be to uncover facts relating to other variables related to design, development or adaptation of information system. Researchers have explored ways in which users make use of information, types of demands placed on the system, the impact upon the receipt of information, the flow of information, the preferred types of information channels and the levels of satisfaction expressed by the user. User study is a multidisciplinary area of knowledge. It is primarily concerned with the behaviour and experience of users of information systems and services with regard to their interaction.
The concept of information need has been universally considered troublesome. There appears to be a consensus that information need is a difficult concept to define, to isolate and especially to measure.

The information needs of the users have to be satisfied by the libraries and information centres through their services. The information needs relate to [13]:

(i) Which information is needed i.e. the subject or theme. It presupposes that any and all information about the requested subject will somehow satisfy the information need;

(ii) The other approach is rather different. It might be called a situational approach for example user wants information on a certain subject, what can be done to satisfy this need? What does the user want to know, at which level of detail and abstraction etc. This specifies the intrinsic characteristic of information, whatever the subject may be.

The information need is a factual situation in which, there exists an inseparable interconnection between information and need. Information originates and is generated because there exists a need and interest. The content of information is of primary concern. The information objectively necessary for realizing a function is the objective information. Such information needs of users have to be satisfied.

Information need is something that comes into existence when a person recognizes something wrong in his or her state of knowledge and wishes to resolve the anomaly; or when there is insufficient knowledge to cope with voids, uncertainty or conflict in knowledge area.

Information needs have not been defined as what users think they need but rather in terms that designate what it is in the information system that is needed. The definition has not focused on what is missing for users i.e. what gap they face but rather on what the system possess. It is very difficult to
identify information needs. It involves a cognitive process, which may operate on different levels of consciousness and hence may not be clear to the inquirer himself. If a user could specify what is needed under defined conditions his problems might be well on its way towards solution.

An information demand of preference expressed in relation to a particular purpose, to be used within a particular environment is more easily denied. But some problems and purposes are difficult to identify and precise communication is not always possible. What is requested must also be satisfied with an acceptable level of explanation.

Menzel [14] has argued that needs and uses primarily aim to study the behaviour and experiences of researchers in confrontation with information channels. He has therefore categorized investigations into following three types:

(i) Preference or demand studies - which include opinions, evaluations, requests for information, and experiments on the impact of a service. These, he observed are useful as guides to operation, especially when few options are available.

(ii) Use studies - which include relative contributions of communication

(iii) Channels and critical incident studies, e.g. sampling of information receiving incidents and measurement of their impact. User interaction with dissemination in systems, as in studies of the flow of information at a scientific meeting.

Menzel thus, has confined his universe to empirical studies in which experience is recalled, as behaviour is observed. The study of information needs and uses must therefore necessarily borrow from sociology, psychology, system analysis, and industrial engineering and related disciplines.
As a conceptual framework, Menzel's observations are still valid today in the relationship of the user to the communication channel. In this context, Chen and Hernon [15] said that the human beings have many capabilities that lower animals fails to exhibit. They have the capability to think rationally and they have developed the ability to use information in making decisions. An information user reflects a perception by the decision-maker that the risk associated with making a given decision would be brought to a lower level if information were received. An information need reflects a desire for increased expected accuracy in the solution of a problem. The need should not be viewed in a negative sense as a 'hole' which needs to be filled. Instead it should be seen positively as that which increase accuracy in decision making.

Individuals seek information because they have a present information need or because they feel that the information might be of some use in future. Decisions are often made based on information gathered for making earlier decisions. Information may be stored in the brain or an external storage medium such as a printed book or a computer disk.

The process of identifying information need is a very complex job. As Brittain [16] points out it may involve the following:

(i) Identifying need expressed by the user
(ii) Identifying need that a user cannot express.
(iii) Identifying an immediate need
(iv) Identifying a future or deferred or potential need

Childers [17] has categorized need as “kinetic” and “potential”. The kinetic needs are directed towards satisfying a special problem. Potential needs remain unconscious hidden under layers of attitude, impulses and values. Information need can be categorized into following:
(a) Social or pragmatic information needs: Information required to cope with day-to-day activities.

(b) Recreational information needs: Information satisfying the recreation interest of an individual.

(c) Professional information needs: Information required to operate competitively within a business or professional environment.

(d) Educational information needs: Information required to satisfy educational or academic requirements at an institution.

According to Girja Kumar [18] the information need may be expressed as input – process – output model. The basic components of the model are:

(i) Problem

(ii) Problem solving process

(iii) Solution

The problem is identified and analyzed to determine information needs. It is indicative of uncertainty in knowledge. Solution results in resolving of the situation by filling gap in the knowledge.

The model set forth by him can be illustrated as below:

Input -> Process -> Output

Problem -> Problem solving process -> Solution

Information needs -> Search process -> Information need fulfilled.

Belkin [19] has extended the psychological approach with the inquiry into the reasons of information seeking. Taylor [20] has explored the information need from the angle of psychology of human behaviour and has identified four levels:

(a) Visceral need: an actual but unexpressed need for information

(b) Conscious need: an ill – defined area of decision
(c) Formal need: an area of doubt, which may be expressed in concrete terms.

(d) Compromised need: a need translated into what the sources and file can deliver.

1.21 Information Seeking Behaviour

User study is meant for systematic examination of the characteristics and behaviour of the users of the systems and services. User study is conducted to draw attention to the interrelationships among concepts used in the field. The user study is directly linked with the effectiveness of the library and information services as they aim at satisfaction of user needs. The key concept in the user studies or information needs is information seeking behaviour. It essentially implies the study of the use of the demand or need for information.

Information seeking behaviour results from the recognition of some need perceived by the user. That behaviour may take several forms: for example, the user may make demands upon formal systems that are customarily defined as information systems (such as libraries, on-line services, or information centres), or upon systems which may perform information function in addition to a primary, non information function. Alternatively, the user may seek information from other people, rather than from systems.

The user study may be either descriptive or prescriptive. A descriptive study describes how information transfer takes place in relation to a particular user population. The prescriptive study will suggest the ways in which the prevailing system or product could be modified or upgraded.

Menzel [21] has categorized the user studies broadly into three categories:

i) Behaviour studies

ii) Use studies
iii) Information flow studies

Studies, which are carried out to find the pattern of overall interaction of the user community with the communication system are called information behaviour studies. The studies, which are conducted to find out the use of any communication medium, are called use studies. While the studies, which are conducted, to find the pattern of flow of information in communication system is the information flow studies.

Information seeking behaviour can be defined as a process of construction in which a user progresses from uncertainty (or confusion) to understanding (or clarity). It is experience with thoughts, actions, and feelings interwoven into a complex mosaic rather in a separate distinct entity. Information seeking behaviour includes actions or strategies undertaken to locate information. As such information seeking behaviour may be viewed as a process in which users progress from uncertainty to understanding. It involves use of information to meet an individual's needs. It is recognition of some need perceived by the user who as a result makes demand upon a library, and information system or some other individual in order to meet his information requirement.

The study of information seeking behaviour forms an important component of information users' studies [22]. It results from the recognition of some need, perceived by the user, who as a consequence makes demand upon formal systems such as libraries, information centres, some other person in order to satisfy the perceived need.

This field is composed of studies that are concerned with who need, what kind of information and for what reasons, how information is found, evaluated and used and how these needs can be identified and satisfied. The information seeking behaviour is thus concerned with establishing
relationship with the people, information and system of an order so as to obtain the best results.

Wilson [23] has discussed the nature of information seeking in information exchange process. He says that information seeking behaviour arises as a consequence of a need perceived by an information user, who in order to satisfy that need, makes demand upon formal or informal information sources or services, which result in success or failure to find relevant information.

Girja Kumar [24] has emphasized that the information seeking behaviour is mainly concerned with who needs what kind of information and for what purposes; how information is found, evaluated and used and how their needs can be identified and satisfied. According to him information seeking behaviour involves the following stages:

i) Identifying objective

ii) Defining need

iii) Accessing information system

iv) Establishing sources of information

v) Information acquisition

vi) Use of information

vii) Satisfaction and or dissatisfaction.

Information seeking behaviour essentially refers to the strategies and actions undertaken to locate discrete knowledge elements. It is concerned with the integrative utilization of these basic resources:

(a) People

(b) Information

(c) System.
It can be said that the behaviour which yields the highest satisfaction is the best.

For the researchers of all disciplines information occupies a special place in their daily life. It has been indicated through several studies that the information need of researchers can be simply and easily listed and their behaviour quite safely predicted; many of these studies have assumed that information is a discrete, even concrete reality. It is a commodity to be acquired and can be contained in discrete visible packages of equal value. It has also been assumed that use of this commodity can be counted or measured to represent the totality of information behaviour. Information system in science are often designed on the basis of such studies, because as Wilson [25] has pointed out the study of information seeking behaviour can be said to be the study of scientists' information seeking behaviour. Belkin [26] has developed the concept of an Anomalous State of Knowledge (ASK) which assumes that information need arises from the recognised anomaly in the user's state of knowledge concerning some topic or situation and that, in general, the user is unable to specify precisely what is needed to resolve that anomaly.

Wersig [27] has referred to information need as a 'problematic state'. His concept of the problematic state depicts internal models of knowledge, beliefs, goals, environment and situation as forming the basis of information need and information seeking behaviour. The best way to view information seeking behaviour is to treat it as an aspect of human behaviour in general.

1.2.1 Information seeking models

Research in information behaviour has occupied information scientist since before the term 'information science' was coined, we can consider its origin back to the Royal Society's Scientific Conference of 1948. When a number of papers on information behaviour of scientists and technologists
were presented. Of course, the term information behaviour was not used in the papers, which were generally about document and library use. But the origins are clearly there. This was seven years before Chris Hanson (of Aslib) coined the term information science and ten years before the establishment of the Institute of Information Scientist in the U.K., the first professional society devoted to the field.

Over the intervening period since the Royal Society Conference literally thousands of papers and research reports have been produced on user needs, information needs and information-seeking behaviour. Throughout the period the one constant complaint of commentators has been that researchers have not built upon prior research in such a way as to cumulate a body of theory and empirical findings that may serve as a starting point for further research.

A number of reasons can be advanced for this situation: first in the positivist tradition quantitative research methods were adopted that were inappropriate to the study of human behaviour many things were counted from the number of visits to libraries. To the number of personal subscriptions to journals and the number of terms cited in papers, very little of this counting revealed insights of value for the development of theory of indeed of practice. Secondly researchers in the field of information science seem generally to have ignored allied work in related areas that might offer more robust theoretical models of human behaviour. Thirdly general models of information behaviour have only begun to emerge and attract much attention in the past ten to fifteen years.

Wilson [28] has suggested the general adoption of qualitative methods (from the early 1970 in the U.K.) has resulted in work that is in the wider tradition of the investigation of human behaviour and which therefore, is more likely to find theories and models in the social sciences that can be applied to the study of information behaviour. At the same time the models
and theories proposed by certain researchers (e.g. Dervin, Ellis, Kuhlthau, Wilson) have gained strength as they have been adopted as the basis for further research by other investigators.

1.2.2 Models of Information Seeking Behaviour

A model may be described as a framework for thinking about a problem and may evolve into a statement of the relationship among theoretical propositions. Most models in the general field of information behaviour are of the former variety; they are statements often in the form of diagrams, that attempt to describe an information-seeking activity. The causes and consequences of that activity or the relationship among stages in information-seeking behaviour. Rarely do such models advance to the stage of specifying relationships among theoretical propositions rather, they are at a pre-theoretical stage but may suggest relationship that might be fruitful to explore or test.

![Figure: 1. Wilson's model of information behaviour](image_url)
Models of information behaviour, however appear to be fewer than those devoted to information-seeking behaviour or information searching. Figure 1 is a variation on Wilson's model of 1981 [29].

The aim of this model was to outline the various areas covered by what the writer proposed as information-seeking behaviour as an alternative to the then common information needs, but it is clear that the scope of the diagram is much greater and that it attempts to cover most of what is included here as information behaviour.

The model suggests that information-seeking behaviour arises as a consequence of a need perceived by an information user, who, in order to satisfy that need makes demands upon formal or informal information sources of services. Which result in success to find relevant information and may either fully or partially satisfy the perceived need- or indeed, fail to satisfy the need and have to reiterate the search process. The model also shows that part of the information-seeking behaviour may involve other people through information exchange and that information perceived as useful may be passed to other people as well as being used for instead of being used by the person himself or herself.

One of the results of the analysis that led to the diagram was the recognition that information use had received little attention and within information science that statement is still relatively true today. Nor has much attention been devoted to the phenomenon of the informal transfer of information between individuals since Allen's [30] pioneering work on transferring to the research laboratory the two-step flow of communication model of the gatekeeper. The identification of these areas as relatively lacking in research attention demonstrates one of the function of these models.

The limitation of this kind of model, however, is that it does little more than provide a map of the area and draw attention to gaps in research: it
provides no suggestion of causative factors in information behaviour and consequently it does not directly suggest hypotheses to be tested.

When we turn to information-seeking behaviour the models are rather more numerous. Some of the major models are: Wilson's (1981) model of information-seeking behaviour [31]; Dervin's (1983) Sense-Making theory [32]; Ellis's (1989 and 1993) behaviour model of information seeking strategies [33]; and Wilson's (1996) model [34], which expands his 1981 model through an analysis of the literature in fields other than information science.

**Wilson Model, 1981**

Wilson's second model of 1981 is based upon two main propositions: first, that information need is not a primary need but a secondary need that arises out of needs of a more basic kind, and second, that in the effort to discover information to satisfy a need the enquirer is likely to meet with barriers of different kinds. Drawing upon definitions in psychology, Wilson proposes that the basic needs can be defined as physiological cognitive or affective. He goes on to note that the context of any one of these needs may be the person him-or herself, or the role demands of the person's work or life, or the environments (political, economic, technological, etc.) within which that life or work takes place. He then suggests that the barriers that impede the search for information will arise out of the same set of contexts.

This model is shown in a simplified version (which also shows the search behaviour defined by Ellis [35]) in Figure-2. Wilson's model is clearly what may be described as a macro-model or a model of the gross information-seeking behaviour and it suggests how information needs arise and what may prevent land, by implication, aid the actual search for information. It also embodies, implicitly, a set of hypotheses about information behaviour that are testable, for example, the proposition that
information needs in different work roles will be different or that personal traits may inhibit or assist information seeking. Thus the model can be regarded as a source of hypotheses, which is a general function of models of this kind.

![Diagram of Wilson's model of information seeking behaviour]

Figure 2. Wilson's model of information seeking behaviour

The weakness of the model is that all of the hypotheses are only implicit and are not made explicit. Nor is there any indication of the processes where by context has its effect upon the person, nor of the factors that result in the perception of barriers, nor of whether the various assumed barriers have similar or different effects upon the motivation of individuals to seek information. However the very fact that the model is lacking in certain elements stimulates thinking about the kinds of elements that a more complete model ought to include.

Dervin model, 1983, 1996

Dervin's Sense-Making theory has developed over a number of years and cannot be seen simply as a model of information-seeking behaviour. It is
rather as she says [36]... a set of assumptions, a theoretic perspective a methodological approach a set of research methods, and a practice designed to cope with information perceived as ..........a human tool designed for making sense of a reality assumed to be both chaotic and orderly.

However Sense-Making is implemented in terms of four constituent elements: a situation in time space, which identifies the difference between the contextual situation and the desired situation (e.g. uncertainty); an outcome, that is the consequences of the Sense-Making process and a bridge, that is some means of closing the gap between situation, gap/bridge and outcome. Dervin presents these elements in terms of a triangle: situation, gap/bridge and outcome, which can be represented as in Figure-3. However it may be preferable to use the bridge metaphor more directly and present the model as Figure-1.

The strength of Dervin's model lies partly in its methodological consequences, since in relation to information behaviour, it can lead to a way of questioning that can reveal the nature of a problematic situation, the extent to which information serves to bridge the gap of uncertainty, confusion or whatever and the nature of the outcomes from the use of information. Applied consistently in micro-moment.

![Diagram of Dervin's Model](image-url)
Time-line interviews such questioning leads to genuine insight that can influence information service design and delivery.

Ellis model

Ellis etc. [37] elaboration of the different behaviours involved in information seeking is not set out as a diagrammatic model and Ellis makes no claims to the effect that the different behaviours constitute a single set of stages; indeed he uses the term features rather than 'stages'.

Starting: the means employed by the user to begin seeking information for example, asking some knowledgeable colleague.

Chaining: following footnotes and citations in known material or forward 'chaining from known items through citation indexes'.

Browsing: 'semi-directed or semi-structured searching',

Differentiating: using known differences in information sources as a way of filtering the amount of information obtained:

Monitoring: keeping up-to-date or current awareness searching.

Extracting: selectively identifying relevant material in an information source:

Verifying: checking the accuracy of information:

Ending: which may be defined as 'tying up loose ends' through a final search.
The strength of Ellis’s model, as with Kuhlthau’s is that it is based on empirical research and has been tested in subsequent studies, most recently in the context of an engineering company.

Of the features, Ellis and Haugan [38] notes that ‘the detailed interrelational or interaction of the features in any individual information seeking pattern will depend on the unique circumstances of the information seeking activities of the person concerned at that particular point in time’. However it is clear that ‘starting’ must initiate a process and that ‘ending’ must end it. It also seems reasonable to suggest that ‘verifying’ is a penultimate stage in process and that ‘extracting’ must follow on this fact leads to the conclusion that ‘extracting’ is not an information behaviour of the same kind as ‘browsing’ or ‘chaining’ or ‘monitoring’ and further suggests that differentiating is also a different kind of behaviour, browsing chaining and monitoring are search procedures, whereas differentiating is a tittering process and extracting may be seen as an action performed on the information sources.

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’s account, therefore, in terms of the different kinds of features it embodies, appears to sit between the micro-analysis of

Figure-5A Stage process version of Ellis’s behavioural framework
search behaviour (starting, chaining, extracting, verifying, ending) and a more macro – analysis of information behaviour generally (browsing, monitoring).

If these points are accepted, it is then possible to suggest a diagrammatic presentation of the model, as in Figure-5.

Thus, the models of Wilson and of Ellis are intended to function at different levels of the overall process of information seeking and this fact is demonstrated by the ability to nest one within the other.

Kuhlthau Model

Kuhlthau’s work [39] complements that of Ellis by attaching to stages of the information search process the associated feelings, thoughts and actions and the appropriate information tasks. This association of feelings, thoughts and actions clearly identifies Kuhlthau’s perspective as phenomenological, rather than cognitive. The stages of Kuhlthau’s model as: Initiation, Selection, Exploration, Formulation, Collection and Presentation. As an example the Initiation phase of the process is said to be characterised by feelings of uncertainty, vague and general thoughts about the problem area and is associated with seeking background information; the ‘appropriate task’ at this point is simply to ‘recognise’ a need for information. The remaining appropriate tasks are: Identify, that is, fix the general topic of the search; Investigate, or search for information on that general topic; Formulate, focus on a more specific area within the topic, Collection, that is gather relevant information on the focus; and Complete end the information search.

Kuhlthau’s model is thus more general than that of Ellis in drawing attention to the feelings associated with the various stages and activities. In this regard Kuhlthau acknowledges her debt to Kelly’s ‘personal construct theory’ [40], which describes the affective experience of individuals involved in the process of constructing meaning from the information they encounter. The fundamental proposition is that the feelings of uncertainty associated
with the need to search for information give rise to feelings of doubt, confusion and frustration and that as the search process proceeds and is increasingly successful, those feelings change: as relevant material is collected confidence increases and is associated with feelings of relief satisfaction and sense of direction.

Stage: Initiation Selection/exploration Formulation Collection Presentation

Browsing

Starting — Chaining — Differentiating — Extracting — Verifying — Ending

Monitoring

Activity: Recognize Identity/formulate5ee Gather Complete

Figure-6. A Comparison of Figure-5 with Kuhlthau’s stage process model

In effect, what Kuhlthau postulates here is a process of the gradual refinement of the problem area, with information searching of one kind or another going on while that refinement takes place. Thus a successive search process is implicit in Kuhlthau’s analysis of the search activity. Although Kuhlthau’s early work was a series of longitudinal studies of high school students, more recently she has shown the applicability of the model to the work of a securities analyst [41].

Through this merger of the two models, we can see strong similarities and the major difference appears to be that Ellis specifies the modes of exploration or investigation. The point must be reiterated, however, that Ellis does not present his characteristics as stages but as elements of behaviour that may occur in different sequences with different persons, or with the same person at different times. Thus, the two models are fundamentally opposed in
the minds of the authors: Kuhlthau posits stages on the basis of her analysis of behaviour, while Ellis suggests that the sequences of behavioural characteristics may vary.

Wilson Model, 1996

Wilson's 1996 [42] model (Figure-7) is a major revision of that of 1981, drawing upon research from a variety of fields other than information science, including decision-making, psychology, innovation, health communication and consumer research.

![Wilson's 1996 model of information behaviour](image)

**Figure 7. Wilson's 1996 model of information behaviour**

The basic framework of the 1981 model persists, in that the person in context remains the focus of information needs, the barriers are represented by 'intervening variables and information-seeking behaviour' is identified. However, there are also changes: the use of the term 'intervening variables'
serves to suggest that their impact may be supportive of information use as well as preventive information-seeking behaviour is shown to consist of more types than previously, where the ‘active search’ was the focus of attention: information processing and use is shown to be a necessary part of the feedback loop, if information needs are to be satisfied and three relevant theoretical ideas are presented: Stress coping theory, which offers possibilities for explaining why some needs do not invoke information-seeking behaviour, risk/reward theory, which may help to explain which sources of information may be used more than others by a given individual and social learning theory, which embodies the concept of self-efficacy the idea of ‘the conviction that one can successfully execute the behaviour required to produce the (desired) outcomes’ [43].

Thus, the model remains one of macro-behaviour, but its expansion and the inclusion of other theoretical models of behaviour make it a richer source of hypotheses and further research than Wilson’s earlier model.

We can also attempt to relate this model to the others discussed above. It is fairly obvious that the models of both Ellis and Kuhlthau relate to the active search mode of information-seeking behaviour. Dervin’s model is completely different in character, since its aim is to provide a framework for exploring the totality of information behaviour from the exploration of the context in which information needs arise to the means whereby that need is satisfied, whether through active searching or otherwise. In effect, it is a model of a methodology, rather than a model of a set of activities or a situation.

These models have been ‘information behaviour’ models because it is clear that they are not information search’ models in the sense that might be understood by the information retrieval researcher. They are concerned with, on the one hand, generalized behaviour surrounding the actual initiation seeking and on the other with a broader perspective of the information search
than simply the use of computer-based information retrieval systems. This is an important point to make, since the implications for IR systems from research in the general area of information behaviour may inform the overall design principles of such systems, and may enable the information content developer to specify more clearly what navigational routes are needed through the information and exactly what kind of information or data types need to be in the record but the specification of rules for the design of interactive systems on the basis of information behaviour research may not be possible. Thus from Wilson's 1996 model we can reasonably hypothesis that an IR system should be designed so as to reduce the risk of failure by the user and thereby, increase his or her sense of self-efficacy, but the means whereby the risk is reduced must be matter for the system designer. However, better systems are likely to be designed if the designer understands the ideas of risk reward and self-efficacy.

Again, Ellis's work suggests that an IR system ought to provide more navigational routes for the user, providing not only Boolean or best-match search strategies, but also the capacity to chain through citations in texts both backwards and forwards in time and with intelligent agents to monitor the database according to say, the user’s last search or an established profile.

Similarly, given that virtually all studies of information-seeking behaviour show the importance of personal networks, IR systems could well embody routines that would enable users to indicate their willingness to be put in contact with other interested tools for collaborative work, not only within but across disciplines, 'the potential for this has been made real by the development of the Internet and by modern software tools that allow the 'desk-top' to act as the interface to the Internet and World Wide Web.
1.3 Information Needs of Researchers in the Field of Tibetan studies

The creative researcher in any field constantly tailors his ongoing work so as to be on the cutting edge of the research front. The researchers must be continuously reporting on it, seeking information relevant to it, reshaping its course and updating its potential relevancy. This behaviour is impelled by strong motives for having made an original and relevant scientific contribution. It is not difficult to understand the researcher's anxiety while attempting to get information about his work across the boundary. In subject like Tibetan Studies, where the emphasis is more on getting in touch with original source, it becomes very difficult for a researcher to identify his need, locate the sources and get the desired information. The researcher is actively engaged in seeking and using information. At any moment in research process, the productive researcher must interact with others in his field who themselves are producers, disseminators and consumers.

The researchers themselves create sources to fulfill information needs that are not being satisfied by existing formal sources. Tibetan studies comprise of pure traditional subjects, as such there is not much scope of new inventions and developments in this field. Although new inventions are coming in light with regard to Tibetan medicine. Some new philosophy and way of thinking and interpretation may be established. The researchers in the field of Tibetan studies are the people who are involved in the study and research of languages, cultural heritage, human civilization, values and spirits of the human beings and discovering the truths. The information seeking behaviour of scientists is concerned with the persons who need information, what kind of information, for what purpose the information is required, how information is required, how information is found, evaluated and used, and the method of identification of the needs and how to satisfy them. Information seeking behaviour of researchers differ from discipline to discipline.
The researchers in the field of Tibetan studies are document oriented. They need continuous searching, locating the documents, scanning the required information and borrowing. The manuscripts are of special interest to researchers in the field of Tibetan studies. The manuscript contains the original information, the deep insights of the original authors & how the authors started the scripts, what chapters they made, at what length they proceeded and then modified & how they ended the script are required by the scholars in the field of humanities.

The researchers in the field of Tibetan studies are concerned with books-old and new, manuscript, xylographs, bibliographies, abstracting and indexing journals, guide books etc for locating the primary information. So, both the formal and informal domain of the sources is of relevance to a researcher. There is no geographical limitation to the study and research by the Tibetan scholars. Their approach may cross the boarder or boundaries of states, nations and languages. Thus literature searching and scanning is wider and vast in the field of Tibetan studies. The usefulness of the original document is more.

1.31 Tibetan Studies

Tibetan studies constitute a larger part of Indological and Buddhist studies concurrently. Tibet’s literary heritage came to be known largely as a result of political trouble in the 1950’s which caused thousands of Tibetans to flee carrying much of their literary corpus with them. Despite its relative isolation, Tibet and the wider Tibetan cultural area contributed a great deal towards world literature during the past millennium. The significance of such contributions was enhanced by native traditions of redaction, scholarship, and publishing.

From ancient pillar inscriptions, to hidden “treasure” manuscripts to block printed texts housed in monastic centres, the Tibetan literary corpus
amounts to an astonishing number of works, making it one of the great literary traditions of Asia in terms of both its size and range of influence. Not only is Tibetan literature an important repository of Buddhist teachings, but it is also a reservoir of lyrical and epic poetry, bibliographies, histories, and writings on topics as diverse as ritual, medicine, art, poetics, and geography. It has had an abiding influence not only in Tibet itself by also in those territories that constitute today's Mongolia, Nepal, Bhutan, Ladakh, Sikkim and other Himalayan areas in India as well as parts of Northern Pakistan, Western China and Southern Russia [44].

The Tibetan language which ushered in the seventh century A.D. in Tibet on the pattern of Sanskrit, delivered in such a way as to suit all forms and subjects of Sanskrit diction. With modification wrought in the late eighth century A.D. It became the richest and the most expressive language as far as translation from Sanskrit, Prakrit and Pali canons were concerned. In course of time it became one of the major Buddhist classical language and is now reckoned to encompass one of the richest collection of literature of all the world’s languages.

Despite its wide geographical range of influence, Tibetan literature was largely unknown to both scholars and public in the rest of the world—especially the west. Geographically Tibet was then isolated from the rest of the world trends and the western colonial power has no encounter with its culture.

Tibet has its own origin, myth civilization, history, culture, language, script, as well as vast literary corpus addressing various fields of human knowledge. So vast, intricate and sophisticated are the culture, religion, and history of Tibet that a new academic discipline, Tibetology, has newly emerged to address the study of this unique subject. Growing awareness about Tibet and its complex heritage has also given rise to a mushrooming of
educational centres especially in the west, dedicated to the study of Tibet's rich heritage [45].

The introduction of Buddhism into Tibet marks the beginning of literary output of the country. Prior to this period writing had not been introduced, and it was not until the advent of Thonmi Sambhot, that an alphabet was compiled from the Indian devnagari Sanskrit characters. Tibetan tongue was reduced to grammar, and translations made from Pali and Sanskrit manuscripts. Three periods of literary activity are noticeable. The first was an era of translations of Indian Buddhist classics all on the subject of religion. The translators were always lamas. The volume of Tibetan literature increased rapidly until the reign of the apostate Land Dharma, who persecuted the scholars and wantonly destroyed much of their work. The period of vandalism came to an end with his assassination. Occasionally Tibetan manuscripts are discovered affording valuable means of research into certain phases of early Buddhism in India, where their Sanskrit originals have been lost.

One of the major works in the Tibetan literary corpus is translation of Indian Buddhist works. The entire Buddhist canon, or Tripitika, as well as enormous volume of Indian commentorial literature were translated into Tibetan and compiled as the Kangyur and Tangyur, the Tibetan Buddhist canon. Nevertheless, although these translations from Sanskrit and other Indic languages constitute a major portion of Tibetan studies, Tibetans have also advanced by themselves numerous indigenous literary works pertaining to both Buddhist and other topics. These works include such as Sung-bum, or collected works of individual Buddhist and Bonpo masters, Terma or hidden treasures texts, etc.

In 1025 scholarly work was resumed with redoubled energy and the time was marked by such prolific authors as Milarepa, Atisha, and the former's famous disciple, Brom-ton. Writing s on matters other than
religions, now began to make their appearance, like works on history, books on secular verse, and folklore.

According to the renowned Tibetan scholar and Prime Minister in Tibetan Exile Government, Prof. S. Rinpoche, [46] Tibet had one of the highest rates of literacy production given its small population ratio and the short range of time over which it was developed. Similarly the renowned 20\textsuperscript{th} century Indian scholar Rahul Sanskritayan who visited Tibet thrice in 1934-35 stated that “rooms full of manuscripts arranged in tiers from floor to the ceiling and a whole generation of scholars would be needed to examine them and assess their value. The Lha-kang chen-mo of the Sakya alone could fill more than three dozen wagons of a goods train with its manuscripts”.

For proper Tibetan studies one must know four different languages. These are colloquial, the book language, the honorific, and the high honorific. In addition to these, the languages used in the Tantric cults, and the Sanskrit used for spells and the charms are necessary for the study of various phases of Lamaism. There are many local dialects, but that of Lhasa is more or less understood all over the country. Two kinds of characters are used in writing, Wu-me, or longhand and Wu-chen, or capitals. The Tibetan alphabet has 5 vowels and 30 consonants, script being from left to right as in English.

1.32 Classification of Tibetan Literature

The spread of Buddhism in Tibet transformed people’s life in Tibet in a totality of Indian Buddhist culture which inspired Indian Pandits and Tibetan translators to translate thousands of treatises from Sanskrit and other Indian classical languages in a wide range of subjects, from Tripitika and the Catustantras of Buddhist canon of Ayurveda-rasayana (medicine), Grammar, Jyotisa (Astronomy), Silpastra (Arts & crafts), Nitisasras (Works on polity and ethics) Kamasastras (Erotics) and the Mahakavyas etc. It is a well-known fact that the accuracy in translation or the faithfulness to the original, as
found in the Tibetan translations, can hardly be found anywhere in the world. Besides any translated body of canonical and non-canonical literature, a great number of commentaries and original works were brought fourth by the native scholars on the cognitive subjects of study.

In accordance with the Acharya Matreyanatha’s [47] (2nd century A.D.) classification of subjects, the whole range of Tibetan studies is to be classified in five Mahavidyas, viz.,

1. Sabdavidya (Science of language),
2. Hetuvidya (Science of logic),
3. Silpvidya (Science of arts & crafts),
4. Cikitsavidya (Science of medicine) and
5. Adhyatmavidya (Inner Science or Science of spiritual realization).

Each vidya has a number of ancillary disciplines, which encompass every aspect of life and beyond.

Thus, the Tibetan studies constitute a larger part of Indological and Buddhist studies concurrently. In accordance with the traditional Tibetan educational system, each person should possess the basic knowledge of all the five Mahavidyas, only after which, one may specialise in any selective field. As such, the several Institutions have always been established to keep the above tradition alive and to enliven the students to develop into an unfragmented personality.

The great thirteenth century Tibetan luminary, Sakya Pandita Kunga Gyaltsen [48] has defined and classified Tibetan studies into five major and five minor classes.

Major Classes:

1. The science of words: it includes linguistic and literature etc.
2. The science of syllogisms: which includes philosophy, metaphysics, epistemology etc.
3. The science of healing which includes Medicine, alchemy, etc.
4. Technical science which includes Engineering, painting etc.
5. Inner science which includes Buddhism and other spiritual science.

Minor Classes:

1. Poetics
2. Metrics
3. Drama
4. Lexicography
5. Astronomy

At this point it may be said that Tibetan studies was classified into genres by 13th century. The idea of defining literature in this pragmatic way as "texts of that which area of knowledge concerned" as in the above ten fields would be the most appropriate practice and the term coined in Tibetan "Rig-gnas" is an accurate work for studying universe of knowledge or subjects. Tibetan studies include all aspects of Tibetan recorded materials and their studies as subject matter.

Perhaps the most influential of all attempts to organize Tibetan literature is that of the edits of the bKa’ gyur and bsTan ‘gyur, the "canon" of Indian Buddhist works translation of [Buddha’s] Word, "will vary in their ordering, or in their number of sectional divisions, but they all include a section designated "Vinaya", which includes various texts on lay and-primarily-monastic conduct, one designated "Tantra", which includes all those texts in which the Buddha (in one or another of his forms) preached the Vajrayana, and a number of sections that include a variety of sutras most, though not all of them, Mahayana. Thus the Peking edition is arranged as follows:
I. Tantra (rgyud)
II. Prajnaparamita (sher bhyin)
III. Ratnakuta (dkon brtsegs)
IV. Avatamsaka (phal chen)
V. Sutra (mdo)
VI. Vinaya (dul ba)

There are of course subdivisions within each of these sections. The Tantra section, for instance tends to be arranged according to whether the text in question is a tantra or a dharani and tantras according to the class of tantras to which they have been assigned. In all this welter of divisions and subdivisions, it is difficult to articulate a single organizational principle-other than to observe that there are number of criteria that seem to be at work. Indian traditions of canonical division (whereby, e.g., Vinaya is separated from the various types of sutras) length (whereby Prajnaparamita is separated from other types of sutras). In the most general sense, it is probably fair to say that the division of the bKa’gyur is “subject”-based-tantras do differ in topic from the Vinaya, which differs from most sutras—but there seems to be little by way of a theory of genres that we might derive from that division.

The bsTan gyur ("Translations of Teachings"), which includes translations of commentaries and synthetic treatises composed principally by Indians and was first edited and organized primarily by the great polymath Bu ston rin chen grub (1290-1364), is somewhat more uniform than the bKa’gyur, in the Peking edition, it is arranged as follows:

I. Hymns of praise
II. Tantra commentaries
III. Sutra commentaries
   1. Prajnaparamita commentaries
   2. Madhyamika treatises
   3. Cittamatra treatises
   4. Abhidharma
Tulku Thondup [49] divides the corpus as under:

1. Religious literature
   A. By Origin
   B. By subject

2. Secular literature
   A. History
   B. Grammar
C. Poetic composition, metrical literature and lexicons

Tulku Thondup’s arrangement has the advantage of treating literature according to either its origin or its subject-matter, which increases our appreciation for the different lenses through which genres may be viewed and his treatment of secular literature is quite detailed.

Tibet has its own origin, myth civilization, history, culture, language, script, as well as vast literary corpus addressing various fields of human knowledge. So vast, intricate and sophisticated are the culture, religion, and history of Tibet that a new academic discipline, Tibetology, has newly emerged to address the study of this unique subject. Growing awareness about Tibet and its complex heritage has also given rise to a mushrooming of educational centres especially in the west, dedicated to the study of Tibet’s rich heritage.

While innovating Tibetan script Thumi-Sambhota composed eight grammatical texts and using the new written language a number of texts relating to Avalokitesvara were also translated. Unfortunately, only two of his classical grammar treatises have survived to present.

Another landmark in the history of Tibetan studies is the reign of the 37th king Tri-song Ide-btsan, (755-780). His reign was an exceedingly important period in the early history of Tibet in general and in the history of Tibetan Buddhist literature in particular. This period includes the activities of great Shantarakshita and Padmasambhava, the selection of first seven native Tibetans to be ordained in the Sangha, the establishment of many centres of Buddhist scholarship and the intensive translation work by Tibetan translators such as Yeshi Wangbo and Vairochana etc. and Indian pandits a vast number of Buddhist canonical and scientific works were done. Mahayogi Padmasambhava and Acharya Shantaraksita, two great Indian Buddhist masters of his time performed many deeds that laid the foundation of the
establishment of Buddhism in Tibet. Shantaraksita's disciple Kamalsila composed several inestimable texts, which would become classics in the Tibetan tradition such as the Bhavanakrama.

The next major landmark in the history of Tibetan literature centers on the lives of king Tri-ral-pa can and his elder brother Langdarma. The 40th king of Tibet, Tri-ral-pa can took advice of monks through a meeting to nourish and further the propagation of Buddhism in Tibet. Eminent scholars were entrusted with the work of translating the scriptures and many important texts on the commentaries of Nagarjuna, Aryadeva, Vasubandhu and others.

The second phase in Tibetan studies development is marked after a long silence in literary activity. This period also marked the revival or later propagation of Buddhism in Tibet. A great Indian pandit, Dipankara Sri Jnana, also known as Atisha (982-1054) visited Tibet during this phase. Atisha travelled throughout Tibet giving teaching and reviving the tradition of Buddhism for twelve years in the land of snows until his death at the ripe age of 72. In addition to preaching the Dharma, he translated many important works with the help of interpreters and also revised several earlier translations of important works. His most famous work being the Bodhipathpradipa (Lamp of the Path to Enlightenment)

During this period of the "later propagation" of Buddhism in Tibet there was a great increase in the preaching of both outer and inner yoga tantras, also as the traditions of Yoga and Annutantara-Yoga tantra. The great translator Rinchen Zangpo was mainly responsible for this development. In addition to leaving nearly two hundred priceless works of translation in the Tibetan Kagyur and Tengyur, he trained many Tibetan translators. In the wake of Atisha's journey to Tibet, numerous learned panditas arrived on the plateau from India to continue his work. Among these master Panditas who commanded the Tibetan language and translated many works were Gayadhara, Smriti Jnana Kirti, and Vibhutichandra.
Thereafter, Buddhism flowered unhindered, spread across the Tibetan plateau and produced great Tibetan masters who in turn developed different orders and lineage. In tandem, the output of Buddhist literature continued to increase uninterruptedly. By the 14th century, four prominent Buddhist schools had developed in Tibet side by side with the indigenous yet rapidly changing Bon tradition.

India during the golden period of its cultural advance gave various countries of Asia not only its Buddhist tradition, but also its arts, script, literature etc. to enrich the culture of these other territories. Evidence of this is the fact that the contemporary scripts of Burmese, Thai, Combodian and Tibetan are developed version of India's devnagari script and the form and order of vowels and consonants are in the same manner as Sanskrit-based Indic languages. Among the Tibetans, finest achievements, are the qualities of the language itself, as an essential manifestation and vehicle of its culture, the language has developed a range of dialects, styles, and registers.

During the centuries, several sacred books have been produced, the most famous being the Kangyur, or the canon of the Buddhist Law, translated from Sanskrit [50]. Only the larger monasteries have complete copies of this work, which runs to 108 volumes, treated with great reverence, next to high alter. Next in importance to the Kangyur is the Tengyur, the commentary on the canon of the Buddhist Law, in 225 volumes. All sacred books are reverenced and carefully treasured. They are read only by the lamas, who after perusing them tide the leaves, and replace the volumes in their pigeon-holes with a muttered blessing. A Tibetan book, with its wooden covers, may weigh thirty pounds or even more. It is usually a couple of feet in length, six or eight inches in breadth and six inches to one foot in depth. The large monasteries possess the best libraries, lined with pigeon-holes in which the books are stored, each volume having a silk tab on which is written the name. The scriptures themselves are usually placed on either side of altar. In some
monasteries it is considered an act of merit to carry the sacred books around the monastery buildings on certain auspicious occasions. The pages of Tibetan books are unbound, sometimes printed on both sides, sometimes only on one, a margin of about inches being left on either side of the printed matter, and half that at the top and bottom of the page. The leaves are numbered at the left edge. For reading, the book is placed either across the knees or on a low table, each leaf as completed being turned over and placed in order on one side. For storing the leaves of the more sacred books are first wrapped in yellow silk, and tied together with a ribbon, a tab on the end sewing the name. The parcel thus formed is then enclosed between two wooden slabs, the bottom one being plain, but the upper side ornamentaly carved. The wooden covers are bound together by a leather thong. All the older books in Tibet are in manuscript form, some of them being beautifully illuminated with miniature paintings of the gods and saints, various lucky signs and other conventional religious drawings.

It is not definitely known when printing or rather xylography was introduced into Tibet, nor by whom, but certainly it was earlier to the middle of the seventeenth century. No type is used but the characters are carved in relief, in reverse, on a suitably sized block of hard wood. This is then inked and impressed on the paper. The number of xylographs required to print the Tengyur with its twenty-five thousand double-sided pages is colossal. The printing establishments in Tibet are attached to the larger monasteries. The Kangyur and Tangyur are printed only at the presses of Narthang, near Shigatse, Kumbum, a large monastery in Kharm and at Derge. Derge possesses the only brass xylographs in the country. As these have not become defaced like the wooden ones, copies of the Scriptures printed here are more sought after than those of Narthang.

In spite of its size and influence, Tibetan literature was largely unknown to either scholars or the public in the West as recently as forty years
ago. This is because the period in which expanding Western colonial powers encountered and began to study Asian literary traditions—the eighteenth and nineteenth centuries—coincided with Tibet’s systematic (and virtually unprecedented) isolation from the rest of the world. A few intrepid missionaries, adventurers, soldiers and scholars did make their way to “the Roof of the World”, and some even reached “the Forbidden City,” Tibet’s capital of Lhasa. The West’s first intimations of the richness of Tibetan literature were derived from the reports of such early figures as the Jesuit father Ippolito Desideri (eighteenth century), the Hungarian linguist and explorer Alexander Csoma de Koros [51] (mid nineteenth century), and the English soldier L.A. Waddell [52] (early twentieth century). Later, in the 1930s and 1940s, the Russian historian A.I. Vostrikov and the Italian scholar Giuseppe Tucci [53] began to provide the first detailed scholarly accounts of Tibet and its literature. Still, such accounts were few and far between and until the 1960s Tibet was far less known from its own literature than from its caricatures in Western writing—whether as the inaccessible home of the “ascended masters” celebrated by Theosophists, the utopian Shangri-la of the novel and film Lost Horizon, or the land of psychic mysteries detailed in the “autobiographical” writings of T. Lobsang Rampa, who had transferred his consciousness into the body of an Englishman.

1.4 Features and Phases of Tibetan Literature

Tibetans speak a language that is generally regarded as belonging to the Tibeto-Burman branch of the Sino-Tibetan linguistic group. Though in its present form it is quasi-tonal, it appears in the more distant past not to have had tones and its relation to its linguistic cousin, Chinese, is probably distant at best. In their legends, Tibetans trace their history back several centuries before the beginning of the Common Era, but insist that they had no written language before the mid-seventh century, when the first of the great nation-building “Dharma Kings” (chos kyirgyal po) of the yar lung dynasty, Srong
btsan sam po, dispatched his minister, Thon mi Sambhota, to India to acquire a script. Thon mi Sambhota returned with a variant of the Devanagari script in which Sanskrit presently is written, thereby providing Tibetans with a means for recording their oral traditions and translating Indian Buddhist texts. The accuracy of these legends is difficult to assess—both the antiquity of Tibetan civilization and the historicity of Thon mi Sambhota have been questioned—but, as legends often do, they present us with a kind of “thematic truth” that makes them useful for explanatory purposes. Here in particular, a number of important facts about the development of Tibetan literature are revealed.

First, like the literature of virtually any other culture that possesses writing, Tibetan literature is marked by the increasing dominance of written over oral forms [54]. Once writing is introduced, the composition of written works seems to increase exponentially from generation to generation; only thus could the Tibetan literary canon have achieved the immense proportions it has. At the same time it must be noted that the written tradition was preceded by a well developed oral tradition that included not only the usual repertoire of epic poetry, folk songs and legendary narratives, but also material on such areas as law and politics. What is more, even after the introduction of writing, orality continued to be an important element of the transmission of Tibetan culture—in part because literacy never became universal and the unlettered continued to depend on oral forms for the transmission of culture in part because the Buddhist traditions that came to be so essential to later Tibetan cultural identity were themselves often transmitted orally and continue to be today, even among the most literate members of the social or religious elite. Indeed, it is an assumption of virtually all Tibetan Buddhist traditions that the most essential religious knowledge is conveyed not through texts, but in oral transmission from master to disciple. Thus, any account of Tibetan literature must balance the
observation that from approximately the seventh century onward it is increasingly a written literature, with a recognition of the continuing importance of traditions that stand outside the written corpus and which, though often invisible to the student of written texts, nevertheless influence the written tradition.

Second, like that of the ancient states of Southeast Asia, Tibetan literature is marked by an increasing Indianization, which went hand in hand with the growth of Buddhist influence. If outside cultural influences on Tibet before the seventh century were varied and relatively insignificant, from that time on as the gYar lung kings began casting about for sacred symbols and sources of magical power to support their reign, Indian models became increasingly influential. China long has served as a source of various Tibetan secular arts, from gastronomy to woodblock printing, but whether by accident of geography or the design of perspicacious monarchs, it is India that has served as the "motherland" of those cultural elements that are seen by later-day Tibetans as giving unity and stature to their civilization: a system of writing, Buddhist religion and knowledge of a wide variety of arts and sciences, arts of them directly or indirectly related to religion. If there was resistance to Indinizers during the gYar lung period from those who preferred Chinese or indigenous models after the twelfth century-when political power devolved upon Buddhist monasteries and the translation of thousands of Indian works into Tibetan was nearing completion-Indian influence became ever more pronounced and remained so even long after the disappearance of Buddhism from India in the thirteenth century. At the same time though indigenous traditions often were influenced and altered-or at least overlaid-by new genres and new approaches to old genres that owed much to India, it must be recognized that the degree of Indian influence on literary forms was directly proportional to the social and religious status of the Tibetan literature in question. The greatest Indian influence (at least in the early period) was
exercised upon a relatively small-though highly productive-elite, while among those closer to the margins of power and education, indigenous traditions maintained a continuing vibrancy.

Third to a degree virtually unparalleled in Asia, Tibetan literature is marked by a continual intensification of the influence of religious-especially Buddhist-concerns. This undoubtedly is related to the fact that, unlike in other cultures where Buddhism was a force for political unity and cultural advancement (e.g., Sri Lanka, Burma, Japan), in Tibet the Buddhist monasteries became powerful political and economic institutions as early as the twelfth century and remained consistently so until 1959.

The development of Tibetan studies and Tibetan Buddhism from the 7th century onwards is marked by two phases of growth. In the first phase, during the reign of the three Dharma kings of the Yarlung dynasty, literally hundreds of texts were translated from their Sanskrit originals. This period is known as “sNga-gyur rNying-ma” or “early-translation period”. The second phase centers around the activities of the prince Ye-shes-hod in the Guge region of Ngari, Lo-chen rinchen-snagpo, Ngoloden Sherab and Atisha. Several important commentaries on the canon of the Buddhist Law, known as Tengyur, were produced in this phase. Tengyur, the commentary on the canon of the Buddhist Law, in 225 volumes.

1.5 Status of Research in Tibetan Studies

Today in almost all the disciplines emphasis is more on applied research, where problem solving researches are being carried out but in the field of Tibetan studies fundamental research is more common. Status in this field should be seen in light of its origin and development. Basically restoration, translation and commentary of old knowledge are taken care of. Old knowledge is being revived and developed looking at present need and requirement.
Despite the increase in Western knowledge of Tibetan literature, its study is still, relatively speaking, in its infancy—especially in comparison to the work that has been done on the literature of India, China and Japan. Only a tiny portion of the vast Tibetan corpus has been translated into or discussed in Western languages, and the works that have been translated are overwhelmingly on religious and philosophical subjects. This reflects the fact that the majority of Tibetologists have been motivated initially at least, by religious curiosity and this has, unfortunately, helped create the mistaken impression that Tibetan are numerous and influential, and highly valued by educated and simple Tibetans alike, but there is much else in the corpus besides: lyric and epic poetry, at least one novel and discussions of a wide range of arts and sciences, and even erotics. Even among Tibetologists, appreciation of the range and variety of Tibetan literature has grown slowly and the evidence for it has tended to be published piecemeal, primarily in scholarly articles tucked away in obscure journals or edited volumes.

In the last forty years, all this has changed. Tibetan literature is now better known in the West than ever before. Translations of Tibetan works fill entire shelves in some Western book stores, and courses on Tibetan religion and culture have become a fixture, rather than a rarity, at many universities.

In research relating to the history of Buddhism in Tibet, great progress was made and awareness of a new methodology also seems to have been born. During the first half of period 1973–83 scholarly interest centred on the relationship between Tibetan Buddhism and Chinese Buddhism (especially Ch’an), whereas during second half interest shifted to the relationship with the philosophy of Indian Buddhism [55]. Research on the influence exerted by Chinese Ch’an Buddhism on the Buddhism of the former diffusion was undertaken by many scholars, motivated by a desire to elucidate both historically and philosophically Sino-Indian debate on Buddhist doctrine at the end of the eighth century—so-called Great Debate at bSam-yas—to which
the attention of academic circles had been drawn by P. Demieville and G. Tucci.\[56\] In all these studies, the discussion always revolved around the Tun-huang manuscript Pelliot tib. 116.

It is obvious that research on synoptical works belonging to the period of former diffusion was carried out owing to a more general interest in research on Grub-mthah literature. At present there is a growing awareness in academic circles of the need to utilize the philosophical and historical questions in Indian Buddhism. This awareness was already in evidence half a century ago among Th. Scherbatsky and other Russian scholars of Buddhism. Research centred on Grub-mthah works of the later diffusion was initiated with an interest in particular in investigating the names and characteristics of the internal divisions of the Madhyamika and Yogacara. In the field of Eroastic Buddhism, Takata Ninkaku [57] published a work in which he presented a study and partial translation of Tson-kha-pa's snags-rim. Rolf Giebel [58] also presented a synopsis and further research on the same. It should be obvious that Buddhist studies throughout the world will henceforth be strongly influenced by the study of Tibetan Buddhism and by Tibetan studies in general.

Indo- Tibetan studies have long been a feature of Buddhist studies programme at various institutions. Buddhist studies were taken care of by Professor Sylvain Levi, Professor Vidhusekhara Bhattacharya, Prof. Tan Yun Shan, Prof G. Tucci, Prof. P Bagchi and many other erudite scholars [59]. Prof. Bhattacharya established the Department of Tibetan Studies at Visva-Bharati as a separate discipline and several scholars, from India and abroad had gathered to study Tibetan studies. Presently this Department is publishing research papers, contributed by profound scholars in the national seminar on “Tibetan Studies: past and present”.

Major credit goes to Cosma De Koros [60] to attract attention of scholars for research in Tibetan studies. He continued the ancient tradition of
Indo-Tibetan studies and brought them out of the speculation of specialized learning into the open field of world scholarship. Jaschke and Franke also worked in this field and Jaschke’s Tibetan – English Dictionary may be regarded as the first on scientific lines. In Bengal, S.C. Das’s Dictionary is quite still found indispensable to scholars of Tibetology. He contributed a lot to Tibetan studies. The Sanskrit- Tibetan studies were also given a big hand by Pandit Rahul Sankrityayana in the thirties this era. He discovered about five hundred Sanskrit Buddhist texts in the various monasteries of Western and Central Tibet and those works have been preserved in the K.P. Jayaswal Research Institute at Patna.

So far as the publication of the Tibetan works in India are concerned the Tibetan type for printing is available in India easily after the arrival of the Tibetan scholars in India. The International Academy of Indian Culture, founded by Dr. Raghuvira and his able son Dr. Lokesh Chandra, has been publishing a series of important books related to Tibetan Studies. A similar series of Tibetan works with erudite introduction by Gene Smith has also been published from Delhi.

At Varanasi, the Sampurnanada Sanskrit Visva-Vidyalaya and the Central Institute of Higher Tibetan Studies are taking keen interest nowadays in restoration of works from Tibetan to Sanskrit. The Institute of Tibetology, Gangtok, and also the K.P. Jayaswal research Institute, Patna is promoting research activities in Tibetan Studies. Above all the Library of Tibetan Works and Archives at Dharmasala under the guidance of H.H. the 14th Dalai Lama is promoting and propagating Tibetology in India since its inception. The Tibetan Institute at Ladakh and Sarnath provide necessary training in theory and practice to the lamas on Tibetan Buddhism.

Tibetan medicine is an important area of Tibetan Studies in which several works could be seen as a result of the researches carried out in this field during recent past. It has been quite popular in medical science. The
Tibetan interpretation of health originates from the teachings of Sakyamuni Buddha who lived in India in the 5th century. Total health, he said is the balance between the proper function of body and mind and without developing the one the other cannot function in healthy manner.

1.6 Important Research Organisations and Institutions in the Field of Tibetan Studies

Asia

Bhutan

❖ Dechen Choeling Palace, Thimphu
❖ Legdrup Dratsang Khasaka Monastery, Khasadapchu, Thumpho
❖ National Library of Bhutan, G.P.O. Box 185, Thimphu

China

❖ Central Institute of Minorities, Minzu Xueyuan, Bai Xi, Qiao Road 27, Beijing
❖ Chinese Academy of Sciences, 5 Jianguomennei Dajie, Beijing
❖ Chinese Minorities Literatures institute, Academy of Social Science of the PRC, Beijing
❖ Buddhist Perception of Nature, 5H Bowen Road, 1st Floor, Hong Kong
❖ Dharma Group (Lam Yeshe & Zopa Rinpoche) 1501 Cambridge House, 26-28 Cameron Road, Tsim Sha Tsui
❖ Karma Kagyu (HK) Buddhist Society 3/F, Wah to Building, 42 Wood Road, Hong Kong
❖ Vajrayana Erostic Society, Kings Road, North Point, Hong Kong
❖ Wisdom Archieve, P.O. Box 98650, TST, Lowloon, Hong Kong
India

- Amnye Manche Institute, Tibetan Centre for Advanced Studies, McLeod Ganj, Dharmasala 176219 H.P. Fax 0091-1892-21073, e-mail ami@AmnyeMachen.org
- Bon Monastic Centre, Oachghat, Solan, Distt: Sirmur H.P. 173223
- Central Institute of Buddhist Studies, Leh, (J&K)
- Central Institute of Higher Tibetan Studies (Deemed University) Sarnath, Varanasi 221007 (U.P.) Tel. 0542-586148 Fax 0542-585150, e-mail cihts@gmail.com, website http://www.cihts.ac.in.
- Department of Education, Central Tibetan Secretariat, Gangchen Kyishong Daharmasala 176215, Kagra (H.P.) Tel 01892- 22572, e-mail: education@gov.tibet.net.
- Department of Health, Central Tibetan Secretariat, Gangchen Kyishong, Dharmasala H.P.
- Drepung Monastic University, Lama Camp no.2 Tibetan Colony 581411, Mundgod, Distt: N Kanara, Karnataka State.
- Drikung Kagyu Institute, Jangchubling, Post Box no. 48, Dehra Dun (U.P.) 248001
- Kirti Institute of Higher Tibetan Studies, Mcleod ganj, Dharmasala (H.P.) 176219
- K.P. Jayaswal Research Institute, Patna (Bihar)
- Library of Tibetan Works & Archives, Gangchen Kyishong, Dharmasala 176215
- Mithila Institute, Darbhanga, Bihar
- Namgyal Institute of Tibetology, Gangtok, Sikkim
- Men-Tsee-Khang: Tibetan medico and Astrological Institute, Dharmasala.
- Norbulinka Institute, Sidpur, Dharmasala Fax: 01892-21010, e-mail: norbulinga@tcrclinux.tibdsala.org.in
- Tibet House, 1 International House, New Delhi 110000, tel: 011-611515
- Tibetan Institute of Performing Arts, Mcleod Ganj, Dharmasala (H.P.)176219

USA

- Amhert College, Department of Religion, Amhert, Massachusetts 011002
- Antioch College Buddhist Studies Program, Antioch Education Abroad, Yellow Springs, Ohio 45387
- California Institute of Integral Studies, Program in Philosophy & Religion, 765 Ashbury Street, San Francisco, California CA 94117
- Columbia University, Department of Middle East Languages, Kend Hall, New York. 10027
- Fairfield University, Department of Religious Studies, Fairfield, Connecticut 06430
- Harvard University, Centre for the Study of World Religions, 42 Francis Avenue, Cambridge, Massachusetts 02138
- Noropa Institute, Department of Buddhist Studies 2130 Arapahoe, Boulder, Colorado 80302
- University of Wisconsin, Department of South Asian Studies, 1242 Van Hise Hall, Linden Drive, Madison, Wisconsin 54706.
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