MODELS OF INFORMATION SEEKING BEHAVIOUR: AN OVERVIEW

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Abstract: Information can be defined as a collection of facts organized in such a way that they have additional value beyond the value of the facts themselves. In simple word “information” can be defined as a processed data. Information, in the most restricted technical sense; it is an ordered sequence of symbols that can be interpreted as a message. This study aims to propose an overview of the various models and to find out how models are related to each other. The article specifically aims to some models studies information seeking behaviour (e.g. Wilson 1981, Krikelas 1983; Ellis 1989; Kuhlthau 1991) sense making( Dervin ), non linear (Foster) and information searching on the web (Choo, 1999, 2000) that focus on these concepts for greater clarity and an understanding of their relationship and application in Library and information science research. Discuss above models and conclusion.

Keyword: Models, Information Seeking, Information Seeking Behaviour, Digital Information Seeking Pattern

Introduction

The word “information” was apparently derived from the Latin stem of the nominative information, this noun is in its turn derived from the verb "informare". When the raw data is processed or value is added to it, data becomes information. Shannon and Weaver (1949) defined “Information as any stimulus that reduces uncertainty”. Line (1974) defined that information need is what an individual ought to have for his work, his research, his edification, his creation etc. Ford (1980) defined “information as the structure of any text which is capable of changing the image structure of recipient”. Webster’s International Dictionary (1994) defines “Information” as

a) Facts or figures ready for communication or use as distinguished from incorporated in a formally organized branch of knowledge.

b) The process by which the form of an object of knowledge is impressed upon the apprehending mind so as to bring about the state of knowing.

Ahmadi, Dileepan & Murgai (2012) carried out a study to examine the advantages of developing a simulation model of a university library, in order to balance the available resources with demand for services. The findings of the
study has shown that a simulation model of the arrivals, flow, and usage patterns of library resources by the patrons described in this research, determined that there were four critical resources.

Seleznyov and Puuronen (2003) conducted study by using continuous user authentication to detect masqueraders. A prototype of a host-based intrusion detection system was built, which detects masqueraders by comparing the current user behaviour with his/ her stored behavioural model. The model itself was represented by a number of patterns that describe sequential and temporal behavioural regularities of the users. This paper also discussed about implementation issues, and provides performance results of the prototype.

Foster (2004) constructed nonlinear model of information-seeking behaviour, which contrasted with earlier stage models of information behaviour and represents a potential cornerstone for a shift toward a perspective for understanding user information behaviour. The model was based on the findings of a study on interdisciplinary information-seeking behaviour. The behavioural patterns were analogous to an artist's palette, in which activities remain available throughout the course of information-seeking. The paper has shown that four main implications of the model as it applies to existing theory and models, requirements for future research, and the development of information literacy. Central to these implications is the creation of a new nonlinear perspective from which user information-seeking can be interpreted.

Models of information seeking behaviour

Some of the major models are: wilson’s Model of information seeking behavior, Dervin’s sense making theory, Ellis’s behavior model of information seeking; kuhalthau model of information seeking behavior, Krikelas, model of information seeking behavior, foster’s non-linear model of information seeking behavior and choo’s model of information seeking on the web.

1. Wilson’s model of information seeking behavior

Wilson’s various models of information behavior were developed over a considerable period of time. The first set of models was published in 1981 which has their origin in a doctoral seminar presentation at the university of Maryland in 1971, when an attempt was made to amp the processes involved in what was known at that time as ‘users needs research’. Wilson presented a series of interrelated models in his 1981 paper which became one of the most cited paper in the field. The review of the models presented by Wilson makes it clear that Wilson has proposed a threefold view of information seeking: the context of the seeker, the system employed and the information sources that might be drawn up.

Wilson’s model is not derived from any theory but from an analysis of detailed human information behaviour.
Wilson pointed out that information search behavior is a subset of information seeking behavior and that information seeking behavior is in turn only a subject of all possible information behavior. As such, the existence of modes of information behavior, other than information seeking is implied, consequent upon analysis of various models, Wilson has suggested that various areas of research within the general field of information behavior may be seen as a series of nested fields.

2) Dervin’s model

Dervin’s sense-making theory has developed over a number of years and cannot be seen simply as a model of information seeking behavior. According to Dervin, it is a set of assumption, theoretical 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. Dervin was one of the first researchers to formulate the sense making approach and apply it to the needs of the average citizen. His approach consisted of a set of conceptual premises and related methodologies for assessing how people make sense out of their worlds and how they use resources for problem resolution.

However, sense making is implemented in terms of four consistent elements: a situation in time and space, which identifies the differences between the contextual situation and the desired situation; an outcome, that is consequences of the sense-making process and a bridge, that is some means of closing gap between situation, a gap bridge and outcome. Dervin has expressed these elements in terms of a triangle: situation, Gap/Bridge and outcome.
The strength of Dervin’s model (fig. 2) lies partly in its methodological consequences, since in relation to information behavior, it can lead to a way of questioning that can reveal the nature of a problematic situation, the extent to which information services to bridge the gap of uncertainly, confusion or whatever and nature of the outcomes from the use of information.

3 Ellis Model

David Ellis has explained information behavior in terms of series of activities undertaken by a user:

**Starting:** The means employed by the user to begin seeking information. It stands for activities characteristics of the initial search for example asking some colleagues.

**Chaining:** Following footnotes or chains of citations or other forms of referential connection between materials.

**Browsing:** Semi-directed or semi-structured searching in an area of potential interest.

**Differentiating:** Using difference between sources as a filter on the nature and quality material examined.

**Monitoring:** Maintaining awareness of developments in a field through the monitoring of particular sources. It means keeping up to date.

**Extracting:** Selectively identifying relevant material in an information sources.

**Verifying ending:** This may be defined as typing up loose ends through a final search.
The strength of Ellis model is that it is based on empirical research and has been tested in subsequent studies. The behavioral model itself consists of the relation between these characteristics or components. These can interest in various ways in different information seeking patterns. It does not represent a set of phrases that any or all users follow when seeking information. The original model has been extended or developed based on the studies of information seeking behavior of groups of researchers including English literature researchers, physicists, chemists, engineers and research scientist in industrial development environment.

4. Kuhlthau’s Model

Kuhlthau model 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 feeling, thoughts and action clearly identifies kuhlthau’s perspectives as phenomenal rather than cognitive. The stages of information seeking behavior as per kuhlthau’s model are:
1. Initiation
2. Selection
3. Exploration
4. Formulation
5. Collection
6. Presentation

**Initiation:** A person becomes aware of a lack of knowledge or understanding making uncertainly and apprehension common.

**Selection:** A general area, topic or problem is identified and initial uncertainly often gives way to brief sense of optimism and a readiness to begin the search.

**Exploration:** Inconsistent, incompatible information is encountered and uncertainly, confusion and doubt frequently increases.

**Formulation:** A focused perspective is formed and uncertainly as confidence begins to increase.

**Collection:** Information pertinent to the focused perspective is gathered and uncertainly subsides as interest and involvement in the project deepens.

**Presentation:** The search is completed with a new understanding enabling the person to explain his or her learning to others or in some way to put the learning to use.
Users experience the information search process holistically with a interplay of thoughts, feelings, and actions. As per his model, the process of information seeking from the users’ perspective may be thought of as a sequence of choices based on the four criteria: task, time, interest and availability. The user in the process of seeking information is concerned with the task to be accomplished, the time allotted, personal interest and time available. Search process is stated as an uncertainty principle for library and information services. The uncertainty is a cognitive state that commonly causes affective symptoms of anxiety and lack of confidence. As an example, the initiation phase of the process is said to be characterized by feelings of uncertainty, vague and general thoughts about the problem area and is associated with seeking background information. The user simply attempts to recognize a need for information. The other work is to identify and 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.

5 Foster’s non-linear model

Ongoing analysis of the emergent concepts and their relationship to each other developed in clusters of behaviors, intervening factors, and contexts. The concepts were grouped into three core categories, Opening, Orientation, and Consolidation around which analysis continued to develop definitions, functions, information needs, and the contexts attributable to them.

The new model of interdisciplinary information-seeking is represented in terms of three core processes and three levels of contextual interaction. The following sections begin with the outer layers of the illustration and move towards the core processes of Opening, Orientation, and Consolidation, culminating in a summary of the whole model.
6. Krikelas’s Model of Information Seeking

The Krikelas model (1983) is an early model and was cited widely. The model contains thirteen components. It is a general model that is applicable to ordinary life. In the model the twin actions namely information gathering and information giving are given at the top. The information gathering process is carried out based on the deferred needs which are kindled by an event or environment of the person who seeks information. The model shows that the gathered information is directed to memory or personal files.
7 Johnson’s Model

There are seven factors under three headings given in the Johnson’s model (1987). The fundamental process flows from left to right. The four factors under the heading antecedents are grouped under two subheadings which are termed as background factor and personal relevance. The background factor includes the factors of demographics and personal experience and the personal relevance factor includes salience and beliefs. The second heading Information carrier factors include characteristics and Utilities of the information channels selected and used by the seekers. The last heading is information seeking actions.


Choo et al’s (1998) behavioural model of information-seeking on the Web should be regarded as an information retrieval model. The model’s name suggests it is a behavioural model. The model also has many elements similar to Aguillar’s (1967) modes of environmental scanning. Choo combined and extended Aguilar’s modes of environmental scanning and Ellis’s information-seeking behaviour model into a new behavioural model of information-seeking on the Web. Choo identified four main modes of information-seeking on the Web: undirected viewing, conditioned viewing, informal search and formal search.

Being a hybrid model based on Ellis (1989) and Aguillar (1967), the Behaviour Model of Information-Seeking on the Web demonstrates the value of using multiple methods to collect data and has the potential to be extended or mapped to other information-seeking activities such as an information search. As such the model now also provides a systematic method to examine the relationship between information needs, search strategies and search tactics.
Conclusion

The models of information behaviour focus on the micro-processes in the daily lives of users within particular contexts and social settings that could potentially influence users’ information behaviour. The models developed by Ellis and Kuhlthau specialise in the various activities involved within the information-seeking process. Dervin’s Sense-making approach. An understanding of the sense-making process is very relevant to a study of consulting engineers’ information behaviour in their quest to retrieve relevant information that could assist in problem-solving. Choo identified four main modes of information-seeking on the Web. As shown above, it is a comprehensive model and when considering the research problem, it also seems to be the best model to systematize the data collected in the current empirical study of consulting engineers. As a method, Sense-making could be invaluable in identifying consulting engineers’ specific information needs that arise from their work roles and associated work tasks and in investigating their selection of information sources. Sense-making questioning.

It is evident from the discussion that each model represents a different in nature but also an overlapping or similar approach to information-seeking behaviour research. Common factors existed in all the models are that information usage is a process involving multiple phases. These phases include the identification of data needs, the choice to use information, selecting and acquiring information sources, finding and gathering, interpreting and processing the knowledge, and putting the information to use. The outcome of the knowledge seeking process is that the utilization of the specified information to finish a task.

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