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# **An Analytical study of Information seeking behaviour models**

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## **Abstract:-**

The study explores analysis of information needs and information-seeking behaviour models. The methodology includes a study of various information behaviour models selected randomly, a systematic review of the subject literature, types of models and the exploration of relevant qualitative research methods. The paper shows how the different factors influence the information needs of user groups. Different viewers' opinions on various models have been analyzed and at the same time the testing groups of each model have also been identified. The study concludes that each model represents a different but also an overlapping or similar approach to information-seeking behaviour research. The study on conceptual analysis of 24 different types of model, models name, year and types related information behaviour, studies examining the above issue, with a focus on the scrutiny of six major models for information behavior.

**Keywords** - Information seeking, information seeking behavior, Information behaviour , Models of information behavior

## **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. A model may be defined as a structure for thinking about a perceived problem and may evolve into a statement of the relationships among theoretical propositions. Information seeking models diagrammatically represent the complex tasks of information seeking process. Most Information Seeking Behavior models are generally the statements, often in the form of diagrams that attempt to explicate an

information-seeking activity, the causes and consequences of that activity, or the relations among stages in information Seeking Behavior (Wilson, 1999). Information seeking models aim to describe the process that user follows to satisfy his information need and while fulfilling that need, he approaches towards formal and informal information sources or available services which finally results in success or failure to retrieve desired information. A number of models have been designed by various authors and researchers from time to time globally relevant to information needs and seeking behavior of users in various academic institutions.

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. 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.

### **Information seeking behaviour**

Information seeking behaviour refers to the way people search for and utilize information. The term was coined by Wilson in his 1981 paper, on the grounds that the then current 'information needs' was unhelpful as a basis for a research agenda, since 'need' could not be directly observed, while how people behaved in seeking information could be observed and investigated. However, there is increasing work in the information searching field that is relating behaviours to underlying needs. In 1999, Wilson described an outline of models of information seeking and other aspects of information behaviour, showing the relationship between communication and information behaviour in general with information seeking and information searching in information retrieval systems. It is suggested that these models address issues at various levels of information behaviour and that they can be related by envisaging a 'nesting' of models. It is also suggested that, within both information seeking research and information searching research, alternative models address similar issues in related ways and that the models are complimentary rather than conflicting. Finally, an alternative, problem-solving model is presented, which, it is suggested, provides a basis for relating the models in appropriate research strategies.

### **Models of Information Seeking Behaviour**

Most of the information seeking behaviour models are of variety: they are statements that Attempt to describe an information-seeking activity, the causes and consequences of that activity, or the relationships among stages in information-seeking behaviour. Very few models do search advance to the stage of specifying relationships among theoretical Propositions, rather, they are at a pre-theoretical stage, but may suggest relationships that Might be fruitful to explore or test. Models of information behaviour, however, appear to be fewer than those devoted to information-seeking behaviour or information searching. The models have been discussed one by one.

## Types

There are two types of Information seeking behavior:

- 1) Compulsory Information seeking behavior: Compelling statures force a person to seek necessary information. Professional working in different field are forced to access the information in their respective field of expertization to become more informatics. For example Advocates, Engineers, Sociologists, psychologists etc.
- 2) Discretionary Information Seeking: this type is different from compulsory information seeking. It entails searching for information that may not be essential and/or whose source is not known with certainly.

## MODELS DEVELOPED:

Studies in information-seeking behavior stem from concerns surrounding how people use information in their work environments. Information seeking behaviour arises as a consequence of a need perceived by the information user, who in order to satisfy it, makes demands upon formal or informal information sources or services, resulting in either success or failure

In order to study Information seeking behavior some models have been developed

- 1) Information Search behavior by Carol Kuhlthau which includes 6 stages concentrates on process
- 2) David Ellis model focus on describing the activities than a process
- 3) Episodic model developed by Nicholas J Belkin is based on intuition and insight and concentrate on interactions with information
- 4) Anomalous state of Knowledge developed by Nicholas Belkin is based on the fact that researcher recognizes a gap in the state of knowledge.
- 5) Wilson's theory of Information Behavior proposed by Thomas Wilson proposed that the Information behavior covers all aspects of human information behavior. In this model searcher interacts with information system.
- 6) Information foraging developed by Stuart Card, E.D, H Chi and Peter Pirolli derived from anthropological theories. In this model information seeker uses links, summaries and images to estimate how close they are to target information.
- 7) Life in the Round developed by Elfreda Chatman focuses on the reality at its most routine, predictable enough that unless an intial problem arises there is no point in Information seeking process.
- 8) Sense Making Model developed by Brenda Dervin focuses on the fact that information seeker makes sense of uncertain situations. It describes how the information seeker interprets the information use for the information related decisions.

- 9) Principles of least effort is based on the principle the information seeker priorities the most convenient path to acceptable information.
- 10) Foster's nonlinear model of information seeking behaviour differs from earlier model. The model was first developed within the field of information science by Allen Foster at the Department of information studies university of Sheffield.
- 11) Hall and Hofstede describes culture along several dimensions, both model have been developed in western cultures and exhibit the biases of these cultures.
- 12) Krikelas developed his model in an effort to unify the field of user studies, one that he described as lacking a single theoretical approach.
- 13) Web information behaviours of organizational workers os based on an exploratory investigation of how organizational workers utilize various web based information systems.
- 14) These new web-based models can be primarily based on detectable patterns in either individual interest or situational activity by don Turnbull.
- 15) The rational for developing a framework for work task information seeking and retrieval is grounded in a belief that IS&R.

| Sr No | Model           | Model Name                    | YEAR | REVIEW   | MODEL TYPE/ Focus  |
|-------|-----------------|-------------------------------|------|--|--|
| 1     | Hall & Hofstede | Popular model of cultural     | 1959 | Hall(1956,1966,1976, 1984)<br>Hofstede (1980,2001) | These model serve the purpose of describing a person's cultural context  |
| 2     | Gloria J Leckie | Inforamation seeking          | 1966 | Michel Foucault                                    | Research related to human societies revolves around why and how people do what they do, either individually or collectively. |
| 3     | Marcia J. Bates | Information seeking behaviour | 1970 | Armstrong & Large 1988, Harter 1986                | 1. A general model, 2.the search process 3.searching techniques, textbooks and compendia of searching methods appeared.      |

|                          |                  |  |               |   |  |
|--------------------------|------------------|--|---------------|---|--|
| 4                        | Wilson's         | Information Behaviour Models           | (1981 & 1996) | Wilson (1999)<br>Wilson (2000)<br>Case (2002)<br>Niedwiedzka (2003)<br>Ingwersen & Järvelin(2005)<br>Wilson (2005)  | Wilson's model is a static, broad, general summary model   |
| 5                        | Blom's Task      | Performance Model                      | 1983          | Blom (1983)   | Focuses on the research process as the context of information needs and the application of information to satisfy needs        |
|                          |                  |  |               | Gericke (1996)  |  |
| 6                        | Carol Kuhlthau's | Information Search Process (ISP) Model | 1983          | Kuhlthau (1992)<br>Wilson (2000)<br>Kuhlthau (2004)<br>Kuhlthau (2005)<br>Ingwersen & Järvelin(2005)  | Kuhlthau's ISP Model is: 1. A process model.   |
|                          |                  |  |               |   | 2. An analytical model suggesting a relationship between process stages and feelings, thoughts and actions. 3. A general model |
| 7                        | Dervin's         | Sense making approach                  | 1983          | Dervin (1983)<br>Cheuk Wai-Yi (1998)<br>Dervin (1998)<br>Cheuk Wai-Yi & Dervin(1999)<br>Wilson (2000)<br>Kuhlthau (2004)<br>Ingwersen & Järvelin (2005)<br>Tidline (2005) | The Sense-making approach is:  |
|                          |                  |  |               |   | 1. A process model.  |
|                          |                  |  |               |   | 2. An abstract model.  |
|                          |                  |  |               |   | 3. A summary model and does not directly suggest analysable relationships.   |
|                          |                  |  |               |   | 4. A general model of Ingwersen & Järvelin   |
|                          |                  |  |               |   | 5. An information-seeking model  |
| 6. A meta theoretic tool |                  |  |               |   |  |
| 8                        | James krikela    | Information seeking                    | 1983          | Case (2002)   | The model has been criticized for its simplicity and for its inherent character as a "Library search Model"                    |
|                          |                  |  |               | Dervin and nilan (1986)   |  |
| 9                        | Johnson's        | Behavioral System Mode                 | 1987          |   | seven subsystems:<br>1.achievement, 2.attachment-affiliative, 3.aggressive protective, 4.dependency, 5.ingestive,              |

|    |                         |  |      |   |   |
|----|-------------------------|--|------|---|---|
|    |                         |  |      |   | 6. eliminative, and 7.sexual subsystems   |
| 10 | Ellis'                  | Information Seeking Behavioural Model                    | 1989 | Ellis (1993) Ellis & Haugan (1997) Wilson (1999) Kalbach (2000) Wilson (2000) Järvelin & Wilson (2003) Meho & Tibbo (2003) Ellis (2005) Ingwersen & Järvelin(2005 | Ellis' Model is:<br>2. A summary model, not directly suggesting analyzable relationships. 3. A general model, claiming applicability and validity over a range of empirical domains |
| 11 | Eisenberg and Berkowitz | Big Six Model information seeking behaviour              | 1992 |   | Eisenberg and Berkowitz<br>1. Task Definition<br>2. Information Seeking Strategies<br>3. Location and Access<br>4. Use of Information<br>5. Synthesis<br>6. Evaluation              |
| 12 | Peter ingwersen         | Information seeking and information retrieval            | 1992 | Belkin (1990)<br>Ingwersen (1992,1996,2001) vakkari (2003)  | It is founded on the cognitive view point and based on elements of the cognitive theory for interactive information retrieval.  |
| 13 | Sandstrom's             | Optimal Foraging Theory                                  | 1994 | Sandstrom (1994) Choo et al. (1998) Sandstrom (1999) Bates (2002) Jacoby (2005)   | The Optimal Foraging Theory is a deductive middle range theory explaining particular behaviour. It is generalizing in approach  |
| 14 | Shan-Ju L. Chang        | Human information behaviour                              | 1995 | Chang & Rice 1993<br>Herner (1976)  | First analyzed the literature to develop a preliminary model of browsing.   |
| 15 | Leckie et al's          | General Model of the Information Seeking of professional | 1996 | Leckie, Pettigrew, & Sylvain (1996)<br>Case (2002)<br>Leckie (2005)   | A general model   |
| 16 | Cheuk Wai-Yi's          | Information seeking and Using (ISU) Process Model        | 1998 | Cheuk Wai-Yi (1998)   | ISU Process Model employs the Sense making approach   |

|    |                     |  |      |   |   |
|----|---------------------|--|------|---|---|
| 17 | Choo's              | Behavioural Model of information Seeking on the Web  | 1998 | Choo et al. 1998  | Behavioural model   |
|    |                     |  |      | 2000  |   |
|    |                     |  |      | Aguillar's (1967)   |   |
| 18 | Don Turnbull        | World wide web information seeking                   | 1998 | Belkin, oddy & Brooks (1982)                                | Theory and model based on assumptions or smaller-scale studies of user information needs and searching.   |
|    |                     |  |      | Kuhlthau(1991)  |   |
|    |                     |  |      | Choo, deltoe and Turnbull(1998, 1999,2000)                  |   |
| 19 | Preben Hansen       | Information seeking and Retrieval Parocesses         | 1999 | Hansen (1999) Hansen Jarvelin (2000) Bystrom & Hansen 2002) | Work task IS&R is based on ethnographic data collection   |
| 20 | Crystal fulton      | Information behaviour                                | 1999 | Chatman (1999)  | Social factors influencing that behaviour   |
|    |                     |  |      | Merton (1972)   |   |
| 21 | Julie Hersberger    | Information need and information seeking in beaviour | 2000 | Chatman (2000)  | Three new middle-range theories that better explained   |
|    |                     |  |      | Sandstrom(2004)   |   |
| 22 | Brian Detlor        | Web information behaviour                            | 2003 | Choo,s (1998) taylor's (1986,1991)                          | The theoretical model is based on two key works from the information studies  |
|    |                     |  |      | Deltor (2003)   |   |
| 23 | Allen foster        | Nonlinear information seeking                        | 2004 | Linkon and Guba(1985)                                       | The theoretical model was derived from empirical research exploring the relationship among interdisciplinary, disciplinary, behaviour and strategies.                 |
|    |                     |  |      | Foster & Ford(2002)   |   |
| 24 | Urquhart and Rowley | proposed a model                                     | 2007 |   | The macro factors include information resource design, information learning technology infrastructure, organizational knowledge and culture, policies and funding etc |

## 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 focus on the different activities involved in the information-seeking process. Dervin's Sense-making approach and



Cheuk Wai-Yi's Information seeking and using process model provide for the study of the way in which individuals perceive and bridge cognitive gaps to make sense of their world. 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.

The model of the information seeking of professionals developed by Leckie et al. is used to provide the framework for a discussion of research findings reported in the subject literature on the information needs and information-seeking behaviour of engineers. 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

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