Chapter X

Implications of the Planned-Situational Interactive IR Model

Theoretical Implications: Understanding the Nature of IR

The planned-situational model of interactive IR not only clarifies some of the important issues of information retrieval but also sets up a foundation for researchers to further explore the nature of interactive IR.

Clarification of Important Concepts

The terms "information need," "problematic situation," "anomalous state of knowledge," "goal" or "user goal," and "task," "work task," or "search task" have been widely used in IR literature, but the definitions of these terms are still ambiguous. The structure of levels of user goals/tasks helps clarify the relationship among the information need, goal, task, and interactive intention. The structure of levels of

goals/tasks confirms that one level of user goal/task cannot account for the influence of user goal/task on information retrieval. Interactive intentions are the products of levels of user goals/tasks. A user's information need cannot be discussed on an abstract level. Instead, it corresponds to levels of user goals/tasks. Long-term goals and leading search goals define the work tasks that lead users to seek information. Therefore, information need comes from long-term goals and leading search goals/work tasks. At the same time, information need is represented by current search goals/search tasks and further enriched, modified, or changed by a set of interactive intentions that emerge in the information retrieval process.

"Problematic situation" (Wersig, 1979) and "anomalous state of knowledge" (Belkin, 1980) are considered as driving forces for information retrieval. In that sense, "problematic situation" and "anomalous state of knowledge" emerge in the process of achieving their leading search goals or work tasks. In that process, users encounter a problem, and they do not have enough knowledge to deal with it. Therefore, they need to look for information to assist them in solving the problem. In most of the situations, they cannot clearly express their problems, and they have to clarify their thoughts or knowledge in the process of information retrieval.

User goal and task have been used interchangeably in IR research. As discussed in Chapter VIII, user goal is used to represent levels of goals, for example, intention (Belkin et al., 1990; Broder, 2002; Chang, 1995; Rose & Levinson, 2004), current search goal (Hert, 1996, 1997) and leading search goal (Slone, 2002). At the same time, tasks are named for work tasks (Fidel, Pejtersen, Cleal, & Bruce, 2004; Kim & Allen, 2002; Kuhlthau, 1991; Vakkari, 2001) and search tasks (Bilal, 2002; Ford, Miller, & Moss, 2002; Kim & Allen, 2002; Schacter, Chung, & Dorr, 1998; Shiri & Revie, 2003; Sutcliffe, Ennis, & Watkinson, 2000). Work tasks are introduced to distinguish between tasks and search tasks (Borlund & Ingwersen, 1997; Ingwersen, 1996; Ingwersen & Järveline, 2005; Vakkari, 2003). Levels of user goal associate user goals to the related tasks. While leading search goals refer to a user's work-task-related goal that leads to a search, current search goals refer to specific results a user intends to obtain, which is the goal of the search task. Interactive intentions are the subgoals that a user has to accomplish in order to achieve his/her current search goals. In that sense, subtasks are comparable to interactive intentions that users have to work on in order to fulfill their search tasks. The dimensions of working and search task clearly define the nature of the tasks and user goals.

Researchers have examined information-seeking strategies from different levels: (1) tactics/moves, such as Bates' (1979a, 1979b) information tactics, Shute and Smith's (1993) knowledge-based search tactics, Fidel's (1991) operational and conceptual moves, Shiri and Revie's (2003) cognitive and physical moves, and so forth; (2) information-seeking strategies, such as concept-oriented strategies (Markey & Atherton, 1978), system-feature-oriented search strategies (Chen & Dhar, 1991), the interaction-related strategies, including "interactive scanning" (Hawkins & Wagers, 1982), browsing strategies vs. analytical strategies (Marchionini, 1995), the plan