

Chapter VIII

Interactive IR Framework

Nature of IR and Interactive IR in Digital Environments

Representation and comparison are usually considered the two core processes in traditional IR. Comparison is between two representations: representation of text and representation of user need. Much of the research in IR had concentrated on indexing techniques for representing the contents of documents and retrieval techniques that compare documents to queries (Salton & McGill, 1983; van Rijsbergen, 1979). Two underlying assumptions of the traditional IR view are: (1) the information need is static and can be specified; (2) there is only one form of information-seeking behavior (Belkin, 1993).

The nature of IR is interaction. Uncertainty and interactiveness are the two major characteristics of information retrieval. Although the new digital environment is inherently interactive, most traditional IR systems only support one type of information-seeking strategy: specifying queries by using terms to select documents

from some databases. The new electronic IR systems, including some of the online databases, Web search engines, and digital libraries, start to offer people opportunities to browse information in addition to searching. However, these IR systems in a variety of new digital environments still cannot satisfy user need.

The empirical studies and theoretical research discussed in previous chapters demonstrate that digital environments require people engaging in multiple information-seeking strategies within an information seeking episode in order to achieve their tasks. These studies and research are supported by everyday information retrieval experience, such as browsing to find information/items that cannot be specified, learning collection/database description to identify relevant collections/databases to search, finding items on a specific topic, evaluating the usefulness of an item, acquiring and disseminating an item(s), and so forth.

Although researchers have created interactive IR models from different perspectives or levels and have conducted studies investigating different components and relationships of interactive IR, there are still unanswered questions in interactive IR research. Following are the major issues need to be further explored:

- What are the major components of interactive IR in digital environments?
- What are the patterns of interactive IR?
- What leads to patterns of interactive IR?
- How can macrolevel and microlevel of interactive IR models be integrated?

Planned-Situational Interactive IR Model

Overview of the Planned-Situational IR Model

The objective of the development of the planned-situational interactive IR model is to integrate macro- and micro-levels of the interactive IR model. The model focuses on the in-depth illustration of the microlevel of user goals (interactive intentions and associated retrieval tactics and their shifts, which are the products of plans and situations). Simultaneously, the social-organizational context and user-system interaction are also depicted in the model as part of the general interactive IR environment.

The planned-situational interactive IR model is established on the following theoretical and empirical basis: (1) the macro- and micro-level of interactive IR models discussed in Chapter VII, (2) the user-oriented IR approaches illustrated in Chapter I, (3) the planned model from cognitive science and situated action derived from social science discussed in this chapter, (4) the level of user goal/task and the rela-

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