Chapter XI

Conclusions and Future Directions

Conclusions and Contribution of the Book

The emergence of the Internet has allowed millions of people to use a variety of electronic information retrieval (IR) systems, such as digital libraries, Web search engines, online databases, and Online Public Access Catalogues (OPACs). The nature of IR is interaction. Interactive information retrieval is defined as the communication process between the users and the IR systems. However, the dynamics of interactive IR is not yet fully understood. Moreover, most of the existing IR systems do not support the full range of users’ interactions with IR systems. Instead, they only support one type of information-seeking strategy: how to specify queries by using terms to select relevant information. However, new digital environments require users to apply multiple information-seeking strategies and shift from one information-seeking strategy to another in the information retrieval process.

The objective of this book has been to develop a theoretical framework for interactive IR by integrating a variety of theories and empirical studies on interactive
information retrieval. This book contributes significantly to research on interactive information retrieval not only by providing a theoretical framework for understanding the nature of IR but also by offering implications for the design and evaluation of interactive IR systems. The major contributions of the book include:

1. The development of a theoretical framework for interactive IR in digital environments, especially the discussion of information retrieval as the products of plans and situations. The uniqueness of the planned-situational model is that it accounts for the social-organizational context in which user-system interactions take place and users’ information infrastructures as they apply to user-system interactions, as well as the dynamic information retrieval process signified by shifts in information-seeking strategies. This model identifies the nature of information retrieval as interaction that is codetermined by plans and situations. Levels of user goals/tasks, in particular their relationships and dimensions of work and search tasks, are the driving forces for information retrieval. In addition, the situational factors, such as the outcomes of user-system interactions and the information objects that users interact with, determine the information retrieval process in terms of how and why users shift their current search goals/search tasks and information-seeking strategies. The model further connects planned and situational factors to patterns between the microlevel of user goal—interactive intentions—and retrieval tactics and the patterns of shifts in information-seeking strategies.

2. The integration of existing theoretical frameworks on user-oriented IR across multiple disciplines. This framework is created based on the following theoretical works:
   a. The macrolevel interactive IR models (Belkin, 1993, 1996; Ingwersen, 1992; Ingwersen & Järvelin, 2005; Saracevic, 1996, 1997). Ingwersen’s cognitive model, Belkin’s episode model of interaction with texts, and Saracevic’s stratified interaction model consider the nature of IR as the process of users’ interaction with IR systems. This is the foundation for the framework. The macrolevel interactive IR models identify the major elements involved in the interactive IR process and factors affecting the interactive IR process. However, these models cannot provide detailed information about specific processes or issues, and moreover they cannot identify the patterns between information-seeking strategies and factors that lead to different types of information-seeking strategies.
   b. The microlevel of interactive IR models complements the macrolevel of interactive IR models to focus on one specific issue of interactive IR that the macrolevel of interactive IR models fail to investigate. The microlevel of interactive IR models explores the driving force of information retrieval: Vakkari’s task-based IR process (Vakkari, 2000a, 2000b, 2001,
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