Understanding and supporting information seeking tasks across multiple sources
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Citation for published version (APA):

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Summary

Driven by the explosion of information sources available on the Web, more people than ever rely on accessing online search applications to find answers buried in large numbers of documents. Because of this, research on information seeking behavior and how people use search applications is increasingly important. We now understand that there are many variants of information seeking tasks (Kellar et al. 2005), for example a simple search task: “I need the phone number of that restaurant.”, or a complex and vague one: “I need to find a good theme for the next museum exhibition.” These different tasks can be characterised by different aspects, such as: user types, e.g. experts vs. lay people and different domains, e.g. cultural heritage vs. e-commerce. Considering the plethora of information sources available online, search engines plays an important role in helping users find information from these sources.

With the ability to search across multiple sources, however, new challenges and problems arise, for example, how should information be presented in a way that users can understand the difference between different sources, or how can users navigate through multiple (unfamiliar) information sources to find their answers. End-user search across multiple sources is acknowledged to be a nontrivial problem by the human computer interaction community, e.g. (Aula and Russell 2009; Baldonado 2000), and remains a topic that has yet to be fully understood.

In this thesis, we investigate information seeking tasks across multiple sources and how they are influenced by different user types and different domains. The discussion is divided into two parts. The first part of the thesis presents two studies that contribute to understanding users’ information seeking tasks. Two different user types, domain experts and lay users, and two domains, cultural heritage and location based mobile search domain were used as case studies. The second part of the thesis discusses design requirements and examples of novel interfaces to support specific aspects of information seeking tasks across multiple sources.

The contributions of the research described in this thesis include:

• an in-depth analysis of information seeking tasks across multiple information sources for experts and lay users;
• functional and user interface requirements for future information access tools;

• reflections on the user interface evaluation methods used throughout the research

• challenges related to the implementation and evaluation of search applications for multiple sources using Semantic Web technologies.

The work in this thesis provides signposts for the large amount of work that lies ahead in this multidisciplinary research area. We identified a number of requirements that need to be satisfied when providing support for complex information seeking tasks and we have been able to investigate a few example applications. Nevertheless, we hope that the examples that have been developed will provide inspiration to the Semantic Web community as well as the Human Computer Interaction community. Through this thesis, we encourage both communities to embrace the huge challenges of developing user-centric applications for a fast growing technology.