Facilitating personal content management in smart phones
Aaltonen, Antti

IMPORTANT NOTE: You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.

Document Version
Publisher's PDF, also known as Version of record

Publication date:
2007

Link to publication in University of Groningen/UMCG research database

Citation for published version (APA):

Copyright
Other than for strictly personal use, it is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), unless the work is under an open content license (like Creative Commons).

Take-down policy
If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

Downloaded from the University of Groningen/UMCG research database (Pure): http://www.rug.nl/research/portal. For technical reasons the number of authors shown on this cover page is limited to 10 maximum.
CHAPTER 2
OVERVIEW OF THE ARTICLES

The previous chapter has provided the research questions. In this chapter, we will provide an overview to the main body of the thesis that consists of five articles.


The article reviews the evolution of the concept of context-awareness and discusses the significance of contextual information for content management. It proposes that embedding context information in the metadata of a media object could be beneficial, since it offers new ways to manage content in more automatic manner that is relevant to the user. As a part of the chapter, we introduce and illustrate how context information and metadata could aid in presenting personal content with a diary application.

The article was written in cooperation between all the authors. In addition, Antti Aaltonen created the concept, the design, and the prototype application described in the Context Comic chapter.


The chapter argues that the current context should be presented visually to the user in order to make context-aware system responses more understandable. Because context data can be obtained in large amounts from various sources, transforming the data to visual form needs to be considered in detail. We propose a refinement to the well-known Information Visualization Reference Model by Card et al. [1999] and demonstrate with different use cases how the redefined model could be applied.

Juha Lehikoinen provided helpful comments and insight to the article as well as wrote parts of the first two sections of the article.

The chapter focuses on exploring the spatial design space for small screen user interfaces by incorporating additional dimensions into the visual representation. Our aim is to present more information at once on a small display, especially as the current mobile applications for personal content fail to visualize the folder structure.

Tero Hakala was the originator of the concept and the creator of the demo used in the tests. Juha Lehikoinen and Antti Aaltonen participated actively in the concept creation and development and wrote the article together in a close cooperation.


In this chapter we concentrate on dealing with distributed media and associated devices in the home environment. We discuss how people perceive the floor plan of their homes. We introduce a simplified interactive visualization for a house and its appliances, which is more suitable for a small display and limited interaction than utilizing a traditional floor plan.

Mika Röykkee planned and conducted the user tests described, where we studied how people perceive floor plans.


The chapter focuses on searching in order to interact with a media object that is not stored in a smart phone. It presents a method for making collaborative searches (i.e. meta-search) in peer-to-peer networks. The method supports using other users’
previous searches on a same or similar topic without any additional effort from the user. In addition, we present a design for the embodiment of the method.

Antti Aaltonen created the original concept of peer-to-peer meta-searching in collaboration with Juha Lehikoinen. In addition, Antti Aaltonen participated actively in writing and commenting, especially related to collaborative searching and user tasks. Ilkka Salminen, Juha Lehikoinen and Pertti Huuskonen focused on algorithms and implementation issues. Juha Kaario provided helpful overall insights for the article.

Chapter 3, Chapter 4, and Chapter 7 are published or will appear in peer reviewed journals and two of the articles (Chapter 5 and Chapter 6) are presented in peer reviewed conferences. Only the layout and the decimal numbering of the included articles are edited for readability and the references of the articles have been moved and integrated in a single list at the end of the dissertation. The contents of the articles are the same as in the corresponding publications.

In this thesis, we discuss personal mobile content and novel ways of visualizing and interacting with it with the aid of context information and metadata. Chapter 3 defines the boundaries for the thesis. Further, this chapter introduces a novel information visualization technique for personal content that reaps the benefit of metadata. Chapter 4 provides a new approach for modeling visualization techniques for context information. Chapters 5 and 6 show examples of novel information visualization techniques for smart phones and down-scaled interaction. Chapter 7 adds a collaborative point of view for searching personal content with the aid of usage metadata.