

How Do People Organize Their Desktops?

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Abstract

Knowledge workers today have a lot of digital documents to manage, and most employ some sort of organizational system or scheme to help them. Most commonly used software provides the ability to create a hierarchical organization, but the appropriateness of this structure for personal digital document management has not been established. This research aims to understand how people currently organize their documents, identify the strengths and weaknesses of current systems and explore the usefulness of other information structures. This should provide insight into how personal digital document management systems can be made more usable.

Categories & Subject Descriptors: H5.2 Information interfaces and presentation: User Interfaces.

General Terms: Human Factors, Design.

Keywords: Document management, document organization, personal information management.

INTRODUCTION

Personal digital document management is the process of acquiring, storing, managing, retrieving and using digital documents. It is personal in the sense that the documents are owned by the user and is under their direct control, not that they necessarily contain information about the user [6]. Information overload is making document management increasingly difficult. Farhoomand and Drury found that the two most common definitions of information overload were “an excessive volume of information” (reported by 79% of respondents) and “difficulty or impossibility of managing it” (reported by 62%) [4].

One large part of managing documents involves organizing them so that they can later be easily retrieved. Most current software provides a facility to organize documents in a hierarchical set of folders. This organization scheme was adopted over 40 years ago to provide efficient access to files on disk. Although hierarchies are a very powerful and natural organizing scheme, there is no clear reason why these systems must use hierarchies, nor is there evidence that they are necessarily the best option for document management.

Understanding how the current hierarchical model supports users in organizing documents, and more crucially, where it doesn't, is important to being able to develop more usable systems that better support personal document management.

PREVIOUS RESEARCH

Previous work has included studies of how people manage and use paper documents [8, 11], email [3, 7, 12] and files [1]. Some findings included identifying two main types of structuring approaches: ‘neat’ and ‘messy’ [7, 8], as well as the use of information for reminding people of tasks or events. The two studies of files revealed that many people did not create any kind of digital organizational structure at all [1], and that people used location their knowledge of the locations of files to retrieve them again in preference to searching for file.

Technology has changed significantly since some of these findings were published. For example, in the two studies of files that were published in 1995, some of the participants were limited to file and folder names of 8 characters in length (plus a 3 character extension), and many did not have access to a hard drive to store information. Also, the command line interfaces used by some participants did not allow visualization or direct manipulation of information structures. The features offered by current document management software are significantly different from software 8 years ago; hence user interaction with this software is likely to have changed.

Other researchers have created experimental prototypes to explore alternative systems of organizing information. These include primarily logical/topical [2], temporal [5] and spatial metaphors [9, 10]. Many of these researchers appear to operate from the premise that the current predominantly hierarchical system of organization is inadequate for document management, and propose a (sometimes radically different) alternative organizational scheme. Unfortunately, there is not enough information about how people currently use the hierarchical model, and where and how it is inadequate. Additionally, little attention has been given to the fact that current systems do provide some (albeit limited) abilities to organize spatially (on the desktop and within folders) and temporally (sorting by date last modified/accessed) and logically/topically (through folder and file names).

RESEARCH AIMS

The aim of this research is to understand how to build more usable software for personal digital document management. The specific objectives of this research are:

- Understand how people organize their personal digital documents with current software, particularly how spatial, temporal and logical/topical facilities are used.
- Identify where current document management software is adequate and where it is inadequate.

METHODOLOGY

This research uses a number of different methodological techniques in order to provide rich data about the phenomenon of document management. These include semi-structured interviews, observation, card-sorting and automated data gathering using a software tool. The participants are staff at the University of Auckland Business School, which uses the Microsoft Windows operating system. Twenty participants in total will be included in the study, ten academic and ten administrative staff. A screening questionnaire will be used in order to include staff with a wide variety of approaches to information management within each group.

Interviews

The semi-structured interviews ask the participants basic demographic information and then the participants are asked to give a tour of their file systems and email. (File System Snapshot software is run during the interviews, see below for details). These interviews will be fully transcribed and analyzed. This will be used to understand how people structure their file systems, and how these structures have evolved over time. These techniques should provide a thorough understanding of the subjective aspects and rationale for people's current organizations.

File System Snapshot

This software collects information about the folder structures and file names in the file system, and the folder structures used in the email system. It also stores the structure of Internet Bookmarks, My Favorites and captures a screenshot of the Desktop. Software to analyze this data is being written as part of the research. The information gathered will provide an objective empirical description of how people currently organize information, which can be compared and contrasted with the subjective description gained from the interviews.

Observation/Monitoring

Software will be installed on the participants' computers that will track their document management activities over an extended period of time (1-5 days). This will record all document open and close events, document creation, deletion, renaming, copying and moving. In addition, it will record a screen-cam video of all activity that takes place in Windows Explorer, giving direct evidence of how people search for documents. The information gathered will provide objective data about how people use their documents.

Card Sorting

Some interview participants will be followed up with a card sorting exercise. This will involve a number of folder names being extracted from their file systems, and they will be asked to perform a card sorting exercise to structure them. This

should help to expose whether their actual folder structures match the structures produced when the organization is not constrained in any way (in the card sort).

PROGRESS

The File System Snapshot software has been written, and interview and file system data have been collected for four participants as a pilot study. Analysis of this data has commenced.

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