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Long-term Evaluation of tagstore

Master's Thesis

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Abstract

This thesis presents a long-term evaluation of the research software tagstore². It is a new way of storing and retrieving files and folders. When files are stored, they are tagged by the user. After that, tagstore automatically creates navigational structures for re-finding. These navigational structures provide users with multiple paths to a file or folder. Therefore, users are able to use associative navigation.

After presenting tagstore and the principle behind it, TagTrees, selected field tests are described. Based on the evaluation of those previous field tests, a test methodology for the long-term evaluation of tagstore was developed. The experiences gained during this field test led to suggestions for the execution of future field tests.

Compared to two previously conducted laboratory experiments, where users had a controlled environment and detailed instructions for the use of tagstore, test users of this field test could work with tagstore the way they wanted. This resulted in the finding of many software problems and usability issues. It also provided some suggestions for future improvements. Although users experienced more problems than during the laboratory tests, the feedback for tagstore was nearly as positive. If all software bugs were fixed and tagstore were better integrated into operating systems, it could be of great benefit for many people.

²<http://tagstore.org/> – retrieved on 2012-08-15

Kurzfassung

Diese Arbeit beschreibt einen Feldtest der Forschungssoftware tagstore ³. Diese Software ermöglicht neue Wege um Dateien und Ordner zu speichern und wiederzufinden. Wird eine Datei gespeichert, so wird sie vom Benutzer mit Schlagwörtern (Tags) versehen. Danach werden von tagstore automatisch Navigationshierarchien erstellt. Diese Hierarchien bieten mehrere Wege zu einer Datei oder einem Ordner. Benutzer können so über Assoziationen mit diesen Schlagwörtern zu ihren Dateien und Ordnern navigieren.

Nachdem tagstore und sein zugrundeliegendes Prinzip, TagTrees, vorgestellt wurden, werden einige Feldtests beschrieben werden. Basierend auf der Analyse dieser früheren Feldtests wurde eine Testmethode für diesen Feldtest entwickelt. Die Erfahrungen, die während der Durchführung dieses Feldtests gesammelt wurden, führten zu Vorschlägen für die Durchführung zukünftiger Feldtests.

Verglichen zu den zwei früher durchgeführten Labortests, wo Benutzer eine kontrollierte Umgebung und detaillierte Instruktionen vorfanden, hatten Feldtestnutzer die Freiheit tagstore so zu benutzen, wie sie es wollten. Dadurch wurden wesentlich mehr Usability Probleme und Softwareprobleme entdeckt. Außerdem wurden wichtige Erkenntnisse für zukünftige Verbesserungen von tagstore gewonnen. Obwohl die Feldtester mehr Probleme mit tagstore hatten als die Labortester, fiel ihr Feedback ähnlich positiv aus. Wenn die Software komplett ausgereift wäre und besser in Betriebssysteme integriert wäre, könnte Sie für viele Menschen eine große Bereicherung darstellen.

³<http://tagstore.org/> – retrieved on 2012-08-15

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1. Introduction

1.1. General Introduction

With the growing prevalence of computers in our everyday life and the increase in system performance and storage size, the amount of files, which users handle, increased dramatically. Cho, Kim, and Lee (2009) found out, that in a period of only three years (2006 to 2009) the size of data backup on two large-scale realistic cluster systems surveyed by the study has “increased from 400-500 megabytes to 1 gigabyte or more”.

This puts a lot more pressure on PIM systems than in previous times. Current PIM systems experience a lot of challenges, that are described in the following paragraphs. The research software tagstore is one approach, to meet those challenges.

Leung et al. (2008) discovered, that the file system workload has changed in the past decade. Workloads are more write-oriented compared to previous studies like Agrawal et al. (2007) and others¹. File size and file life span have increased whereas file re-opening has decreased. “Over 66 % are re-opened once and 95 % fewer than five times” (Leung et al., 2008). File re-opening was defined as opened more than once during the trace period.

Another challenge is the file overload, users are often experiencing. There are too many files and not enough time to keep them all in a tidy structure or to remove them. What increases the challenge is the fact, that the cheaper storage becomes, the more reluctantly users delete files (D. Barreau, 2008; Leung et al., 2008). The less users delete, the more storage they need. The

¹Baker et al., 1991; Douceur and Bolosky, 1999; Roselli, Lorch, and Anderson, 2000; Satyanarayanan, 1981; Vogels, 1999.

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demand for bigger hard disk drives rises, the prices drop and users buy an even bigger storage device, where they can pile even more files.

Although various studies² showed, that the amount of files users handle, has increased and will do so, storage systems did not keep up³ ⁴. Users store files basically in the same way as they did many years ago, through storing them in more or less detailed folder structures. Therefore, re-finding data becomes a strenuous ⁵, if not nearly impossible task, regarding archives of thousands of images, music files or other personal data.

By now users are used to this practice of storing and re-finding their files in huge folder hierarchies and have developed different strategies to cope with the shortcomings of this method (Lansdale, 1988). Still the question remains if it is the best way of handling personal data.

Desktop search engines could be one possible solution, but users strongly prefer navigation through folder hierarchy over teleporting⁶. Searching is often only the last resort, when users cannot find a file any other way and will most certainly not replace navigation.

All these challenges and some more described in Voit, Andrews, and Slany (2009) led to the idea of TagTrees. The TagTrees concept and the research software tagstore, implementing the concept, provide users with a new approach of filing and re-finding items. With tagstore, files are not bound to be placed in only one folder, tagstore supports multiple ways leading to a file. It supports users favorite file re-finding method (navigation) and the option of automatically added expiry dates should help users reducing their amount of files. For more details about TagTrees and tagstore see Chapter 2.

²Gibson, Miller, and Long, 1998; Boardman and Sasse, 2004; Leung et al., 2008; Cho, Kim, and Lee, 2009.

³Voit, Andrews, and Slany, 2009.

⁴<http://www.businesswire.com/news/home/20070104005159/en/Managers-Majority-Information-Obtained-Work-Useless-Accenture> – retrieved on 2012-09-12

⁵Feldman and Sherman (2001); Morville and Rosenfeld (2006, pp. 11–12); Baeza-Yates and Ribeiro-Neto (2011, pp. 642–643); Jones (2007, p. 218)

⁶Bergman et al., 2008; D. Barreau, 2008; Chau, Myers, and Faulring, 2008; Teevan et al., 2004; Alvarado et al., 2003.

1.2. Motivation

The main motivation for this thesis were the results of two preceding laboratory tests concerning tagstore (De Vocht et al., 2012; Harzl et al., 2012). Both tests showed that users preferred tagstore over Windows Explorer, although filing with tagstore needed more time. While conducting these tests one issue arose. When test users were asked how they liked the test and tagstore, they often answered: They did not use their own files on their own computer (Voit, Andrews, and Slany, 2011). So it was more difficult for them to judge, if tagstore could be useful for them. Some users even stated, that they would not file any of the given test items (Harzl et al., 2012) and rather delete them all.

This thesis aims to provide information about how users like tagstore and how they benefit from using tagstore when testing it with their own computer and their own files. Therefore, a field test with 18 test users was conducted, where people used tagstore for three weeks at home.

1.3. Vocabulary

Associative navigation: On the contrary to common folder structures, where the specific path to each item has to be remembered, associative navigation offers various possibilities to retrieve an **item**. Categories and sub-categories are selected according to the association to the requested item. The more sub-categories are chosen the more detailed the implicit query becomes and the fewer results are displayed. At each level a user is able to retrieve the requested item through scanning through the displayed items.

Categorizer: People, who categorize items using tags, are called categorizers. According to Körner et al. (2010) categorizers “use tags to construct and maintain a navigational aid to the resources they annotate”. They try to avoid synonyms and usually have a smaller and more stable vocabulary than describers (Körner et al., 2010). Describers use more and dynamic tags,

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their structure changes over time. Structures of categorizers are better suitable for navigation and browsing than for search and retrieval. Search and retrieval are better supported by the structures of describers, due to their detailed description of resources. Tag reuse is supposed to be frequent for categorizers and rare for describers. Tags used by describers tend to be more similar to other describers' tags while categorizers prefer their own tagging vocabulary.

Controlled vocabulary (CV): A restriction of tagging vocabulary to a defined set of tags is called controlled vocabulary (CV). A controlled vocabulary can help avoiding homonyms, synonyms and singular/plural problems.

Describer: People who use tags for describing items are called describers. For more information, see [categorizers](#).

Desktop search (engine): Software products providing a search interface for local [items](#) are called desktop search engines. These engines scan the local system for items, matching the search query formulated by the user. Results matching the query are then presented to the user.

FAQ: Frequently Asked Questions

File: "A file is the smallest (user-relevant) information-containing entity within a file system. End user applications store their data in files that have special file formats." (Voit, 2012)

Filer: People, who tend to organize things in well-developed categories are called filers (Malone, 1983). People showing other organizing behavior are called [pilers](#) or [spring cleaners](#).

Folder: A folder can contain various files and various sub-folders.

Folder hierarchy: Folder hierarchies contain a strict hierarchy of folders containing other folders and/or files.

GUI: Graphical User Interface, a computer interface displaying graphical elements for user interaction.

Item: In this thesis an item is the umbrella term for [files](#) and [folders](#).

Metadata: Metadata are data about data. They describe the content and/or

1.3. Vocabulary

the structure of other data.

PDF: Portable Document Format

Piler: People, who tend to keep items and documents in piles are called pilers. Pilers do not develop detailed categories. A few categories like *things to do*, *urgent projects* etc. suffice and items are retrieved by searching within those piles.

PIM: “Personal Information Management (PIM) is an umbrella term used to describe the collection, storage, organization and retrieval of digital objects (e.g. files, addresses, and bookmarks) by an individual in their personal computing environment” (Boardman and Sasse, 2004; Lansdale, 1988)

Spring cleaner: People, who then tend to put items in piles, but regularly file items from those piles into categories, are called spring cleaners.

Store: A store is a folder on a local hard disk drive, where users can manage their items. It includes a tagstore specific folder, the central storage folder and the navigational hierarchies.

Tagging: Adding [metadata](#) to items is called tagging.

Test Person (TP), Test User: Both terms are used in this thesis and mean the same, people, who participated in the field test.

Vocabulary problem: This problem is described in Furnas et al. (1987) as follows: “Many functions of most large systems depend on users typing in the right words. New or intermittent users often use the wrong words and fail to get the actions or information they want. [...] The fundamental observation is that people use a surprisingly great variety of words to refer to the same thing. In fact, the data show that no single access word, however well chosen, can be expected to cover more than a small proportion of user’s attempts.”

1. Introduction

1.4. Structure of the Thesis

Chapter 2 gives a detailed description of TagTrees and tagstore. The basic concept, features, configurations and limitations of tagstore are explained in Chapter 2.

Selected long-term studies are evaluated in Chapter 3. First of all, some studies are described individually. Afterwards the different analysis criteria are presented and classification schemes are developed. The chapter concludes with a comparison of the different field tests on basis of the previously developed classification schemes.

The subsequent Chapter 4 describes the methodology of the field test. It consists of two major parts, one being the description of the preliminary work, and the other one being the description of the actual testing process.

Chapter 5 and Chapter 6 present the results of the long-term evaluation of tagstore. The analysis and visualization of the questionnaires and log files are described.

The final Chapters 7 and 8 conclude the thesis. The first discusses lessons learned, the latter summarizes the test results and gives an outlook on future development potential of tagstore.

2. TagTrees and tagstore

This chapter provides information about tagstore and the concept behind tagstore, TagTrees. Installation, usage, features and configurations of tagstore will be presented and limitations of tagstore will be discussed as well.

2.1. TagTrees

TagTrees is “a new concept for storing and retrieving files and folders using tagging and automatically maintained navigational hierarchies” (Voit, Andrews, and Slany, 2011). It is compatible with all current operating systems, such as Windows, Mac OS X and Linux. An Android version is in development.

For an example of TagTrees on a Windows system see Figure 2.2. Figure 2.1 shows the main concept of TagTrees. Items are accessible not only through one path any more. Instead, there are multiple paths to any item (Harzl et al., 2012; Voit, Andrews, and Slany, 2011; Voit, Andrews, Wintersteller, et al., 2011; Voit, Andrews, and Slany, 2012; Voit, 2012).

In TagTrees all files and folders are stored in a central storage folder. After storing the files in this folder “TagTree takes user-supplied tags and automatically generates and maintains a navigational tree (folder) structure of tags” (Voit, Andrews, and Slany, 2011). This structure is mapped directly to a standard folder hierarchy. Therefore, there is no need for a special user interface and TagTrees is compatible with all standard applications.

“The TagTree folder hierarchy consists of one folder path for each permutation of the tags associated with the item. Within each folder along each

2. TagTrees and tagstore

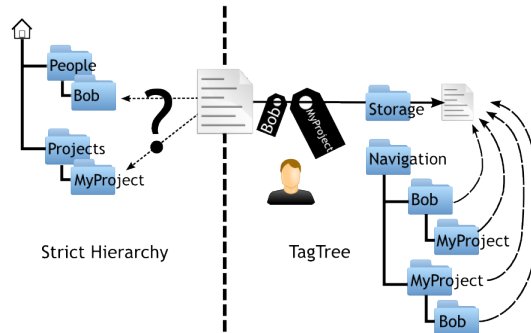


Figure 2.1.: The TagTrees concept when storing a file Bob's ideas about MyProject.txt. Derived from (Voit, Andrews, and Slany, 2011).

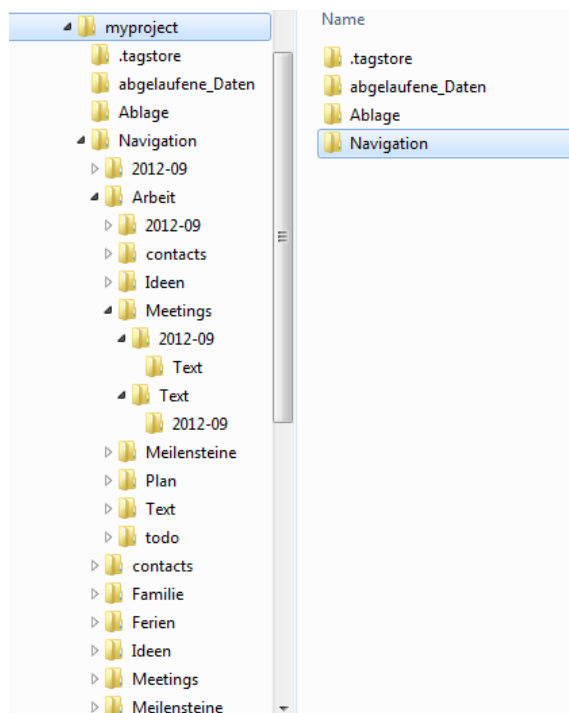


Figure 2.2.: An example TagTree in Windows.

path, a symbolic link is created pointing to the original item stored in the central storage folder” (Voit, Andrews, and Slany, 2011). Users do not have to remember their folder structure and where they filed a specific file. It is possible to define a query as you go, every folder the user chooses, makes the implicit query more specific. Wherever in the structure the requested file is found, the user can access it directly, there is no need to follow the folder path to its end (Harzl et al., 2012; Voit, Andrews, and Slany, 2011; Voit, Andrews, Wintersteller, et al., 2011; Voit, Andrews, and Slany, 2012; Voit, 2012).

2.2. tagstore

The research software, called tagstore, implementing the TagTrees method was developed by the Institute for Software Technology of Graz University of Technology.¹ It contains two user interfaces, tagstore Manager and tagstore Dialog. With tagstore Manager stores are created and configured, with tagstore Dialog users can tag their items. The main purpose of tagstore is to act as a testing framework for TagTrees. So far, it was tested in three tests, a long term test and two laboratory tests (De Vocht et al., 2012; Harzl et al., 2012). Between these tests several bugs were fixed and tagstore’s usability was improved. The long-term test users gave direct feedback, which led to some of the improvements of tagstore and a collection of best practices and FAQs ². The results of the two laboratory tests are described in detail in De Vocht et al. (2012) and Harzl et al. (2012). The feedback of previous tests led to the development of an assistant for the first start of the tagstore Manager and a help tool. The recommendation system for tag recommendations was improved as well. For more information on the assistant and the recommendation system see Pirrer (2012) and Schober (2012).

¹Harzl et al., 2012; Voit, Andrews, and Slany, 2011; Voit, Andrews, Wintersteller, et al., 2011; Voit, Andrews, and Slany, 2012; Voit, 2012.

²<http://tagstore.ist.tugraz.at/de/faq> – retrieved on 2012-09-18

2. TagTrees and tagstore



Figure 2.3.: License agreement for the installation of tagstore.

2.2.1. Installation

Various installer packages for the installation of tagstore were generated, installers for different operating systems (Windows, OS X) and for different languages (German, English). The object of this thesis was the German Windows installer, so this description will focus on that specific installer package. Figure 2.3 shows the license agreement for the installation of tagstore. The following software packages were necessary for the test and were included into the installer:

- Python 2.7.3
- PyQt-Py2.7-x86-gpl-4.9.4-1
- pywin32-214.win32-py2.7

2.2. tagstore

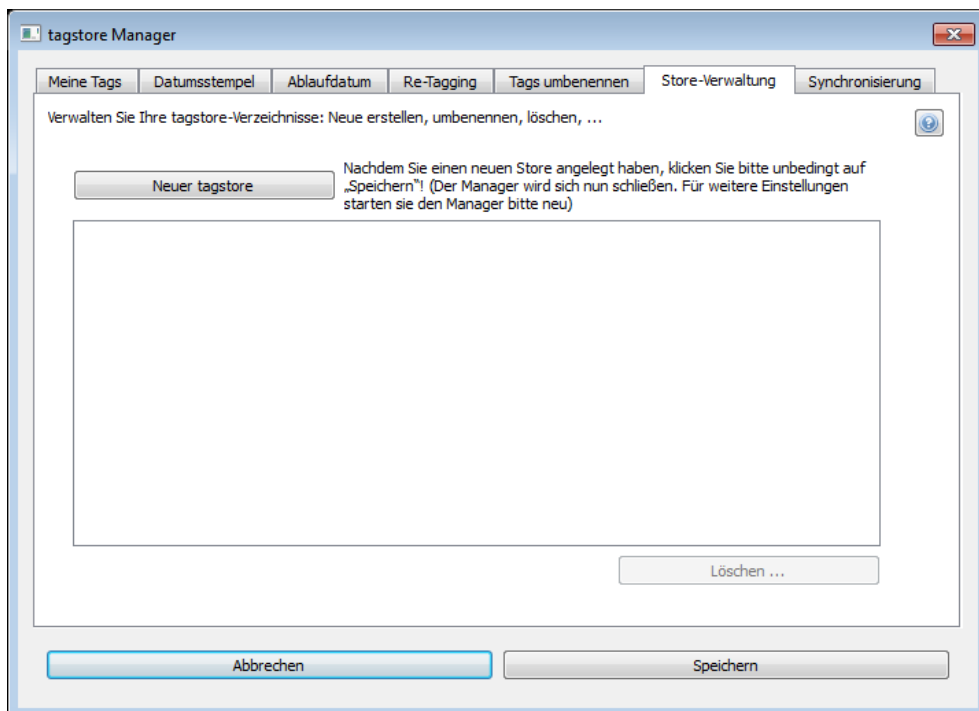


Figure 2.4.: Creating a store with tagstore Manager.

2. TagTrees and tagstore

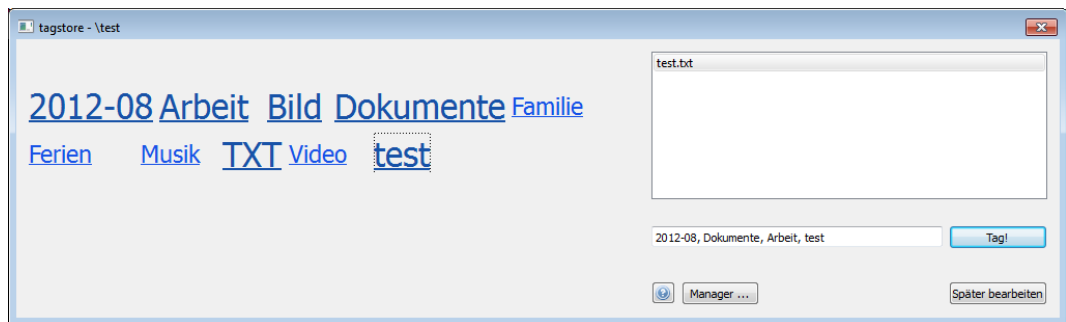


Figure 2.5.: tagstore Dialog window

2.2.2. Setting Up the First Store

After installing tagstore, a system reboot is necessary. Afterwards a store has to be created. This task is done with the tagstore Manager, see Figure 2.4. When running tagstore Manager for the first time an assistant (see Section 2.2.4) is started as well. It helps users creating and configuring their first store with tagstore Manager. Most of tagstore's features (see Section 2.2.4) can be changed in tagstore Manager.

2.2.3. Usage

The tagstore Dialog background process is started at start-up of Windows so there is no need for the user to run tagstore manually. After adding new items to the central storage folder of a user store, the tagstore Dialog window opens automatically. Users can add tags to items as shown in Figure 2.5. It is possible to add one or more tags to a particular item or several items. When clicking the *Tag!* button tagstore creates an associative navigational hierarchy, where multiple paths lead to a specific file (Voit, Andrews, and Slany, 2011), based on these tags. After tagging the last item in the list, the tagstore Dialog window closes. A click on *Später bearbeiten* (*Postpone*) saves the item list for later tagging and closes the tagstore Dialog.

After filing their items users can re-find their files intuitively via associative navigation in TagTrees and do not have to remember their folder hierarchy.

The folders, which contain TagTrees are called *Navigation*, *Beschreibungen* (English: *Descriptions*) and *Kategorien* (English: *Categories*), depending on the chosen configuration (see Section 2.2.6). Another way of re-finding files is using the central storage folder. All filed items can be found there as well. Copying, sending via email, deleting and renaming items are restricted to the central storage folder only.

2.2.4. Features

Features of tagstore Dialog and tagstore Manager will be described in the following sections. Date stamps, expiry date, re-tagging items and editing tags are features and tabs of tagstore Manager. The assistant is also part of the manager and executed on the first run of tagstore Manager. The tag cloud and tag completion are features of tagstore Dialog. Both user interfaces contain a help tool. The feature *Synchronisierung* will not be described as it was not used in this test and is currently in beta status.

Date stamps

Users can decide to add the current date stamp automatically as a tag. As can be seen in Figure 2.6 the tagstore Manager offers the option to define different formats of the date stamp and it is even possible to set it invisible in the tagging Dialog. With the help of date stamps, users can re-find their files through remembering the time line of the file.

Expiry Date

If users define an expiry date tag, (see Figure 2.7) tagstore removes these files from the store automatically. When reaching the expiry date, the item is automatically moved to an *expired items* folder. There, users can keep these items or delete them permanently. This possibility of automatically maintained “forgetting” and giving files only time-restricted importance is seen as quite important by some studies (D. Barreau and Nardi, 1995;

2. TagTrees and tagstore

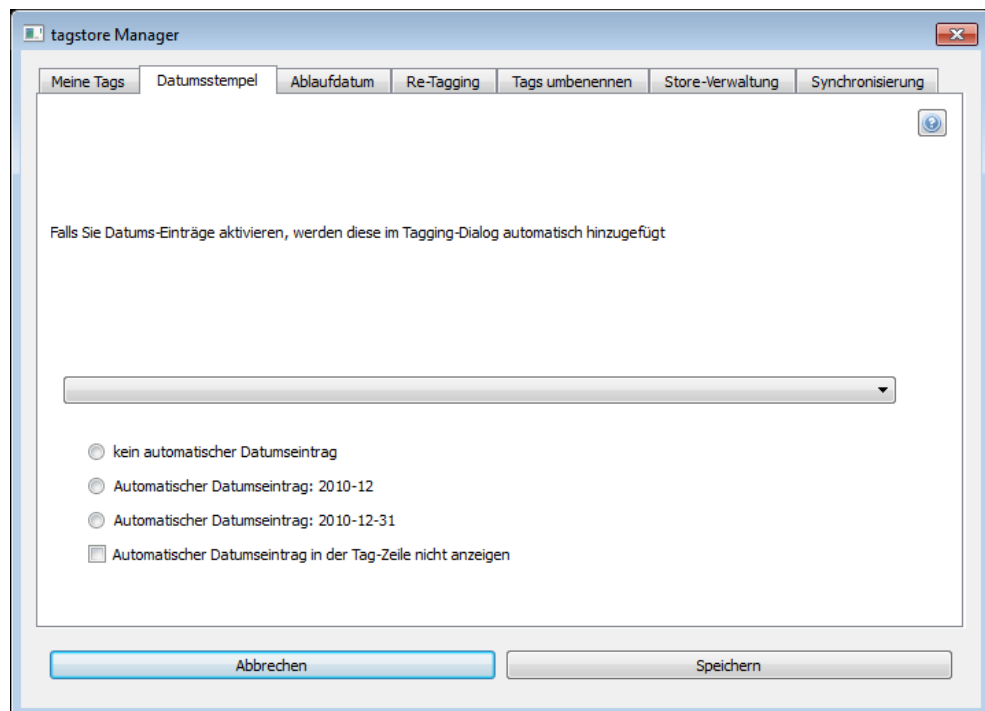


Figure 2.6.: Automatic date stamp feature in tagstore.

2.2. tagstore

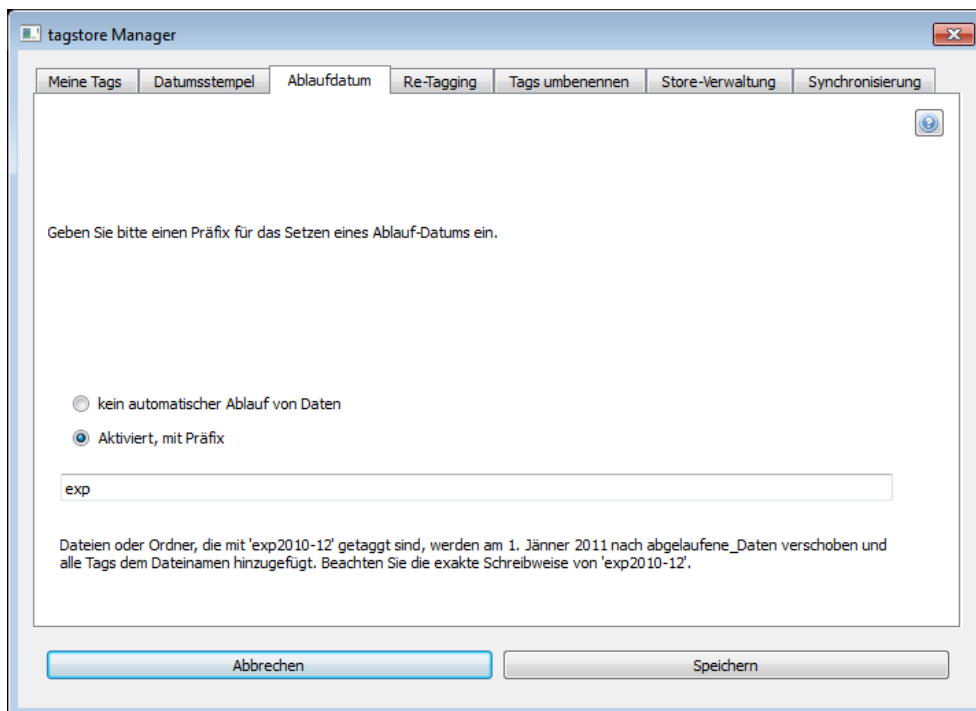


Figure 2.7.: Defining an expiry date tag in tagstore.

2. TagTrees and tagstore

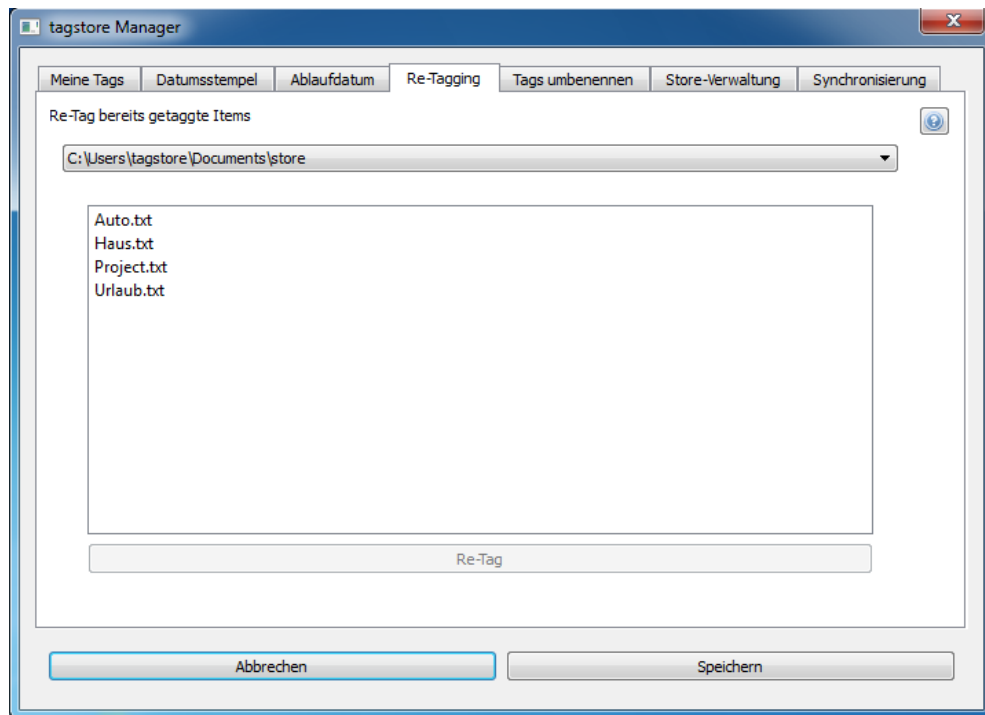


Figure 2.8.: Re-tagging items in tagstore.

Morville and Rosenfeld, 2006). It helps users to “define explicit temporal ranges of interest for information” (Mayer-Schoenberger, 2009).

Re-tagging Items

Figure 2.8 shows the interface for re-tagging items. If a user is not content with the tags assigned to an item, the user may re-tag the item using the tagstore Manager. To achieve this, the specific item has to be selected and the re-tagging process initialized with a click on the button “Re-Tag”. The tagstore Dialog window will open and the item can be tagged as usual.

2.2. tagstore

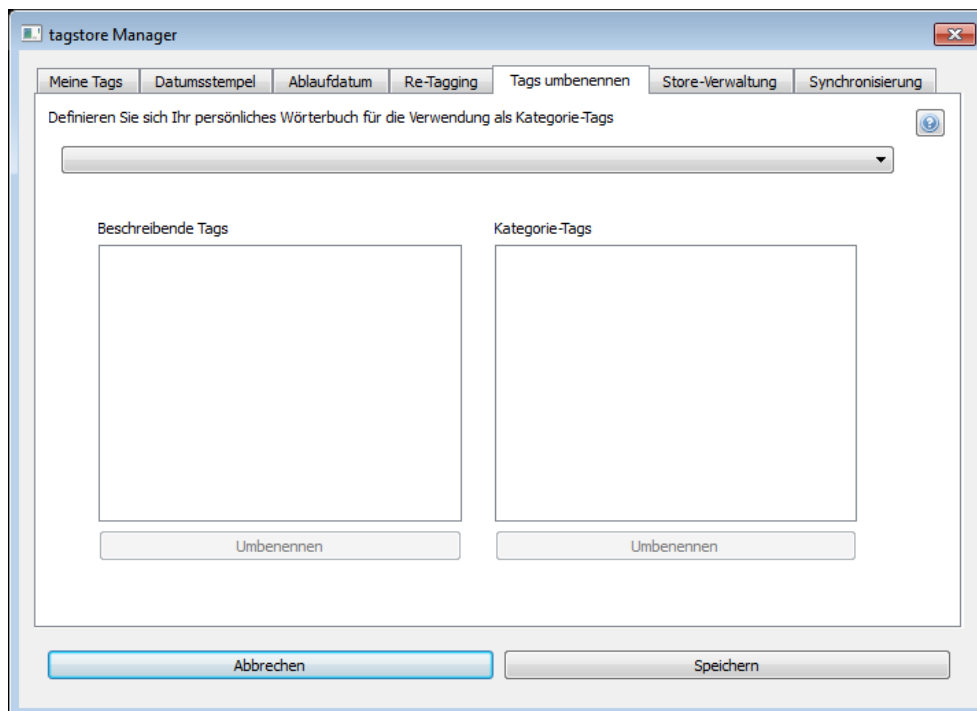


Figure 2.9.: Editing tags in tagstore.

2. TagTrees and tagstore

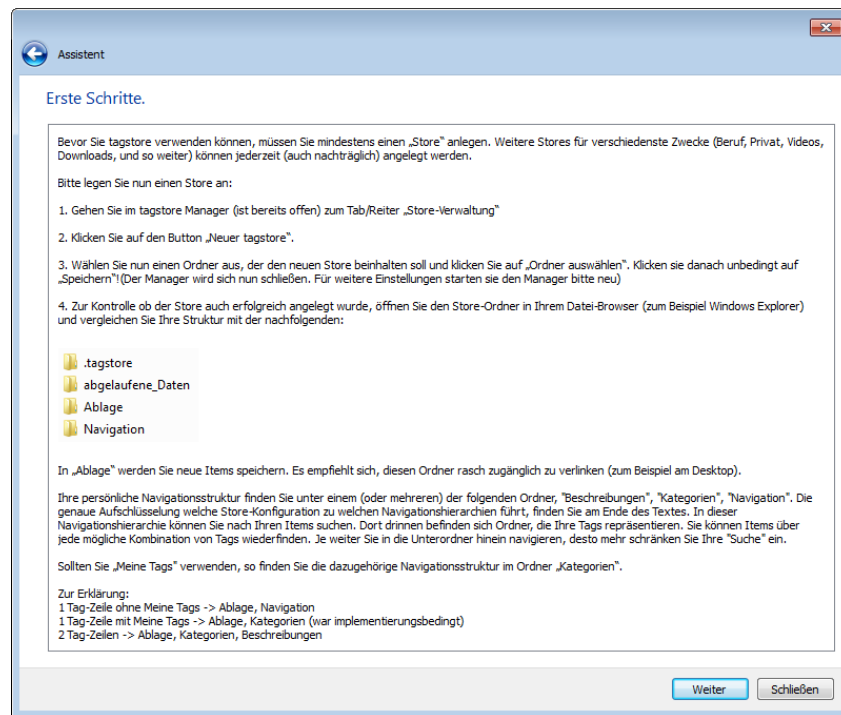


Figure 2.10.: The new tagstore assistant explaining the first steps to create a store.

Editing Tags

The tagstore Manager enables users to edit previous assigned tags. Users can change spelling, from singular to plural and vice versa or they can rename a tag completely, for example from *university* to *education*. It is also possible to delete, split or combine (renaming a tag to an existing one) tags. Corresponding items are automatically re-tagged with the new version of the tag.

Assistant

For the field test an assistant for tagstore was developed. Its purpose is to explain the basic principles of tagstore to the users and to help them create

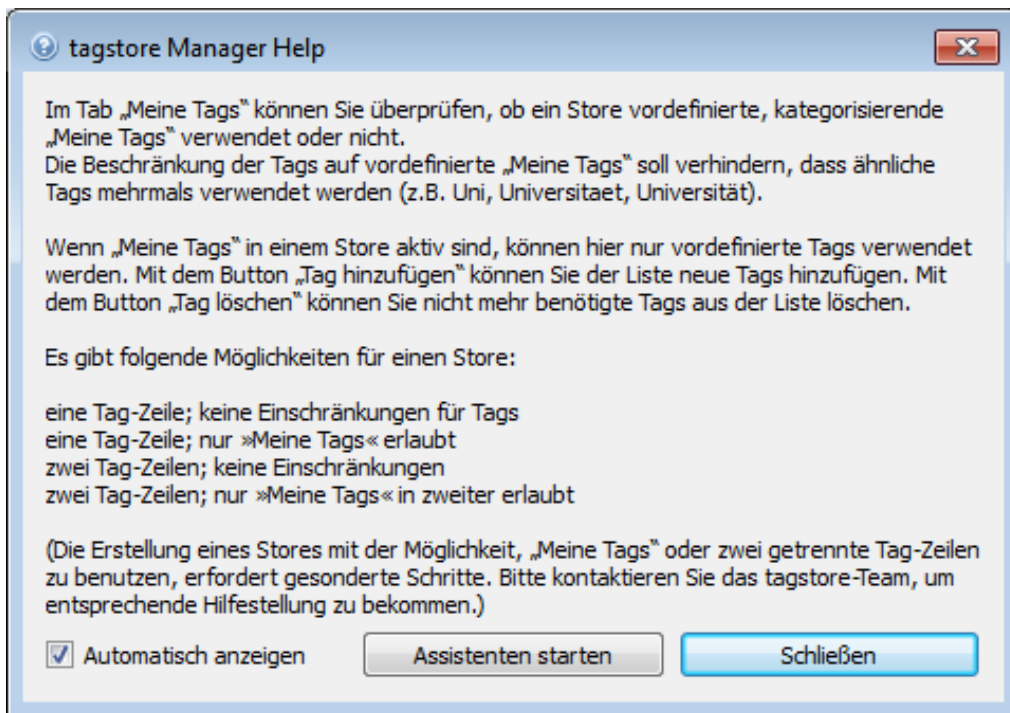


Figure 2.11.: The tagstore Manager help.

their first store. The assistant (see Figure 2.10) opens automatically when the tagstore Manager is started for the first time. If a user wants to return to the assistant later, it can be reached via the help Dialog (see Figure 2.11).

Help

The tagstore Manager help, see Figure 2.11, and tagstore help, see Figure 2.12, are opened automatically with the tagstore Manager and the tagstore Dialog on their first start. Later on they can be reached with a help button (visualized by a question mark icon).

2. TagTrees and tagstore

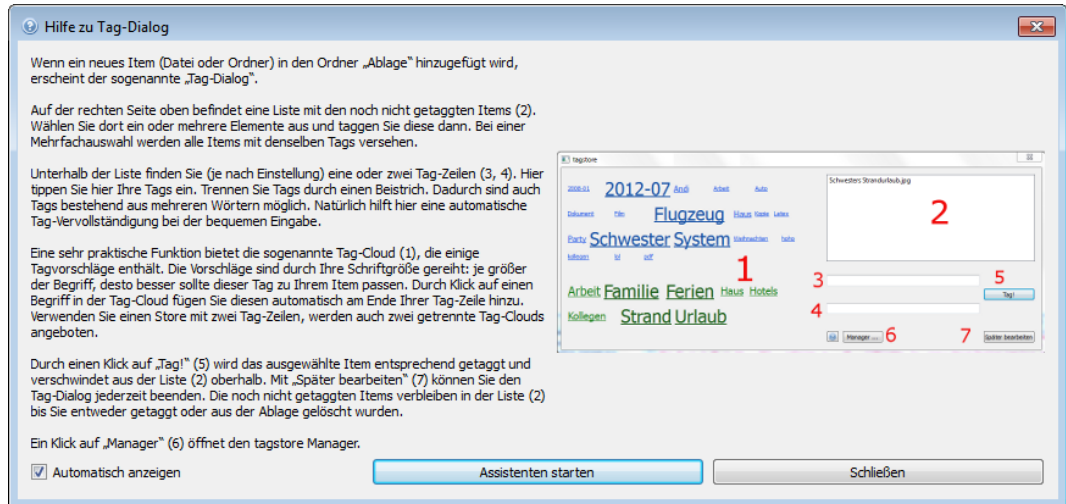


Figure 2.12.: The tagstore Dialog help.



Figure 2.13.: The two line Tag Cloud.

2.2. tagstore

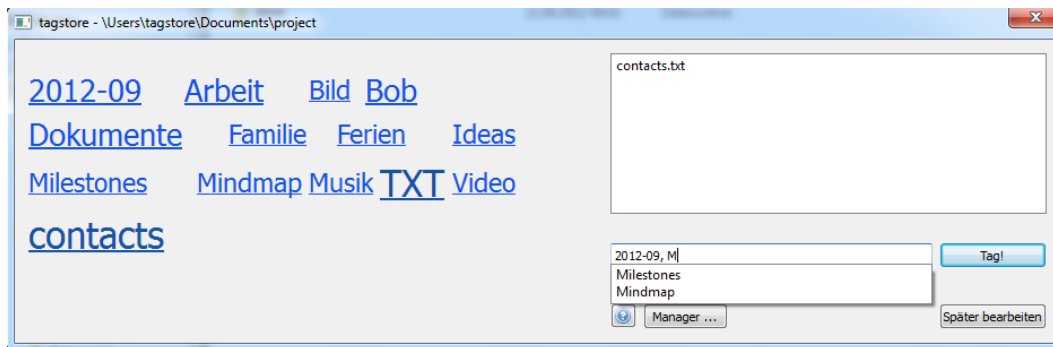


Figure 2.14.: The tag completion feature.

Tag Cloud

The tag cloud suggests not only recently used tags, but also most used tags and tag recommendations derived from the item name. The relevance of a tag is connected to its size. With a click, tags from the cloud can be appended to the active tag line. If a store is configured to show two tag lines, there will be two tag clouds, as can be seen in Figure 2.13. For more details on the configurations of tagstore see Section 2.2.6.

Tag Completion

When entering a previously used tag into the tag line, tag completion (Figure 2.14) suggests all previously used tags beginning with the entered letter(s). A drop-down overlay displays all matching tags. The more letters are entered, the less tags will remain in the list. Users can then select the specific tag from the list and do not have to type the rest of the word.

2.2.5. Limitations

The maximum amount of items in tagstore had to be limited because of the discrepancy between the requirements of tagstore and the resources of

2. TagTrees and tagstore

current file systems (Voit, Andrews, and Slany, 2011). The creation of folders and links for each permutation of tags leads to an exponential growth of folders and links. Current file systems have only a fixed number of possible file and folder entries. Due to this fact one tagstore can only hold a few thousand items. This is sufficient for testing purposes but not for vast item libraries.

The maximum number of tags had to be limited too, because of the exponential relation between the number of tags and the number of folders and links (Voit, Andrews, and Slany, 2011). Too many tags would lead to performance problems (tagstore Dialog seems to freeze), and were therefore not allowed. The *Tag!* button will be disabled if more than the allowed number of tags is entered. For previous versions of tagstore six tags was a reasonable upper limit. The tagging window did not freeze and previous studies showed that the average number of tags users assign to an item is below six (Hsieh et al., 2008; Pak, Pautz, and Iden, 2007).

For the field test in this thesis the maximum number of tags was restricted to five tags because in the current version of tagstore more than one file can be tagged at once, which strains the operating system more.

2.2.6. tagstore Configurations

There are four main tagstore configurations (Figure 2.15) available, regarding the number of tag-lines and usage of controlled vocabulary. There are many more configurations, if the minor options described under Section 2.2.4 are taken into account as well. The controlled vocabulary equivalent of tagstore is called *Meine Tags* (English: *My Tags*). If a controlled vocabulary is used, users have to add tags to *Meine Tags* before they can use them to tag items.

The four main configurations are:

1. one tag-line - free vocabulary
2. one tag-line - controlled vocabulary
3. two tag-lines - both lines free vocabulary
4. two tag-lines - one line free vocabulary, one line controlled vocabulary

2.2. tagstore

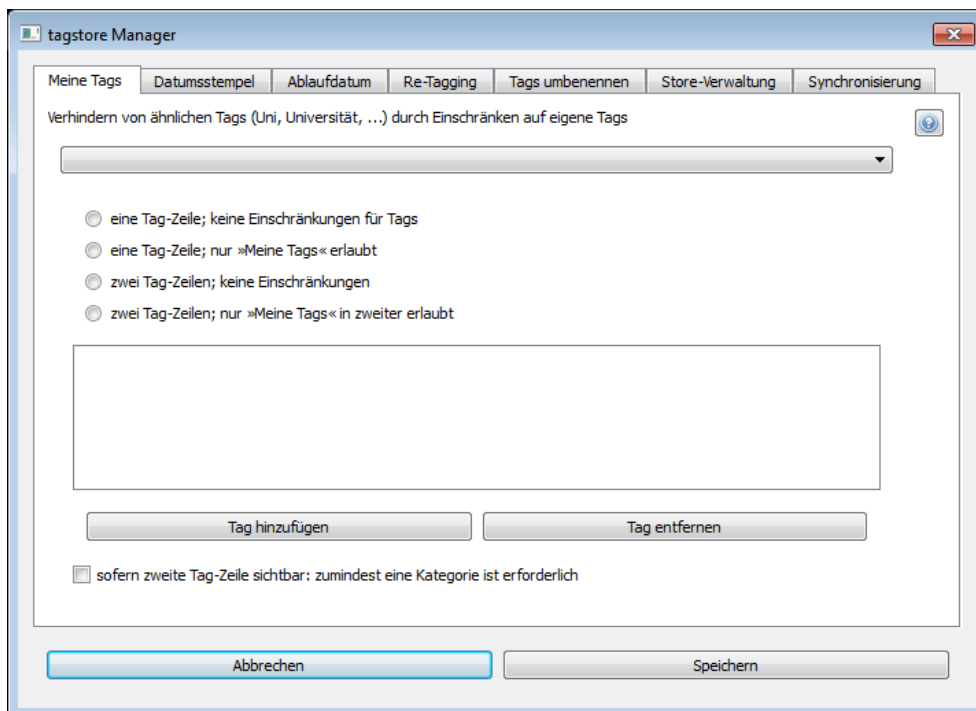


Figure 2.15.: The four tagstore configurations.

2. TagTrees and tagstore

Free vocabulary means there are no restrictions to what users can enter into the tag-line. *Meine Tags* are not used.

One Tag-Line - Free Vocabulary Configuration

The tagstore Dialog window shows one tag line (see Figure 2.5). All kinds of strings can be entered here. There are no restrictions. It is the configuration with most freedom of tagging. Spelling does not matter and users can freely associate tags with the items. Items can be re-found in the folder *Navigation*.

Challenges with this configuration can be caused by homonyms, synonyms, inconsistencies regarding singular and plural, case, spelling and so on (Ma and Wiedenbeck, 2009). Users can easily create several tags with the same meaning or file an item under a misspelled tag and look for that item under the correctly spelled tag.

One Tag-Line - Controlled Vocabulary Configuration

The tagstore Dialog window shows one tag line (see Figure 2.5) and only tags, which were previously defined in the tagstore Manager can be used. This should help solve some problems, which can occur with the first configuration. Users have to think about their tags before they can assign them to items. The time and effort invested in this phase should later be rewarded with non-ambiguous tags and lesser need of editing tags or re-tagging items. Items can be re-found in the folder *Kategorien*.

The challenges that might occur with this version could be lower user acceptance due to the increase in tagging effort and slower performance, when users want to add a new tag, because they have to take the detour via the tagstore Manager. Re-finding items in this kind of TagTrees structure could also be more difficult, when users decide to add fewer tags to their items, because they want to avoid adding new tags to the controlled vocabulary. The structure would then be less precise than a structure created with one of the other configurations.

Two Tag-Lines - Both Lines Free Vocabulary Configuration

This configuration shows two tag lines and two tag clouds (see Figure 2.13), both tag lines allow free tagging. It enables users to maintain two different structures for the same items, for example one describing the content and the other one categorizing the items. Other pairs could be different languages, provenance of files – content/topic of files, owner of files – projects and so on. Items can be re-found in the folders *Beschreibungen* and *Kategorien*.

All possible challenges for the first configuration are also possible with this version, with even higher probability because there are now two structures, where these challenges can occur. One additional challenge could be distinguishing the two structures, tags could easily be mixed up between them or used in both of them. The advantage of having two different structures could easily be lost and become a disadvantage. Users who are not good at keeping different structures separated, should stick to the first configuration.

Two Tag-Lines - One Line Free Vocabulary, One Line Controlled Vocabulary Configuration

This configuration shows two tag lines and two tag clouds (see Figure 2.13), one tag line allows all kinds of strings, the other allows only previously defined tags. It is the most sophisticated configuration of tagstore. It allows users to combine the advantages of both kinds of vocabulary whilst diminishing the possible challenges at the same time. The controlled vocabulary tag line provides non-ambiguous consistent tags whereas the free vocabulary tag line offers the flexibility of item specific tags. Items can be re-found in the folders *Beschreibungen* and *Kategorien*.

The shortcomings of this option could also be lower user acceptance due to the increase in tagging effort and slower performance. An additional negative effect could be the consumption of disk space, if only one structure is used for re-finding items and the other is only overhead. That is also true for option number three.

3. Field tests

Laboratory tests of PIM (Personal Information Management, see Section 1.3) software are difficult, because these systems are designed for the personal needs, memory and knowledge of users (Cutrell et al., 2006). It is impossible to match tasks and test items to users individually. One can only decide on a selection of tasks and test items, based on assumptions, what the average user might need. These constraints of laboratory tests lead to a need for long-term tests, where PIM software or other systems are used in daily life. Such gathered data allows a glimpse of how users really interact with software. However, even long-term field tests cannot always give a complete image of the real world. Test periods are restricted to a certain time and privacy issues have to be considered. Not everything that can be logged, should be logged and users may censor themselves, knowing their behavior is being monitored. Some challenges of field testing and some different approaches to field testing are described in the following sections.

3.1. Field Tests in Literature

3.1.1. Analysis of Workload Behavior in Scientific and Historical Long-Term Data Repositories

Over a period of one to three years Adams, Storer, and Miller (2012) did a study of “long-term data repository characteristics and workload behavior”. Therefore three long term archives were chosen for closer investigation. Access logs, file metadata crawl summaries, and record metadata have been analyzed.

3. Field tests

3.1.2. A Cross-Tool Study of PIM

Boardman and Sasse (2004) did a cross-tool study of Personal Information Management. The study collected cross-tool data for all participants and longitudinal data for a subset of participants. The cross-tool data contains data about file, email and web bookmark usage. Based on the findings of the research, new strategy classifications for user behavior were presented.

Phase one of the study included 31 participants, whose usage behavior across files, email and web bookmarks were profiled. This was conducted by guided tours of the users file, email and bookmark collections and semi-structured interviews. Those interviews should cover Barrau's (D. K. Barrau, 1995) four sub-activities in each tool. Boardman and Sasse (2004) summarizes them as follows:

1. "acquisition of items to form a collection"
2. "organization of items"
3. "maintenance of the collection"
4. "retrieval of items for reuse"

Additionally, a content analysis of the interviews, screen shots of the desktop and the folders in each collection were made. The folder structures were analyzed to investigate the concepts used to name the folders and the level of folder overlap (Boardman and Sasse, 2004).

Phase two included 8 of the 31 participants from phase one. For those users, longitudinal data of the three collections (files, email, web bookmarks) was collected for approximately nine and a half months (participation time varied between the users). For this purpose a tool was developed, which captured snapshots of the folder structures and the amount of items within the folders. Other data was not collected. Additionally, a software prototype to mirror structural changes was used. Test users also wrote a diary of important events and did an interview at the end of the test (Boardman and Sasse, 2004).

3.1.3. Analysis of Long-Term File System Activities on Cluster Systems

In Cho, Kim, and Lee (2009) the file system activities on two large-scale cluster systems were measured and analyzed. The following measurements were taken:

- Monitoring and analysis of “two running distributed and parallel file systems at [sic] 2006 and 2009”
- “long-term file systems activities on running two large-scale cluster systems for more than 6 months”
- “the change of file system activities through improving system performance and high-speed network technology” (Cho, Kim, and Lee, 2009). For this purpose file system activities were monitored and analyzed in the years 2006 and 2009.

3.1.4. Fast, Flexible Filtering with Phlat - Personal Search and Organization Made Easy

Cutrell et al. (2006) did a 8 month long-term evaluation of the software Phlat with 225 participants. Quantitative data from usage logs and qualitative data from user feedback were measured and analyzed.

3.1.5. Stuff I've Seen: A System for Personal Information Retrieval and Re-Use

SIS (Stuff I've Seen) facilitates re-finding of previously seen information and was inspected by Dumais et al. (2003) for qualitative and quantitative data. More than 230 test persons used the system for a six week period of time. Questionnaires and log files were analyzed to obtain usage data. Different versions of SIS were distributed to different user groups to evaluate the differences between those versions.

3. Field tests

3.1.6. Long-term File Activity and Inter-Reference Patterns

Gibson, Miller, and Long (1998) conducted a study about long-term file system activity for 120 to 280 days on Unix systems. Its purpose was to find “common long-term activity trends and reference patterns”. Both ways of referencing files, through the folder hierarchy and the unique file number, in Unix were monitored. Four to six different computing systems were included in this study.

3.1.7. Of Categorizers and Describers: An Evaluation of Quantitative Measures for Tagging Motivation

Körner et al. (2010) “evaluated the usefulness of different measures to discriminate between categorizers and describers in social tagging systems”. For measuring the two types of tagging motivation the following properties were analyzed: tag/resource ratio, orphaned tag ratio (orphaned tags are infrequently used tags), conditional tag entropy, overlap factor (given tags intersect) and tag/title intersection ratio (words from resource title used as tag). For this test, data sets from 896 users from Del.icio.us were crawled for three months. Those datasets were analyzed with different algorithms and a subset was analyzed by humans. Six participants had to categorize 25 user pair data sets into describers or categorizers. The findings of the different methods were compared afterwards.

3.1.8. Measurement and Analysis of Large-Scale Network File System Workloads

Leung et al. (2008) did an “analysis of two large-scale network file system workloads”. CIFS (Common Internet File System) traffic was measured for two file servers. Both servers were enterprise-class file servers, one was used by the departments finance, marketing and sales, the other one was used by the engineering department. Over a period of three months 1500 employees participated in this measurement. The study states that it is the

first published study to analyze large-scale enterprise file system workloads.

3.1.9. Planz to Put Our Digital Information in Its Place

Jones et al. (2010) compared current methods of project management and Planz, the Personal Project Planner, which provides an overlay to a personal file system. The evaluation was done during a period of five to twelve days and with eight test users. Test users had to work on two comparable projects, on one with Planz and on the other one with their usual tools. Test users had to answer interim questions and a final questionnaire.

3.1.10. Evaluating Long-Term Use of the Gnowsis Semantic Desktop for PIM

Sauermann and Heim (2008) did two long-term evaluations of gnowsis, a software prototype implementing a semantic desktop. One study lasted two months and involved eight participants. This part included a user training, a usability test, the test period and a final contextual inquiry. The second evaluation, two years later, was a contextual inquiry of two out of the original eight participants, who used gnowsis for 24 months. During both parts of the evaluation an activity logger collected objective usage data.

3.1.11. Am I Wasting My Time Organizing Email? A Study of Email Refinding

Whittaker et al. (2011) did a long-term field study with 345 participants to find out how people re-find messages in email. An email client was developed, which logged “actual daily access behaviors”. This email prototype, called Bluemail, was released in the organization of the authors. Only test

3. Field tests

users, who used the software for at least a month and who used each possible retrieval method at least once, were included into the analysis. This criteria left 345 sets of data.

3.2. Challenges with Field Testing

Tohidi et al. (2006) observed that “when presented with a single design, users give significantly higher ratings and were more reluctant to criticize”. The use of different prototypes of versions of a software could minimize that effect, but it is hardly ever possible to develop many different working prototypes and finding enough test persons for every version. Nevertheless, the comparison between a new tool or software and the status quo is always possible. Another challenge with longer testing periods is to keep people working with the test object. Test users for this test received weekly emails. Those emails served as a reminder and provided the test users with links to the weekly questionnaires (for more information see Chapter 4). Still some users quit or aborted the test (see Chapter 6).

3.2.1. Finding Suitable Test Persons

When doing a long-term evaluation of a software in an academic surrounding and with low to no budget for test persons it is always difficult to find enough participants. People have to spend some time and resources on testing. Moreover participants have to trust the researchers with their private data as log files are a crucial part of field testing (see Section 3.2.2). Therefore most non commercial field tests are done with only a few test persons whereas commercial field tests can have hundreds of participants (see Section 3.4).

3.2.2. Obtaining Objective Data

The only possible way of obtaining objective data seems to be using log data of any kind. Most studies, described in the previous section, used log

3.2. Challenges with Field Testing

data for objective measurements. What has to be considered, when using log data, is, that log files can sometimes be misleading. A lot of file actions are not driven by users, instead they are driven by the operating system, indexing services and so on. Apart from that, log files are, for now, the best method for obtaining objective data.

Objective data collected by the above described studies

- Adams, Storer, and Miller (2012) analyzed file metadata crawl summaries, access logs and record metadata.
- Boardman and Sasse (2004) took snapshots of folder structures and determined the number of files in the folders.
- Cho, Kim, and Lee (2009) implemented a “parallel file system logging method for high performance computing”. This was not trivial because the logging mechanism should not affect the systems it measured.
- Cutrell et al. (2006) and Dumais et al. (2003) modified the surveyed software to obtain detailed usage logs.
- Gibson, Miller, and Long (1998) developed a tracing system, which collected information about files index node numbers (i-node), i-node creation time, name, size and other file properties.
- Jones et al. (2010) did not collect any objective data, only subjective data was collected.
- Körner et al. (2010) automatically collected datasets from 896 users from Del.icio.us.
- Leung et al. (2008) recorded and analyzed all file server traffic.
- Sauermann and Heim (2008) used an activity logger to cross-validate the answers given by the users.
- Whittaker et al. (2011) developed a prototype email client, which logged actual user behavior.

3.2.3. Obtaining Subjective Data

The most common way of obtaining subjective data is to do a user interview or have test users fill in questionnaires like in Boardman and Sasse

3. Field tests

(2004); Cutrell et al. (2006); Dumais et al. (2003); Jones et al. (2010); Sauer-
mann and Heim (2008). The challenges are posing the right questions and
keeping the amount of questions at a minimum, because most users do
not like filling in questionnaires very much. User feedback is a crucial part
of any test, because it can provide researchers with a lot of additional in-
formation and can unveil unexpected results. Boardman and Sasse (2004)
asked users to keep a diary as well to get more subjective information.

3.3. Analysis Criteria

Adams, Storer, and Miller (2012) investigated compound annual growth
rates, file sizes, tertiary storage updates, content storage mutability, content
storage activity, large-scale retrievals, LRU caching, per-session behavior
and intra-session access locality.

Boardman and Sasse (2004) analyzed files, emails and bookmarks. The fol-
lowing criteria were analyzed: time of filing/deleting, number of folders,
number of unfiled files and bookmarks, and inbox size.

Cho, Kim, and Lee (2009) analyzed file types, file size, file age, directory
proportion, contained files per directory, directory depth and used space.

Cutrell et al. (2006) analyzed query characteristics, search results, filter us-
age, tagging activity, user feedback and usage observation.

Dumais et al. (2003) investigated query characteristics, item openings from
the search results and interface experiments.

Gibson, Miller, and Long (1998) analyzed basic file system activity, dis-
tribution of file sizes, usage by transaction type, growth of individual files
from modifications, file system growth, percentage of files used daily, long-
term file system activity, long-term repeated usage, reference locality, file
lifetimes and hierarchical name space activity.

Körner et al. (2010) analyzed data-sets from 896 users from Del.icio.us for
possible criteria, which should help identify the users as describers or cate-
gorizers. The data-sets were analyzed with different algorithms and a sub-

3.4. Classification Schemes

set was analyzed by humans. The findings of the different methods were compared afterwards.

Jones et al. (2010) evaluated user feedback on Planz compared to current methods.

Leung et al. (2008) logged and analyzed network file system workloads. Access, usage and sharing patterns were analyzed to detect “ (1) changes in file access patterns and lifetimes since previous studies (2) properties of file I/O and file sharing (3) the relationship between file type and client access patterns”.

Sauermann and Heim (2008) analyzed questionnaires, interviews, videos and activity-logs. The evaluation consisted of the three main parts: “Expectation Questionnaire, Usability and GUI, and PIM use cases”.

Whittaker et al. (2011) analyzed the logging data provided by the logging mechanism included in the email prototype. General usage statistics and access behaviors were monitored and evaluated.

3.4. Classification Schemes

Table 3.1 shows the basic data of all investigated long-term evaluations. Each study was analyzed regarding the test time and the size of the study. This table shows a rich variety regarding time and size of field tests. A guideline, how many participants a field test should have and how long it should take, could not be found. It seems, that size and duration of a field test depend mainly on the time restrictions of researchers and test participants and the number of volunteers researchers can find.

Although the basic data are very different from each other, an approach was made to classify the investigated field tests. On the basis of the basic data shown in Table 3.1 the following classification schemes (see Table 3.2 and 3.3) were developed. The time duration was divided into four groups and the size was divided into three groups. The above described studies were then categorized based on these classifications (see Section 3.5).

3. Field tests

Study	Time	Volume/Participants
Adams, Storer, and Miller (2012)	1–3 years	3 (long-term storages)
Boardman and Sasse (2004) I	once	31 participants
Boardman and Sasse (2004) II	9.5 months	8 participants
Cho, Kim, and Lee (2009)	6 months	av. num. of logins/month 8500
Cutrell et al. (2006)	8 months	225 participants
Dumais et al. (2003)	6 weeks	234 participants
Gibson, Miller, and Long (1998)	120–280 days	4–6 diff. computing systems
Leung et al. (2008)	3 months	1500 participants
Jones et al. (2010)	5–12 days	8 participants
Sauermann and Heim (2008) I	2 months	8 participants
Sauermann and Heim (2008) II	2 years	2 participants
Whittaker et al. (2011)	>1 month	345 participants

Table 3.1.: Basic data of tests

Class	Time
Ultra Short	a few days
Short	2 to 8 weeks
Medium	2 to 12 months
Long	1 year and above

Table 3.2.: Time Scheme

Class	Size (participants)
Small	below 100
Medium	101 to 500
Large	501 and more

Table 3.3.: Size Scheme

3.5. Comparison of Field Tests on the Basis of Classification Scheme

Based on the classification scheme developed in Section 3.4, the studies from Section 3.1 were classified as follows, see Table 3.4.

Study	Time	Size (participants)
Adams, Storer, and Miller (2012)	Long	Small
Boardman and Sasse (2004) I	Ultra short	Small
Boardman and Sasse (2004) II	Medium	Small
Cho, Kim, and Lee (2009)	Medium	Large
Cutrell et al. (2006)	Medium	Medium
Dumais et al. (2003)	Short	Medium
Gibson, Miller, and Long (1998)	Medium	Small
Leung et al. (2008)	Medium	Large
Jones et al. (2010)	Ultra short	Small
Sauermann and Heim (2008) I	Medium	Small
Sauermann and Heim (2008) II	Long	Small
Whittaker et al. (2011)	Short	Medium

Table 3.4.: Classification Scheme

Regarding the time span of studies, the comparison of the investigated field tests shows that usually the more additional user work is required, the shorter the time span of testing is. The long or medium time studies, like (Adams, Storer, and Miller, 2012; Gibson, Miller, and Long, 1998; Leung et al., 2008), often did not require any additional work of participants. They monitored current user behavior or system usage with loggers without any additional effort of users.

Regarding the size of studies it seems that studies, which last for a long time usually have a small or medium number of participants or monitored systems. The reason might be, that it is a challenge to find many volunteers for a long testing time. Studies, which require additional user work (Boardman and Sasse, 2004; Cutrell et al., 2006; Dumais et al., 2003; Jones et al., 2010) are often of short to medium time and small to medium size.

3. Field tests

As already mentioned it is difficult to find many volunteers for a long testing period, especially when a lot of additional work is required from users. Therefore, the size (small, 18 test users) and time span (short, three weeks) seem to be a reasonable size and time for the long-term evaluation of tagstore, as it requires a lot of user work.

3.6. Summary

The analysis of previously conducted long-term field tests should deliver some ideas for this thesis. Different means of data acquisition were inspected and analyzed regarding their suitability for this test. The results of this analysis had some impact on the methodology of this field test. Logging mechanisms, user questionnaires and test diaries were chosen to gather data from participants. For more details on the test methodology see Chapter 4. An attempt to classify long-term evaluations was made as well, based on the research about previous work.

4. Methodology

The test was conducted in German, because all users were German native speakers. The interface of tagstore was configured to show a German interface. All material and results in this thesis have been translated by the author of this thesis. No test user received any payment or any other return service.

The methodology of the test was influenced by the findings in Chapter 3. Logging mechanisms proved to be a good method for obtaining objective data and user questionnaires are a common method to gather subjective data from participants. Boardman and Sasse (2004) inspired the use of a test diary.

4.1. Preliminary Work

Before the field test could be started, some preliminary work had to be done. The following sections are going to describe this work before a detailed description of the actual field test is given.

4.1.1. Modifications to tagstore

De Vocht et al. (2012) and Harzl et al. (2012) brought up some usability issues and bugs. Therefore some modifications had to be done before the field test could start. A recommendation system and an assistant were added to tagstore. The tag cloud, Figure 2.5, offers more possible tags and the assistant, Figure 2.10, helps users to create their first store. For

4. Methodology

detailed description of the recommendation system and the assistant see Pirrer (2012) and Schober (2012).

4.1.2. Videos

Two videos have been captured for tagstore. One in the scope of Harzl et al. (2012) and the other for this thesis. The first video ¹ gives a basic introduction to tagstore and the second one shows the installation of tagstore ². Both videos are available in German and English.

4.1.3. Logger

To obtain some objective data, logging mechanisms are the most promising tool (see Section 3.2.2). For filing items, the logging mechanisms is integrated in tagstore itself because the software uses this data to create and maintain the folder structures. The following logging data are available:

- Time and date of the filing process,
- the file name and
- the tags assigned to it

Logging the re-finding user actions proved to be more difficult. As tagstore does not have a re-finding interface and users can use whichever method they prefer for re-finding, the logging mechanism could not be integrated in the program like in Cutrell et al. (2006) and Dumais et al. (2003). Hence a stand alone logging mechanism had to be developed, which should always be running in the background. It should gather objective data of user behavior and usage of TagTrees for re-finding items. The logging mechanism was supposed to write the following events into a logging file:

- open a directory in the TagTrees structure
- open a file in the TagTrees structure
- error (some error occurred)

¹<http://youtu.be/jxNYwmC3PSs> – retrieved on 2012-09-11

²<http://youtu.be/MEnOMyRUX8Y> – retrieved on 2012-09-29

4.1. Preliminary Work

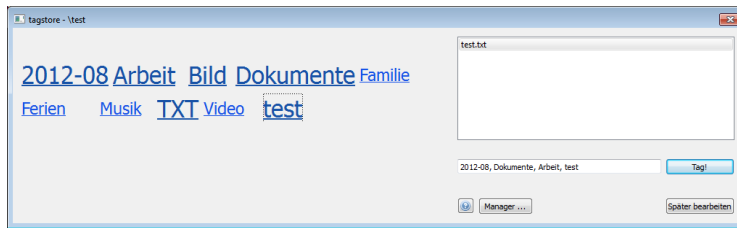


Figure 4.1.: The test configuration.

These data would have improved the findings of this thesis a lot, but the usage of the logger was abandoned for some serious reasons, described under Section 4.1.3. The remaining objective data are the names of files and folders stored with tagstore and all data entered in tagstore, which means tags and time stamps. What has not and would not have been logged, are content of the files in the TagTrees structure and anything outside the TagTrees structure. To compensate the loss of the logging mechanism some questions were added to the user questionnaires (see Appendix A).

Logger Issues

The logging mechanism was developed for Microsoft Windows because the study was run on Windows machines only. This test focused on only one operating system to get comparable and consistent results.

On Windows 64bit systems the logger would not have worked, because the driver necessary for the logging mechanism needed to be signed digitally with a Software Publisher Certificate, which could not be obtained. The reason, that finally led to the decision not to use the logger was, that the logger caused a blue screen, when more than one file was tagged at the same time or too many tags were used. The tagging of multiple files with more than one or two tags caused more system operations (creating folders and links) than the logging mechanism could handle.

4. Methodology

4.1.4. Deciding on One Configuration

As described in Chapter 2.2 tagstore offers four different configurations for a store, regarding the number of tag-lines and usage of controlled vocabulary. It was decided to choose the basic one tag-line - free vocabulary configuration, see Figure 4.1, as both preceding laboratory tests (De Vocht et al., 2012; Harzl et al., 2012) used the same configuration and results would therefore be comparable.

4.1.5. Installer

After all preliminary work was completed, an Installer for windows was created using the BitRock InstallBuilder ³. The Installer works for the following Windows distributions: Windows XP, Windows Vista (32bit and 64bit) and Windows 7 (32bit and 64bit). For more details about the installer see Section 2.2.1.

4.1.6. Pre-test

Before starting the actual field test, a pre-test was done with five test users. These users completed the whole process including

- background questionnaire
- consent form
- download and installation of tagstore
- creation of exactly one store with a default configuration
- weekly feedback questionnaire
- final feedback questionnaire
- test diary
- sending the store log file

in a shorter period of time. Pre-test users had roughly one week to do the whole process, whereas test users had three weeks time. The filling in of the background questionnaire was done before the testing period

³<http://installbuilder.bitrock.com/> – retrieved on 2012-09-06

started. It took some time until all users had filled in the questionnaire. The actual pre-test started with sending the download URL for tagstore. Users sent feedback concerning all parts of the test, not only tagstore but also concerning the questionnaires and the whole process of testing. Some minor changes to email templates and questionnaires were made but the overall testing process seemed quite suitable to the pre-test users.

4.2. Field Test

The actual field test took place in September and October 2012 and consisted of the following parts.

4.2.1. Background Questionnaire and Consent Form

The background questionnaire contained 47 questions users had to answer before they could participate in the test. The questionnaire contained questions about the following topics:

- Willingness to participate in a field test
- Personal data like age, gender etc.
- Computer usage
- Previous experience with usability tests
- Previous knowledge and usage of tagging
- Current usage of folders
- Previous experience with tagstore
- Usage of social networks
- Status quo of the folder structure
- Expectations towards tagstore

See Appendix A for the whole background questionnaire. Additionally a consent form (see Appendix A) had to be signed and sent back via mail, email or fax.

This initial phase of the test took roughly three weeks until 18 test users were found.

4. Methodology

4.2.2. Download, Installation and Configuration of tagstore

After 18 test persons were found the test users were sent an URL ⁴, where they had to confirm the terms of the test before they could download the install file (see Appendix A). Test users were provided with an email contact and a Skype contact, if they should experience any problems during the installation of tagstore. This phase started the three week period, during which users could test tagstore at home. For testing purposes users were told to create only one store with a standardized configuration. Installation and other software problems will be discussed in Section 6.5.

4.2.3. Three Week Test Phase

Users had three weeks to use tagstore on their own computers with their own files. During this phase the following tasks had to be completed.

Keep a Test Diary

This diary should include special events, like tagstore bugs, error messages, not found files, opinions about tagstore, ideas for improvement etc.

Fill in Weekly Questionnaires

After the first and the second week test users were sent a link to an intermediate questionnaire which should gather data about the usage of tagstore and work as a reminder to use tagstore and keep the test diary.

The first weekly questionnaire contained 26 questions about the following topics:

- Frequency of tagstore use
- Usefulness of tagstore
- Special events

⁴<http://tagstore.ist.tugraz.at/de/fieldtest.shtml> – retrieved on 2012-09-07

- Usefulness of the tag cloud

See Appendix A for the whole weekly questionnaire. The second weekly questionnaire contained four questions less than the first, because they proved to be redundant. The deleted questions were those about special events and remarks regarding tagstore. The answers to these questions were contained in the test diary as well, therefore they have been deleted from the second weekly questionnaire.

Fill in a Final Questionnaire

At the end of the test, users had to fill in one final questionnaire (see Appendix A). The final questionnaire contained 48 questions about the following topics:

- Frequency of tagstore use
- Usefulness of tagstore
- Special features of tagstore
- Special events
- Usefulness of the tag cloud

Send the Store Log File

By sending the store log file users ended the three week test phase.

4.2.4. Examination of the Results

All gathered data were made anonymous, analyzed and compared to previous tagstore tests. The findings are explained in detail in Chapter 5 and Chapter 6. Questionnaires were analyzed manually. Log files were analyzed by an automated script, which gathered all data described in Section 6.6.

5. Test Users

The long-term evaluation of tagstore was executed by 18 test users. Eight participated in three weeks and ten participated in one or two weeks. Four test users (TP₀₈, TP₁₁, TP₁₂, TP₂₁) filled in the background questionnaire, but quit the test afterwards. Therefore, 18 test users remained. The four users, who quit, were excluded from every analysis, only their test person (TP) numbers remained.

Eight test users participated in all three weeks of the field test and returned their log files as well. For this group of users, called **main group** (MG), all parts of the test were evaluated and different parts of the test were compared with each other.

The **group containing all test users** (GA), including MG, was evaluated separately for some parts of the test and no comparison between different parts of the test was done. Members of GA changed throughout the test.

Table 5.1 shows, which users did perform which parts of the test and into which group they were categorized. According to their participation, test users were categorized into the main group (MG) and a group containing all test users (GA). Users, who did not participate in any other part of the test apart from the background questionnaire were excluded from all evaluations.

Before the test started, test users filled in an online questionnaire about themselves and their computer usage (for details on the questionnaire see Section 4.2.1). The following sections present the results of these questionnaire. Every analysis was done for both groups, MG and GA.

5. Test Users

TP	BG-Q	1. Week-Q	2. Week-Q	Final-Q	Diary	Log Files	Group
TP01	×	×	×	×	×	×	MG
TP02	×	×		×	×	×	GA
TP03	×	×	×	×	×	×	MG
TP04	×	×	×	×	×	×	MG
TP05	×			×	×		GA
TP06	×		×	×	×	×	GA
TP07	×	×	×	×	×	×	MG
TP08	×						excluded
TP09	×	×	×	×	×		GA
TP10	×	×		×	×	×	GA
TP11	×						excluded
TP12	×						excluded
TP13	×	×		×	×	×	GA
TP14	×	×	×	×	×	×	MG
TP15	×	×	×	×	×	×	MG
TP16	×	×	×	×	×	×	MG
TP17	×	×		×	×	×	GA
TP18	×		×	×	×	×	GA
TP19	×				×		GA
TP20	×	×	×	×	×	×	MG
TP21	×						excluded
TP22	×		×		×		GA

Table 5.1.: Test users, their participation during the test and categorization into main group (MG) or group of all test users (GA). GA always includes MG. BG = Background, Q = Questionnaire

5.1. GA: Personal Background

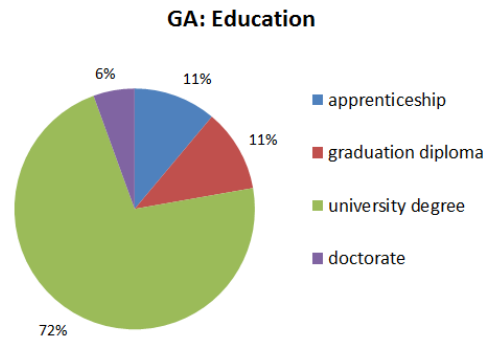


Figure 5.1.: GA: Education of test users

5.1. GA: Personal Background

83 % of the test users were male and 17 % were female. The age of the test users varied between 21 and 51 years, with an average age of 38 years. Most of the test users had a high education level (see Figure 5.1). 6 % finished a doctorate, 72 % possessed a university degree, 11 % had a graduation diploma and were university students. That means that 78 % of all test users had a university degree and an additional 11 % were working on a university degree. 11 % of all test users completed an apprenticeship.

The completed degrees and ongoing studies included various study programs. They were summarized in two groups, one named IT studies, and the other named other studies. IT studies included telematics, information management, electrical engineering, technical physics and software engineering. Other studies included architecture, mechanical engineering, German language and literature studies, civil engineering and geological information technology. 61 % had completed or were currently studying IT studies, 28 % had completed or were currently studying other studies and 11 % did not study (see Figure 5.2).

5. Test Users

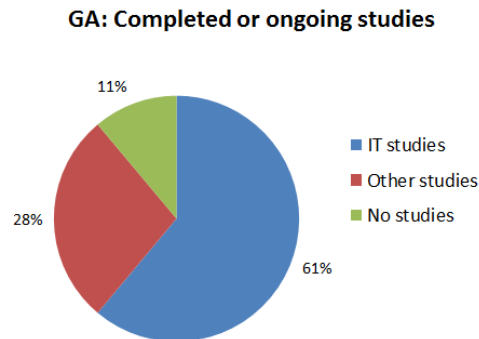


Figure 5.2.: GA: Completed or ongoing studies of test users

5.2. MG: Personal Background

87% of the MG test users were male and 13% were female. The age of the test users varied between 28 and 51 years, with an average age of 38 years. Most of the MG users had a high education level (see Figure 5.3). 13% finished a doctorate and 75% possessed a university degree. 12% of MG test users completed an apprenticeship.

50% had a university degree in IT studies, 37% had completed other studies and 13% did not study (see Figure 5.4). IT studies included telematics, electrical engineering and software engineering. Other studies included mechanical engineering, German language and literature studies and geological information technology.

5.3. GA: Computer Usage

The average time span users have been working with computers until the test was 22 years, with 10 years being the minimum and 34 years being the maximum. The detailed computer usage is shown in Figure 5.5. The average computer usage per day varied between three and 14 hours per

5.3. GA: Computer Usage

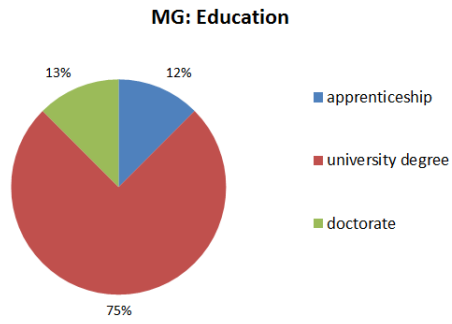


Figure 5.3.: MG: Education of test users

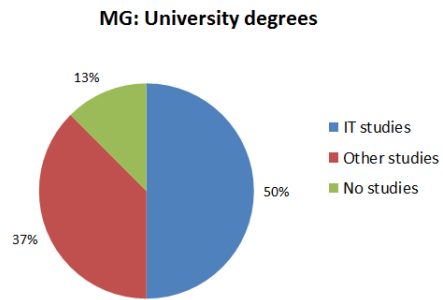


Figure 5.4.: MG: University degrees of test users

5. Test Users

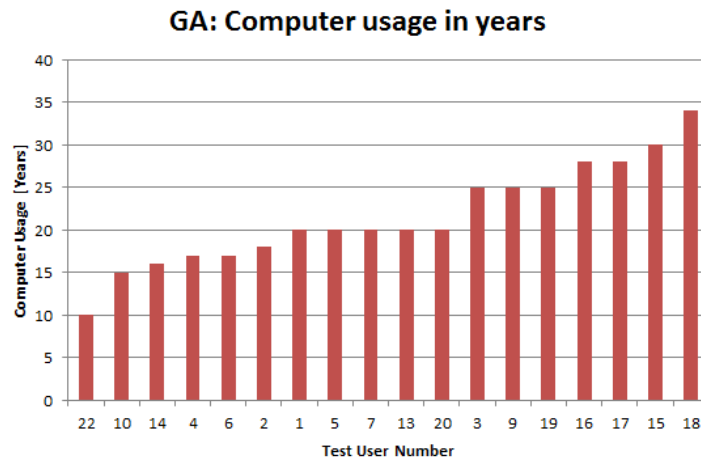


Figure 5.5.: GA: Computer usage in years per test user

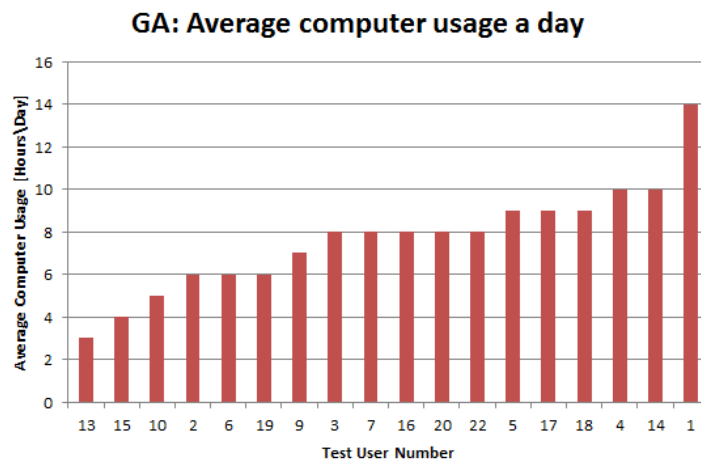


Figure 5.6.: GA: Daily computer usage per test user

5.3. GA: Computer Usage

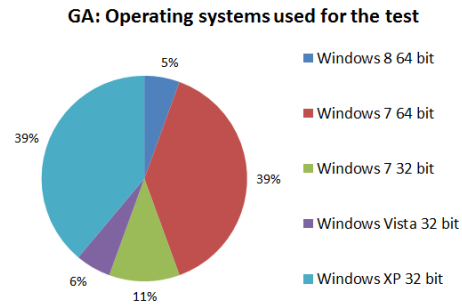


Figure 5.7.: GA: Operating systems used for the test

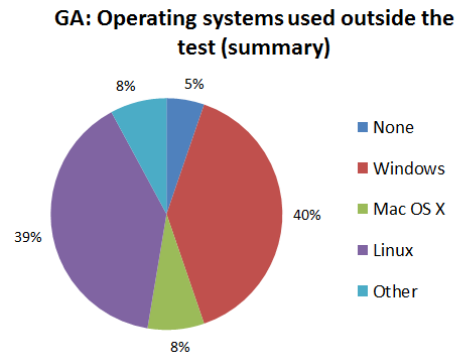


Figure 5.8.: GA: Operating systems used by test users outside the test

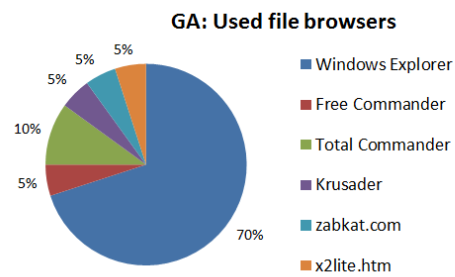


Figure 5.9.: GA: File browsers used by test users

5. Test Users

day, resulting in an average of eight hours per day. For detailed daily usage see Figure 5.6.

The most used operating systems for the field tests were Windows 7 64 bit, which 39 % of the test persons used and Windows XP 32 bit, which 39 % used. All the operating systems used for the field test, and their percentage of usage are shown in Figure 5.7. Test users were asked which operating systems they use as well apart from the test. This operating system distribution is shown in Figure 5.8. 5 % of the participants used no other operating systems, 95 % used two or more operating systems. The following GNU/Linux distributions were summarized into one single Linux category: Debian/GNU Linux, openSUSE, Slackware Linux, and Ubuntu. Other operating systems included iOS and Android. The Windows versions included Windows 7 64 and 32 bit, Windows Vista 32 bit, Windows XP 32 bit and Windows Server 2008 R2.

The main file browser, used by test persons, was Windows Explorer. 70 % of all participants used Windows Explorer, 10 % used Total Commander and all other file browsers were used by 5 % of all test users. For detailed information see Figure ??.

5.4. MG: Computer Usage

The average time span MG users have been working with computers until the test was 22 years, with 16 years being the minimum and 30 years being the maximum. The detailed computer usage is shown in Figure 5.10. The average computer usage per day varied between four and 14 hours per day, resulting in an average of nine hours per day. For detailed daily usage see Figure 5.11.

The two operating systems used for the test by MG users were Windows 7 64 bit (62 %) and Windows XP 32 bit (38 %). 60 % of the MG users worked on Linux operating systems (Ubuntu, Debian/GNU Linux, Slackware Linux, openSUSE) as well. 33 % used other Windows versions (Windows 7 32 bit, Windows Vista 32 bit, Windows XP 32 bit) apart from the test and 7 % used Android as well.

5.4. MG: Computer Usage

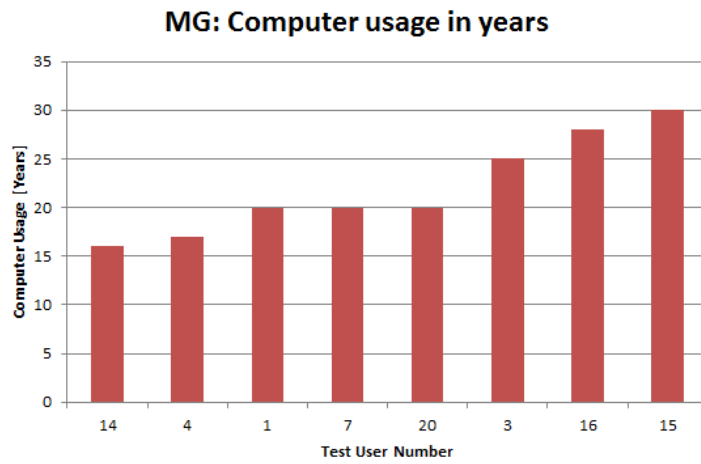


Figure 5.10.: MG: Computer usage in years per test user

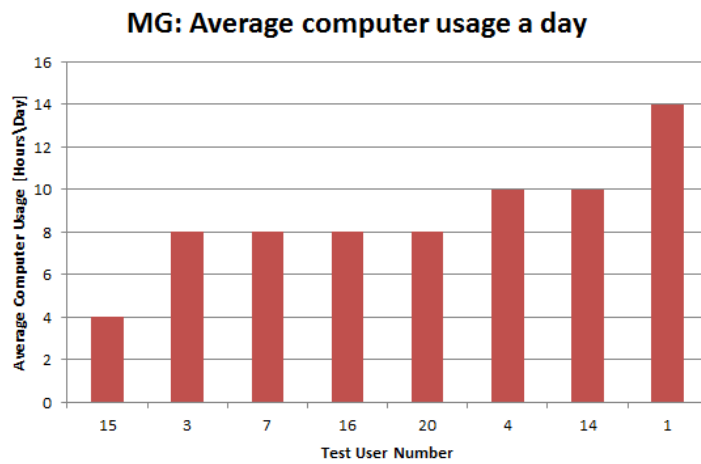


Figure 5.11.: MG: Daily computer usage per test user

5. Test Users

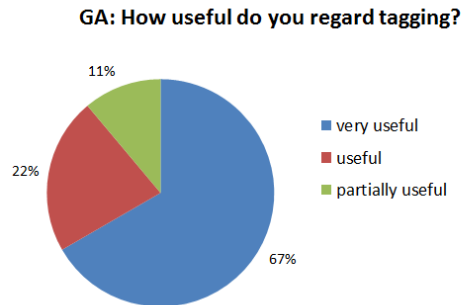


Figure 5.12.: GA: Users who already used tagging: How useful do you regard tagging?

The main file browser, used by MG test persons, was Windows Explorer. 56 % of MG participants used Windows Explorer, 22 % used Total Commander, 11 % used Free Commander and 11 % used Krusader.

5.5. GA: Previous Knowledge and Usage of Tagging

To obtain some information on tagging knowledge and previous usage of tagging, participants were asked if they know the term tagging, if and how they use tagging and how useful they regard tagging. This section presents the results of these questions. 94 % of all users knew the term tagging, but only 50 % had actually used tagging. The time of tagging experience of those 50 % varied between two months and five years. Of those users, who had used tagging before 56 % changed their tags on a regular basis and 44 % seldom or never changed their tags. Most tagging users regarded tagging as very useful and none of the tagging users regarded tagging as not useful. For detailed information see Figure 5.12.

5.6. MG: Previous Knowledge and Usage of Tagging

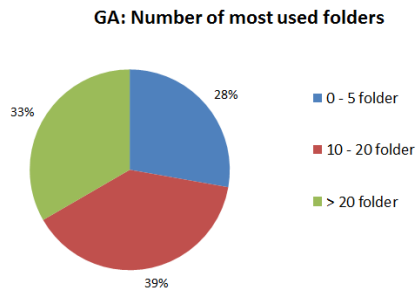


Figure 5.13.: GA: Number of most used folders by test users

5.6. MG: Previous Knowledge and Usage of Tagging

87% of MG users already knew the term tagging and 62% had actually used tagging. The time of tagging experience was the same as for GA (two months to three years). Of those users, who had used tagging before, 80% changed their tags on a regular basis and 20% seldom or never changed their tags. Most tagging MG users (60%) regarded tagging as very useful, 20% regarded it as useful and 20% regarded it as partially useful.

5.7. GA: Current Usage of Folders

To collect some information about the habits regarding filing and piling, test users were asked how many folders they consider to be their most used folders or main folders and how the users categorize themselves.

The number of folders should provide some information about users being either a filer or a piler. As a rough approach, five folders were defined as limit for *pilers*. All users with more than five most used folders were classified as *filers* (for definition of those terms see Section 1.3).

5. Test Users

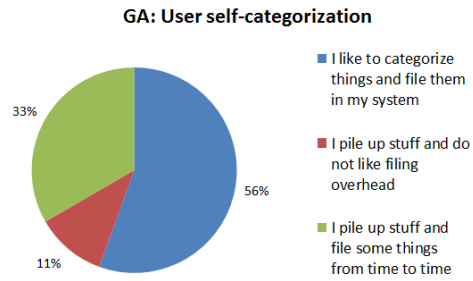


Figure 5.14.: GA: Self categorization of test users

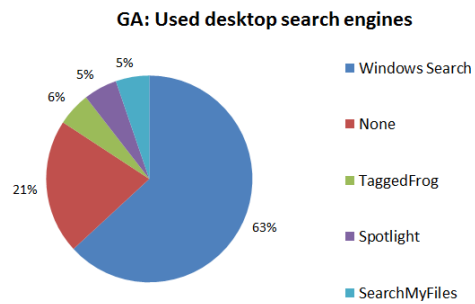


Figure 5.15.: GA: Used desktop search engines

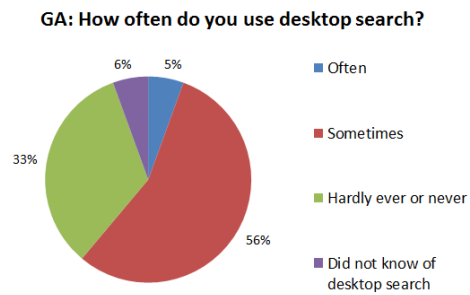


Figure 5.16.: GA: How often do you use desktop search?

5.8. MG: Current Usage of Folders

The self categorization of users should enable a more detailed classification of users between *filers*, *pilers* and *spring cleaners* (for definition of those terms see Section 1.3). Users had to choose one of the following answers:

- I pile up stuff and do not like filing overhead.
- I pile up stuff and file some things from time to time.
- I like to categorize things and file them in my system.

These answers were used as a rough approximation for a categorization as filer, piler and spring cleaner. The first answer was interpreted as piler, the second as spring cleaner and the third as filer. The following interpretation of results is based on this categorization.

Only 11 % regarded themselves as pilers, but 28 % had five or less most used folders. And those users, who categorized themselves as pilers had an average of 23 most used folders and a minimum of 15 most used folders. 56 % regarded themselves as filers and 33 % regarded themselves as spring cleaners. However, the minimum number of most used folders for both groups was three. There seems to be a high discrepancy between actual user behavior and self-assessment of users. For detailed information about most used folder and self categorization of users see Figure 5.13 and Figure 5.14.

Additionally, users were asked which desktop search engines they used and how often they used them. Most users (63 %) used Windows search and used desktop search engines only sometimes (56 %), if they could not find their files fast through other ways. For detailed information see Figure 5.15 and Figure 5.16. An interesting fact is, that 33 % answered that they did not use any desktop search and 6 % that they did not know of desktop search engines.

5.8. MG: Current Usage of Folders

For information about the classification of users into filers, pilers and spring cleaners, please read the preceding section.

5. Test Users

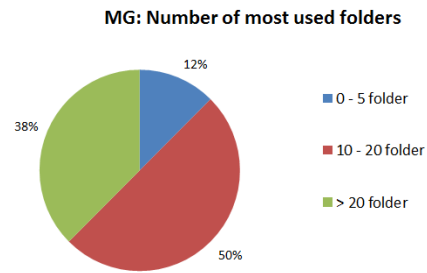


Figure 5.17.: MG: Number of most used folders by test users

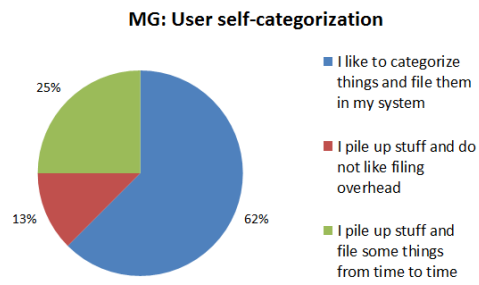


Figure 5.18.: MG: Self categorization of test users

5.9. GA: Previous Experience with tagstore

13 % of MG users regarded themselves as pilers and had on average 15 most used folders, so it is questionable, if the users were real pilers or rather filers. The 25 % test users, who categorized themselves as spring cleaners had on average 15 most used folders as well, which fits their self-assessment. The 62 % filers had on average 39 most used folders, which also matches their self-assessment. The self-assessment of MG users seems to be a better than the one of all users. Summing it up 88 % of MG users were filers, and the average number of most used folders from the remaining 12 % suggests, their were more of a filing type as well. For detailed information about most used folder and self categorization of users see Figure 5.17 and Figure 5.18.

Most 37 % MG users used Windows Search as desktop search engine, 13 % used TaggedFrog, 13 % SearchMyFiles. Interestingly the same number of users (37 %) used either Windows Search or no desktop search at all. The majority (62 %) used desktop search only sometimes, 25 % hardly ever or never and 13 % did not know of desktop search engines. Nobody used desktop search often.

5.9. GA: Previous Experience with tagstore

Users were asked if they already had some experience with tagstore prior to the test. 11 % had some previous experience and 89 % did not. The time of previous tagstore usage varied between three days and one year (only one test user).

5.10. MG: Previous Experience with tagstore

All users with previous tagstore experience were contained in MG as well, only the group size of MG was less than half the size of GA. 25 % of MG users had some previous experience and 75 % did not. The time of previous tagstore usage, again, varied between three days and one year (only one test user).

5. Test Users

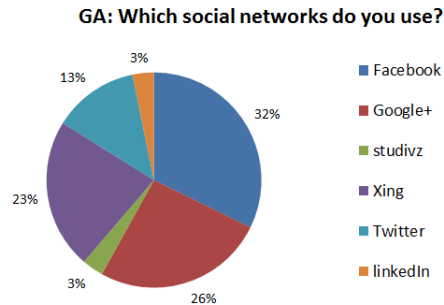


Figure 5.19.: GA: Users, who use social networks: Used social networks

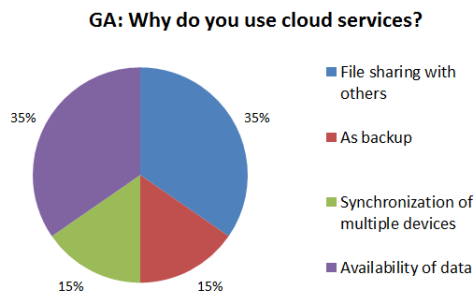


Figure 5.20.: GA: Users, who use cloud services: Why do use cloud services?

5.11. GA: Usage of Social Networks and Cloud Services

Test users seem to have a very high awareness of privacy issues, as to all of them it was important or very important to have control over personal files and personal data. Nevertheless many of them used social networks (67%) and cloud services (61%). The most used social network was Facebook (32%). None of the test users had a public profile. All users of social networks used privacy options of some kind and shared only some bits of information, which fits to their awareness of privacy issues. For more

5.12. MG: Usage of Social Networks and Cloud Services

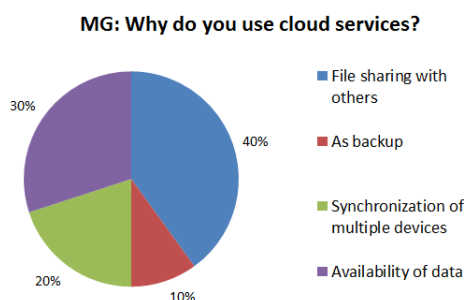


Figure 5.21.: MG: Users, who use cloud services: Why do you use cloud services?

details on social network usage see Figure 5.19.

The sharing of information and files was a very common reason for using social networks and cloud services. Another often mentioned reason for using cloud services was the availability of data (35 %). Users wanted their files to be accessibly everywhere they go. For more information see Figure 5.20.

5.12. MG: Usage of Social Networks and Cloud Services

Fewer MG test persons than GA users, but still 62 % used social networks and cloud services. The most used social network for MG users was XING (37 %), only 27 % used Facebook. Other used social networks were Google+ (18 %) and Twitter (18 %).

The sharing of information and files was a major reason (40 %) for usage of cloud services. The second most mentioned reason was the availability of data (30 %). Users wanted their files to be accessible everywhere they go. For detailed information see Figure 5.21.

5. Test Users

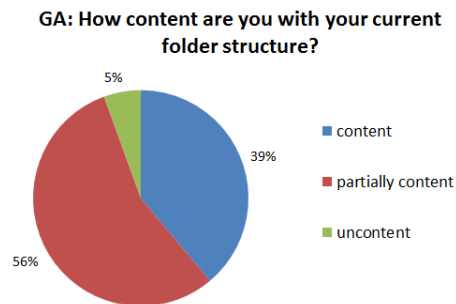


Figure 5.22.: GA: Satisfaction with the current folder structure

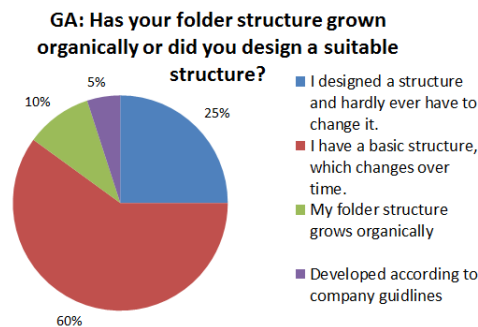


Figure 5.23.: GA: Development of the current folder structure

5.13. GA: Status Quo of the Folder Structure

To obtain some information of the situation before the test, users were asked how satisfied they were with their current folder structures. Although most people were nowadays used to their folder structure, none of them were very content with their current folder structure. This might be the reason, why 60% of test users changed their folder structure over time (see Figure 5.23). However none of the users were very uncontent with their current folder structure either (see Figure 5.22). There seems to be little need for improvement, because 95% were (partially) content with

5.14. MG: Status Quo of the Folder Structure

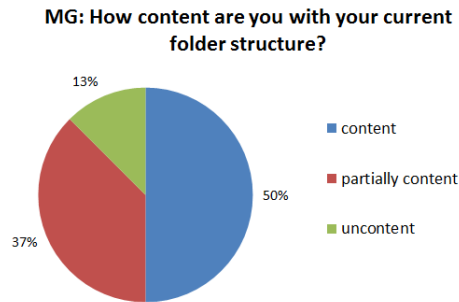


Figure 5.24.: MG: Satisfaction with the current folder structure

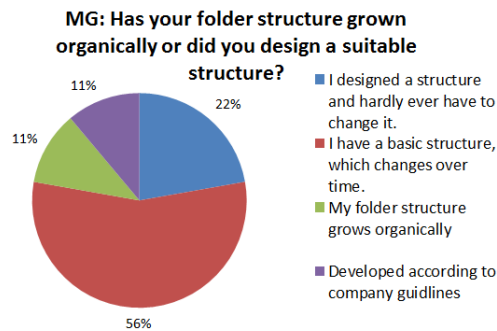


Figure 5.25.: MG: Development of the current folder structure

their current folder structure. Maybe this is because users are so used to their current systems and the restrictions of these systems, that they are not aware of any room for improvement.

5.14. MG: Status Quo of the Folder Structure

Compared to users of GA, users of MG seem to be more content (50 %) and uncontent (13 %) with their current file structure. Only the percentage

5. Test Users

of partially content (37%) is smaller for MG users than for GA users. For the development of folder structures of MG users see Figure 5.24.

5.15. GA: Expectations Towards tagstore

This sections was evaluated for GA only, because the expectations of MG and GA were quite similar.

Expectations towards tagstore were identified before the test as well. What test users wanted most were smart and fast solutions for searching/re-finding, grouping and filtering their items. A better and easier folder structure and easy and fast file access were expected from test users as well. Other expectations included integration in Windows Explorer, automatic deletion of useless files, less redundancy, fast filing of items, integration into operating systems, time saving, less searching, better overview over files and different folder views depending on the task performed.

6. Results

Group	BG-Q	1. Week-Q	2. Week-Q	Final-Q	Diary	Log Files
MG	×	×	×	×	×	×
GA	×	×	×		×	

Table 6.1.: Evaluations for each group. BG = Background, Q = Questionnaire

Test users TP01, TP03, TP04, TP07, TP14, TP15, TP16, and TP20 were defined as main group (MG), because they participated in all parts of the test. Users, who did not participate in all parts of the test were summarized as group all (GA). See Chapter 5 for detailed information. Members of GA changed over time and GA always included MG as well. Each section will explain, which test users form GA for the specific part of the evaluation. Table 6.1 shows which evaluations were done for which groups. MG was evaluated for all parts, GA only for some parts, because for the other parts not enough useful information could be collected.

The first sections of this chapter present and discuss the results from the questionnaires. All questionnaires were evaluated for the main group and some were evaluated for all users as well. The subsequent sections present the results from the log files. If an evaluation was done for both groups, sections concerning the main group were marked with *MG:* and sections concerning all users, who did this part of the test were marked with *GA:*.

Comparisons between different groups of users, for example male - female, IT studies - no IT studies etc. were not performed because subdividing MG would have led to very small and often unbalanced subgroups.

6. Results

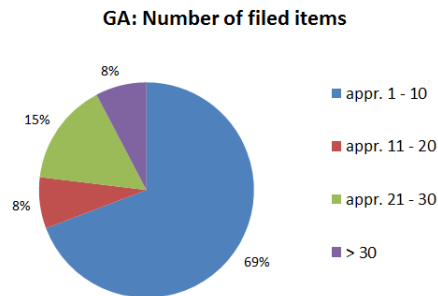


Figure 6.1.: GA: Number of filed items during the first week

6.1. Results of the First Weekly Questionnaire

After the first week all 18 test persons filled in the questionnaire, but only 13 test users did actually use tagstore for filing and/or re-finding items during the first week. The other users had no time to use tagstore or had problems installing tagstore. Questions regarding the usage of tagstore were evaluated for the 13 test users and MG. The other five questionnaires were only evaluated regarding the test diary, installation issues and so on (see Section 6.5). The 13 evaluated questionnaires include those of the following test persons (TP): TP01, TP02, TP03, TP04, TP07, TP09, TP10, TP13, TP14, TP15, TP16, TP17, and TP20. These users (MG included) built GA for the first weekly questionnaire. MG were as always test persons TP01, TP03, TP04, TP07, TP14, TP15, TP16, and TP20.

6.1.1. GA: Filing with tagstore

The number of filed items was quite small for the first week. This might be, because users needed some time to install tagstore and to get familiar with it. Most of the test users (69%) filed ten or less items in the first week (Figure 6.1). The unfamiliarity of tagstore might also be the reason why 54% regarded tagstore as (very) unhelpful when filing items and only 46% regarded tagstore as partially to very helpful (Figure 6.2).

6.1. Results of the First Weekly Questionnaire

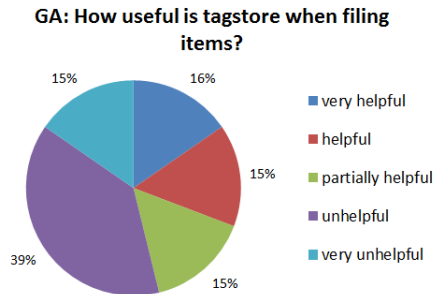


Figure 6.2.: GA: How useful is tagstore when filing items? Week one

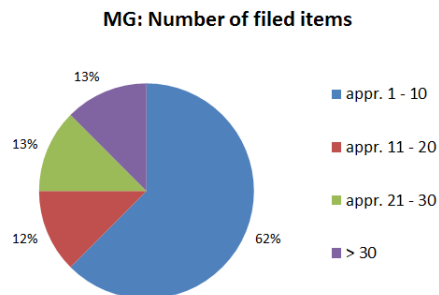


Figure 6.3.: MG: Number of filed items during the first week

6.1.2. MG: Filing with tagstore

The percentages of filed files were quite similar for groups GA and MG as one can see in Figure 6.3 and Figure 6.1. 50% of MG users regarded tagstore as (very) unhelpful when filing items and 50% regarded tagstore as partially to very helpful (Figure 6.4).

6. Results

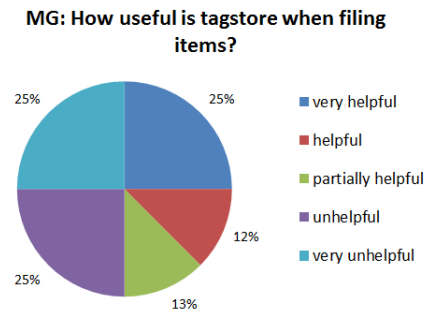


Figure 6.4.: MG: How useful is tagstore when filing items? Week one

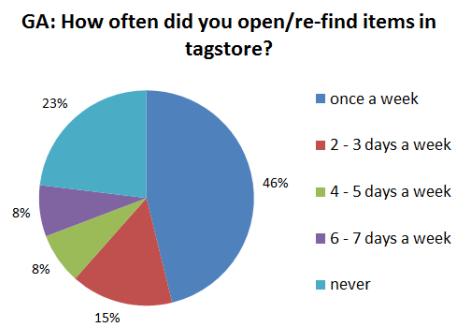


Figure 6.5.: GA: How often did you open/re-find items in tagstore in the first week?

6.1. Results of the First Weekly Questionnaire

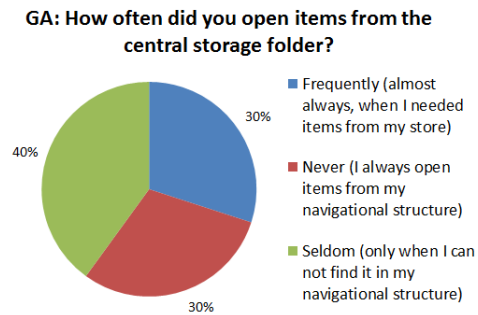


Figure 6.6.: GA: Users who used tagstore for re-finding at least once: How often did you open items from the central storage folder in week one?

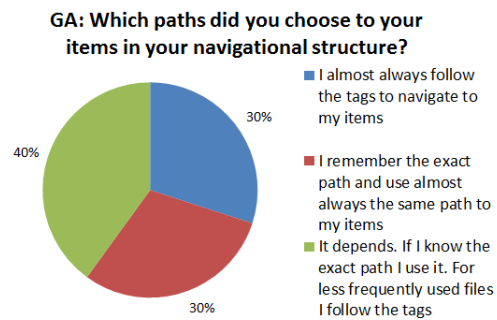


Figure 6.7.: GA: Users who used tagstore for re-finding at least once: Which paths did you choose to your items in your navigational structure in week one?

6. Results

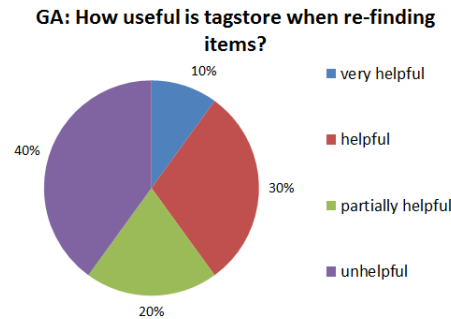


Figure 6.8.: GA: Users who used tagstore for re-finding at least once: How useful is tagstore when re-finding items? Week one

6.1.3. GA: Re-finding with tagstore

During the first week tagstore was used rather scarcely for re-finding items. The majority (69 %) of the test users used tagstore never or only once for retrieving an item and only 31 % used it more often (Figure 6.5).

Users, who did not use tagstore for re-finding in week one (23 %) were eliminated from the following evaluations in this section.

Of those users, who used tagstore at least once for re-finding, 80 % used it sporadically and 20 % used it various times a day. Figure 6.7 shows that most test users (70 %) never or seldom used the central storage folder and rather used the navigational TagTrees structure. When using the navigational structure 70 % used the associative navigation through tags at least sometimes. Of those 70 %, 30 % used associative navigation almost exclusively (Figure 6.7).

When asked how useful they regard tagstore for re-finding items, 60 % regarded tagstore as more or less helpful and only 40 % regarded it as unhelpful. None of the users thought that tagstore was very unhelpful (Figure 6.8). It is not surprising, that users rate tagstore better for re-finding than for filing, because filing with tagstore needs on average more time than filing with the usual folder structures (De Vocht et al., 2012; Harzl et al., 2012). Re-finding with tagstore on the other hand is objectively as fast

6.1. Results of the First Weekly Questionnaire

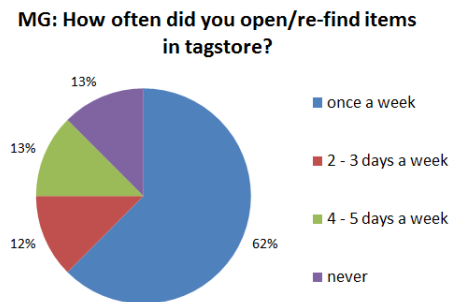


Figure 6.9.: MG: How often did you open/re-find items in tagstore in the first week?

as with Windows Explorer and subjectively faster (De Vocht et al., 2012; Harzl et al., 2012).

In the first week 90 % did not need a desktop search engine to find an item in their TagTrees structure. The reason given by the other 10 % why they had to use desktop search was, that they could not remember the exact tags.

6.1.4. MG: Re-finding with tagstore

The majority (87%) of MG users used tagstore at least once for retrieving an item and only 13 % never used it (Figure 6.9). MG users, who did not use tagstore for re-finding in week one (13 %) were excluded from all subsequent evaluations in this section.

Of those users, who used tagstore at least once for re-finding, 71 % used it sporadically and 29 % used it various times a day. MG members used the central storage folder more frequently (43 % compared to 30 %) than GA users (see Figure 6.10). However, 57 % still preferred the navigational TagTrees structure for file retrieval. When using the navigational structure, 57 % used the associative navigation through tags for less frequently used items. For often used items, they used the remembered paths. 29 % almost

6. Results

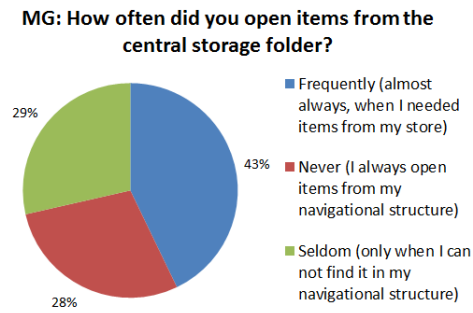


Figure 6.10.: MG: Users who used tagstore for re-finding at least once: How often did you open items from the central storage folder in week one?

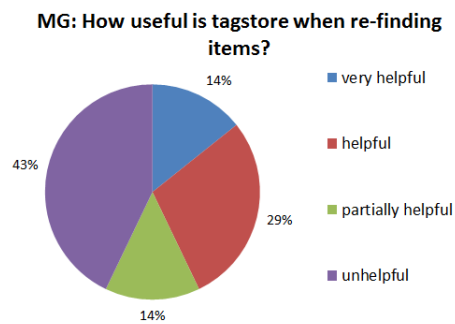


Figure 6.11.: MG: Users who used tagstore for re-finding at least once: How useful is tagstore when re-finding items? Week one

6.1. Results of the First Weekly Questionnaire

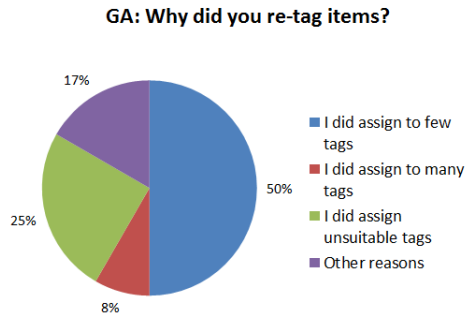


Figure 6.12.: GA: Why did you re-tag items in the first week?

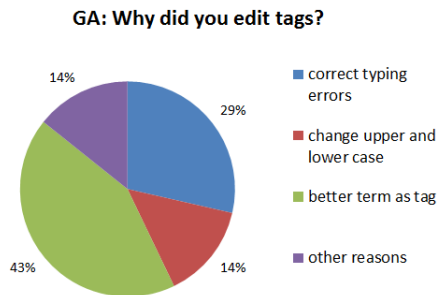


Figure 6.13.: GA: Why did you edit tags in the first week?

always used remembered paths and another 14 % almost always used associative navigation. 57 % of MG users regarded tagstore as more or less helpful and 43 % regarded it as unhelpful, when re-finding items (see Figure 6.11). None of the MG users needed a desktop search for re-finding items during week one.

6.1.5. GA: Re-tagging and Editing Tags

46 % of the test users never re-tagged items in their first week with tagstore, 46 % sometimes re-tagged items and 8 % often re-tagged items. Figure 6.12

6. Results

shows the reasons why users re-tagged items during the first week. The most mentioned reason was, that too few tags were assigned to an item. *Other reasons* include “I did not want the automatic date stamp” and “I did not know if the tagging was successful”.

Editing tags was used less than re-tagging. Only 23 % edited tags during week one. 69 % were satisfied with their tags and never edited them. 8 % did not know about that feature and would not have wanted to edit tags, if they had known about that feature. Figure 6.13 shows the reasons for editing tags. The major reason (43 %) was, that users found a more suitable tag. *Other reasons* include changing the format of the date stamp.

6.1.6. MG: Re-tagging and Editing Tags

50 % of MG test users never re-tagged items in their first week with tag-store, 37 % sometimes re-tagged items and 13 % often re-tagged items. The following reasons were given for re-tagging: 57 % assigned too few tags, 29 % assigned unsuitable tags and 14 % re-tagged, because they did not know, if the tagging process had been successful.

Editing tags was again used less than re-tagging. 12 % edited tags during week one. 75 % were satisfied with their tags and never edited them. 13 % did not know about that feature and would not have wanted to edit tags, if they had known about that feature. Reasons for editing tags included: users found a more suitable tag (50 %) and the date stamp format was changed (50 %).

6.1.7. GA: Tag Cloud

The tag recommendations of the tag cloud could be rated with marks from 1 (= very good) to 5 (insufficient). 46 % rated a 2, 46 % a 3 and 8 % rated a 4. Nobody rated 1 or 5.

6.1. Results of the First Weekly Questionnaire

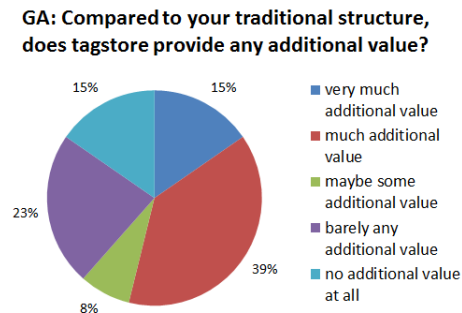


Figure 6.14.: GA: Compared to your traditional structure, does tagstore provide any additional value? Week one

6.1.8. MG: Tag Cloud

The tag recommendations of the tag cloud could be rated with marks from 1 (= very good) to 5 (insufficient). 38 % of MG users rated a 2, 50 % a 3 and 12 % rated a 4. Nobody rated 1 or 5.

6.1.9. GA: Additional Value of tagstore

When asked, if tagstore provides any additional value compared to a usual folder hierarchy, 62 % answered yes and 38 % saw barely any additional value or no additional value at all (Figure 6.14). After week one 62 % were not sure, if the additional value of tagstore was worth the additional effort when filing with tagstore. The other 38 % have made their decision, 23 % said yes and 15 % thought it is too much effort (Figure 6.15).

When asked, what they regard as an additional value, users gave the following answers:

- different groupings/filters are possible for re-finding
- different hierarchies are possible
- it is time saving
- re-finding files is easier

6. Results

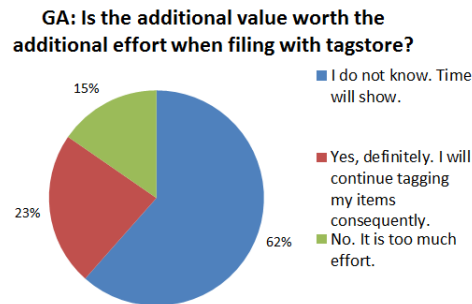


Figure 6.15.: GA: Is the additional value worth the additional effort when filing with tagstore? Week one

- faster re-finding with various possibilities
- everything is in one folder
- it is more intuitive

6.1.10. MG: Additional Value of tagstore

62 % of MG users thought, that tagstore provides (very) much additional value compared to traditional folder structures and 38 % saw barely any additional value or no additional value at all (Figure 6.16).

MG users seem to like tagstore more, because 37 % answered, that they will definitely continue tagging their items. For 13 % tagging is too much effort, and 50 % were not sure.

When asked, what they regard as an additional value, users gave the following answers:

- different groupings/filters are possible for re-finding
- it is time saving
- re-finding files is easier
- faster re-finding with various possibilities
- it is more intuitive

6.1. Results of the First Weekly Questionnaire

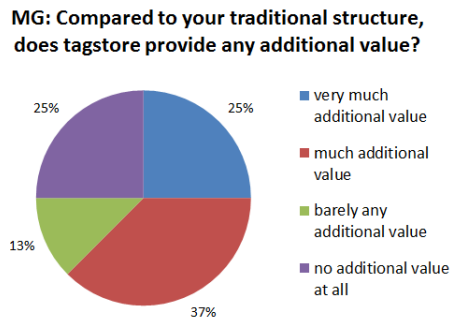


Figure 6.16.: MG: Compared to your traditional structure, does tagstore provide any additional value? Week one

6.1.11. GA: Next Week

Users were asked, if they look forward to another week with tagstore. 85 % said yes and 15 % said no.

The following reasons were given for the answer no:

- I do not know where to find my files with tags.
- The support provided by tagstore is not enough. There are files missing in the store and I am experiencing problems with PDFs.

The following reasons were given for the answer yes:

- Tagging is easier than creating a folder structure.
- File retrieval is easier and more fun.
- I want to bring structure into my file chaos.
- I will learn something new about tagstore and myself.
- I am curious what will be happening next.
- I am hoping for a better working tagstore next week.
- I want to file more files with tagstore and use its advantages better.
- I hope to improve my work routine with tagstore.

6. Results

6.1.12. MG: Next Week

Although more MG users saw additional value in tagstore (see Section 6.1.10), fewer users (in percent) looked forward to another week of testing. 75 % looked forward to it and 25 % did not.

The following reasons were given for the answer no:

- I do not know where to find my files with tags.
- The support provided by tagstore is not enough. There are files missing in the store and I am experiencing problems with pdfs.

The following reasons were given for the answer yes:

- I want to bring structure into my file chaos.
- I am hoping for a better working tagstore next week.
- I want to file more files with tagstore and use its advantages better.
- I hope to improve my work routine with tagstore.

6.2. Results of the Second Weekly Questionnaire

The second weekly questionnaire was answered by 18 test users, but only 12 of them did actually use tagstore for filing and/or re-finding items during the second week. The other users had no time to use tagstore. Questions regarding the usage of tagstore were evaluated for the 12 test users and MG separately. The other six questionnaires were only evaluated regarding the test diary, installation problems and so on (see Section 6.5).

The 12 evaluated questionnaires include those of the following test persons (TP): TP01, TP03, TP04, TP06, TP07, TP09, TP14, TP15, TP16, TP18, TP20, and TP22. These users (MG included) built GA for the second weekly questionnaire. MG were as always test persons TP01, TP03, TP04, TP07, TP14, TP15, TP16, and TP20.

6.2. Results of the Second Weekly Questionnaire

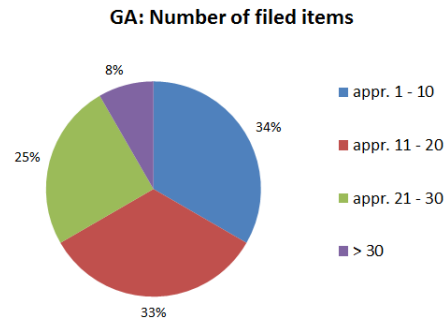


Figure 6.17.: GA: Number of filed items during the second week

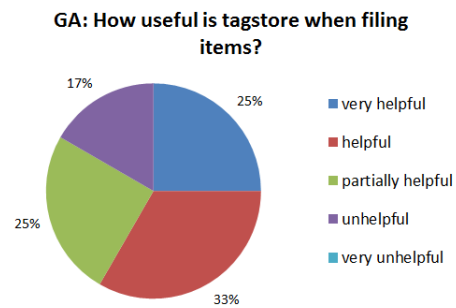


Figure 6.18.: GA: How useful is tagstore when filing items? Week two

6. Results

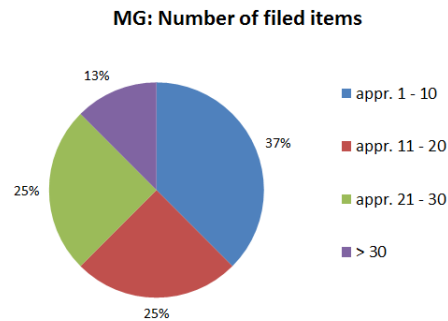


Figure 6.19.: MG: Number of filed items during the second week

6.2.1. GA: Filing with tagstore

The number of filed items increased a little bit in week two. 34 % of GA users filed ten or less items and 66 % filed 11 or more files during the second week (see Figure 6.17). A decrease from 54 %, regarding tagstore as (very) unhelpful when filing items, to 42 % is also a slight improvement. More impressive is the increase from 31 % in week one regarding tagstore as (very) helpful to 58 % in week two. For detailed ratings see Figure 6.18.

6.2.2. MG: Filing with tagstore

The number of filed items were quite similar for GA and MG in week two, see Figure 6.17 and Figure 6.19. Ratings about the usefulness of tagstore when filing were almost identical, only ratings for unhelpful and partially helpful were slightly different (see Figure 6.18 and Figure 6.20).

6.2.3. GA: Re-finding with tagstore

In week two the usage of tagstore for re-finding items increased compared to week one. 83 % of the 18 test users used tagstore at least once, and 67 % used it several days a week (see Figure 6.21).

6.2. Results of the Second Weekly Questionnaire

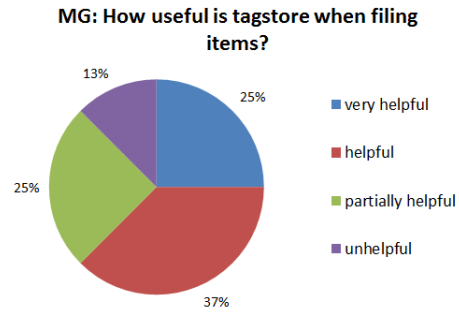


Figure 6.20.: MG: How useful is tagstore when filing items? Week two

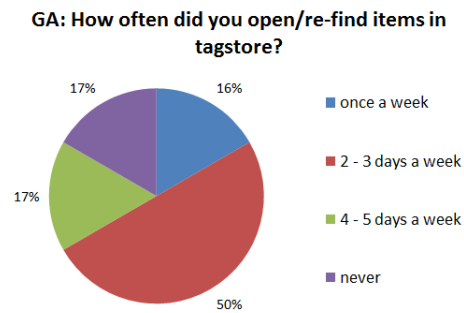


Figure 6.21.: GA: How often did you open/re-find items in tagstore in the second week?

6. Results

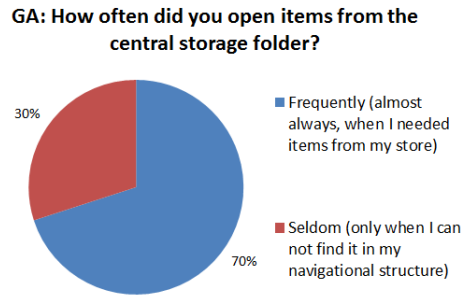


Figure 6.22.: GA: Users who used tagstore for re-finding at least once: How often did you open items from the central storage folder in week two?

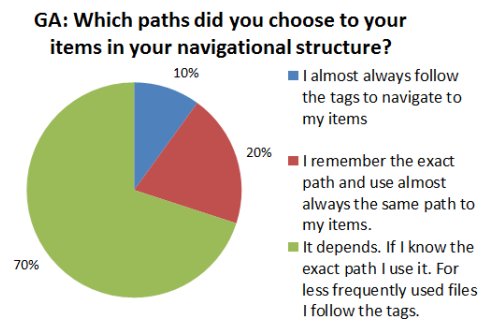


Figure 6.23.: GA: Users who used tagstore for re-finding at least once: Which paths did you choose to your items in your navigational structure in week two?

6.2. Results of the Second Weekly Questionnaire

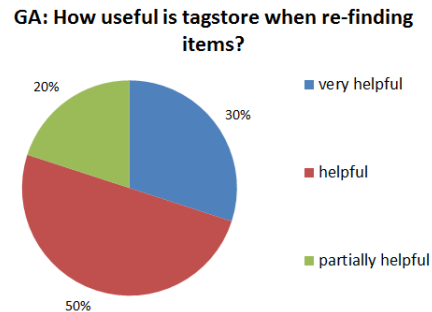


Figure 6.24.: GA: Users who used tagstore for re-finding at least once: How useful is tagstore when re-finding items? Week two

Users, who did not use tagstore for re-finding in week two (17 %) were eliminated from the subsequent evaluations in this section.

Of those users, who used tagstore at least once for re-finding, 80 % used it sporadically and 20 % used it various times a day. Figure 6.23 shows that most test users (70 %) frequently used the central storage folder and 30 % used it at least seldom. Nobody used only TagTrees for re-finding items. This change in behavior might be caused by a usability issue described in Section 6.5. It is not possible to delete, copy, email or rename items in TagTrees. This is only possible in the central storage folder.

When using the navigational structure 80 % used the associative navigation through tags at least sometimes. Of those 80 %, 10 % used associative navigation almost exclusively (Figure 6.23). The other 20 % hardly ever or never used associative navigation.

In week two none of the test users regarded tagstore as (very) unhelpful for re-finding items. 80 % even regarded tagstore as being (very) helpful (Figure 6.24). During the second week none of the test users had to use a desktop search engine to find an item in TagTrees.

6. Results

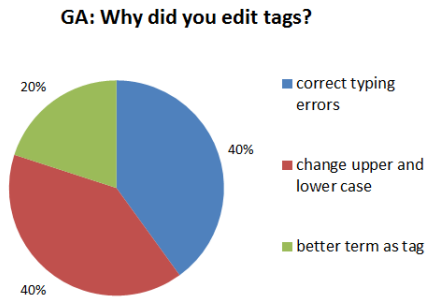


Figure 6.25.: GA: Why did you edit tags in the second week?

6.2.4. MG: Re-finding with tagstore

25 % of MG members used tagstore once a week for re-finding items, 37 % used it 2–3 days a week, 13 % 4–5 days a week and 25 % never used tagstore for re-finding items in week two. MG users, who did not use tagstore for re-finding in week two (25 %) were eliminated from the subsequent evaluations in this section. Of those users, who used tagstore at least once for re-finding, 83 % used it sporadically and 17 % used it various times a day.

Most MG users (83 %) frequently used the central storage folder and 17 % used it at least seldom. Nobody used only TagTrees for re-finding items. Possible reasons for this change in behavior were described in the previous section.

17 % of MG users always used associative navigation and 83 % used either remembered paths and associative navigation. In week two none of the MG test users regarded tagstore as (very) unhelpful for re-finding items. 17 % regarded tagstore as being very helpful, and 83 % as helpful. As described in the previous section none of the test users had to use a desktop search engine to find an item in TagTrees during the second week.

6.2.5. GA: Re-tagging and Editing Tags

In week two 67% of the GA test users never re-tagged items and 33% sometimes re-tagged items. Nobody re-tagged items often. Reasons given for re-tagging were “I did assign too few tags” and “I did assign unsuitable tags”.

Editing tags was used less than re-tagging. Only 25% edited tags sometimes in week two. 67% were satisfied with their tags and never edited them. 8% did not know about that feature. Those 8% would have edited tags for the following reasons: correcting typing errors and replacing a tag with a better term. Figure 6.25 shows the reasons for editing tags of those, who actually did edit some tags. The major reasons (40% each) were, correcting typing errors and changing upper and lower case. The third reason was replacing a tag with a better term.

6.2.6. MG: Re-tagging and Editing Tags

In week two 63% of MG members never re-tagged items and 37% sometimes re-tagged items. Nobody re-tagged items often. The reasons were the same as described in the previous section.

For editing tags the percentages and reasons were a little bit different. 75% of MG members never edited tags and 25% edited tags sometimes. Reasons for editing tags were correcting typing errors and changing upper and lower case.

6.2.7. GA: Tag Cloud

The tag recommendations of the tag cloud could be rated with marks from 1 (= very good) to 5 (insufficient). 67% rated a 2 and 33% rated a 3. Nobody rated 1, 4 or 5.

6. Results

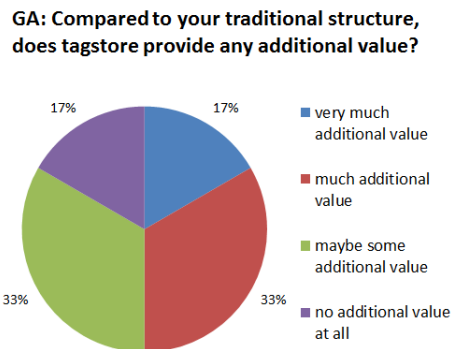


Figure 6.26.: GA: Compared to your traditional structure, does tagstore provide any additional value? Week two

6.2.8. MG: Tag Cloud

Rating options are described in the previous section. 50% of MG users rated a 2 and 50% rated a 3. Nobody rated 1, 4 or 5.

6.2.9. GA: Additional Value of tagstore

The opinions about the additional value of tagstore improved in week two. Only 17% saw no additional value at all in week two and barely any additional value was never selected by a test user. Whereas 50% saw (very) much additional value in tagstore compared to their traditional structure (see Figure 6.26).

After week two 42% were still not sure, if the additional value of tagstore was worth the additional effort when filing with tagstore. 50% will definitely continue tagging items, which is a tremendous improvement compared to the 23% in week one. 8% did not answer this question (see Figure 6.27).

When asked, what they regard as an additional value, users gave the following answers:

6.2. Results of the Second Weekly Questionnaire

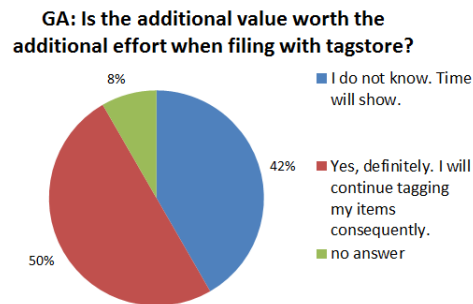


Figure 6.27.: GA: Is the additional value worth the additional effort when filing with tagstore? Week two

- re-finding items is easier
- expiry date helps identifying and deleting temporary items
- grouping of items with the help of various categories
- no need for remembering how one may have categorized an item when filing
- no need for filing an item twice
- faster re-finding, if exact location of an item cannot be remembered
- various paths to an item
- no need for desktop search
- additional options for re-finding items
- cannot see any additional value

6.2.10. MG: Additional Value of tagstore

In week two MG users saw less additional value in tagstore structures than GA members. 25 % saw no additional value at all compared to 17 % of GA. Barely any additional value was never selected by MG users. 12 % of MG users saw very much additional value in tagstore compared to 17 % of GA users. Percentages for much additional value are quite the same (MG: 38 %, GA: 33 %). 25 % selected maybe some additional value.

After week two more MG members than GA members were not sure, if

6. Results

the additional value of tagstore was worth the additional effort when filing with tagstore (MG: 50 %, GA: 42 %). 37 % of MG users answered, that they will definitely continue tagging items and 13 % did not answer the question.

When asked, what they regarded as an additional value, MG users gave the same answers as GA users, only *no need for filing an item twice* was not mentioned by MG users.

6.2.11. GA: Next Week

In week two 92 % looked forward to the next week and only 8 % did not.

For the answer no, no reasons were given. Maybe the reason was lack of time because the same user did not write a test diary this week due to lack of time.

The following reasons were given for the answer yes:

- want to gain more experience with tagstore
- advantages will show more with many files
- the more items tagstore contains, the more often I will use it
- it is fun to have more information than only a file name
- one gets a good overview over the own work
- organize items better
- curious about how TagTrees develop over time
- facilitates office management

6.2.12. MG: Next Week

In week two 88 % looked forward to the next week and only 12 % did not. Again, the absolute number of people, who answered no, stayed the same, but the overall group size shrank. For the answer no, no reasons were given.

The following reasons were given for the answer yes:

6.3. Results of the Final Questionnaire

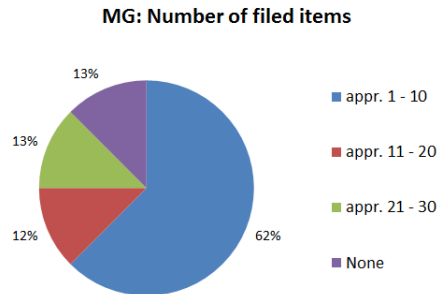


Figure 6.28.: MG: Number of filed items during the final week

- want to gain more experience with tagstore
- advantages will show more with many files
- the more items tagstore contains, the more often I will use it
- organize items better
- curious about how TagTrees develop over time

6.3. Results of the Final Questionnaire

The final questionnaire was answered by 16 test users, but only 11 of them did actually use tagstore for filing and re-finding items during the final week. This questionnaire was evaluated for MG only, because of those GA users, who filled in the final questionnaire, only a few did use tagstore during the final week. Those few additional test users would not have justified an additional evaluation. MG were as always test persons TP01, TP03, TP04, TP07, TP14, TP15, TP16, and TP20.

6.3.1. Filing with tagstore

Most MG users filed approximately 1–10 items in the final week (see Figure 6.17). After week three 62 % regarded tagstore more or less helpful and 38 % regarded it as (very) unhelpful. For detailed ratings see Figure 6.29.

6. Results

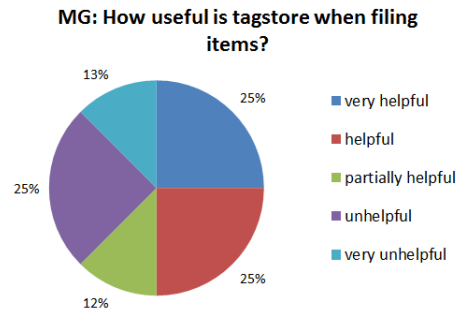


Figure 6.29.: MG: How useful is tagstore when filing items? Final week

6.3.2. Re-finding with tagstore

25 % of MG members used tagstore once a week for re-finding items, 37 % used it 2–3 days a week and 38 % 4–5 days in the final week. 75 % used it sporadically and 25 % used it various times a day, when they were using tagstore. 25 % of MG users frequently used the central storage folder and 37 % used it at least seldom. 12 % used almost exclusively TagTrees for re-finding items. 12 % of MG users always used associative navigation, 38 % remembered paths and 50 % used associative navigation and remembered paths. In the final week none of the MG test users regarded tagstore as very helpful for re-finding items, but 75 % regarded it as helpful. 13 % regarded tagstore as being very unhelpful, and 12 % as unhelpful.

None of the MG test users had to use a desktop search engine to find an item in TagTrees during the second week.

6.3.3. Re-tagging and Editing Tags

In the final week 75 % of MG members never re-tagged items and 25 % sometimes re-tagged items. Nobody often re-tagged items. The reasons for re-tagging were, that users assigned too few tags or unsuitable tags. 88 % of MG members never edited tags and 12 % edited tags sometimes. Reasons

6.3. Results of the Final Questionnaire

for editing tags were correcting typing errors and replacing a tag with a better term.

6.3.4. Tag Cloud

The tag recommendations of the tag cloud could be rated with marks from 1 (= very good) to 5 (insufficient). 38 % rated a 2 and 62 % rated a 3. Nobody rated 1, 4 or 5.

Things MG users liked about the tag cloud:

- design
- it made tagging faster
- good recommendations
- prevents from using similar tags, because already existing ones are displayed

Suggestions for improvements included:

- offer more suitable tags
- better structure
- scan the items and offer found meta data as tags
- make it adaptive
- display more tags

6.3.5. Additional Value of tagstore

After the final week 13 % saw no additional value at all and 13 % saw barely any additional value. 25 % of MG users saw very much additional value, 37 % saw much additional value and 12 % saw maybe some additional value.

After the final week 63 % said, that they would definitely continue tagging items, 12 % did not know it yet and for 25 % it was too much effort.

When asked, what they regarded as an additional value, MG users gave the following answers:

6. Results

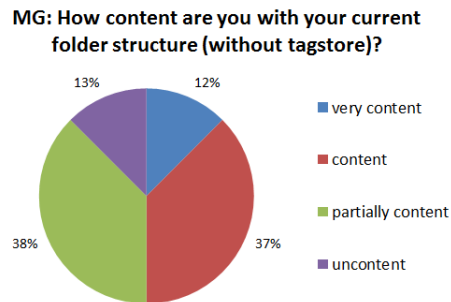


Figure 6.30.: MG: Satisfaction with the current folder structure

- multiple places for one file
- expiry date feature
- grouping for more than one criterion possible
- I can focus on my work and not on where I stored it
- file retrieval through context
- easier re-finding for seldom used items

Negative feedback was, that the folder structure is very complex and often many clicks are needed to find an item.

6.3.6. Folder Structure

When comparing the satisfaction with the current folder before the test (Figure 5.24) and after the test (Figure 6.30), one can see, that only the percentages of very content to partially content users have changed, the percentage of uncontent users did not change.

Figure 6.30 (usual folder structure) and Figure 6.31 (TagTrees structure) do not show much difference either. The percentages for very content, content and uncontent are exactly the same. Only very uncontent (0% compared to 13% TagTrees) and partially content (38% compared to 25% TagTrees) differ.

6.3. Results of the Final Questionnaire

MG: How content are you with your tagstore folder structure?

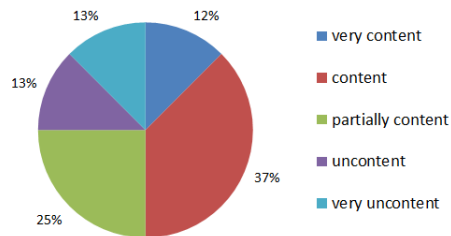


Figure 6.31.: MG: Satisfaction with the current TagTrees structure

MG: For what kind of files is tagstore especially suitable?

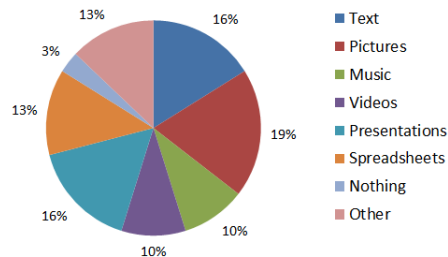


Figure 6.32.: MG: For what kind of files is tagstore especially suitable?

6.3.7. Suitability

In the final questionnaire users were asked for what kind of files they regarded tagstore as especially suitable. Figure 6.32 shows the answers and Table 6.2 the reasons, why users thought tagstore to be suitable for them. Option *other* from Figure 6.32 included the following file types and in parentheses the reasons, why users thought tagstore is suitable for them:

- setup files (they fit into multiple categories)
- everything that can be tagged (I am able to find every information for one topic, not only one item, which I remembered)

6. Results

File type	Reasons
Text	Reason ₁ ; Reason ₂
Pictures	Reason ₁ ; Reason ₂ ; fast re-finding; Reason ₃
Music	Reason ₁ ; Reason ₂ ; fast re-finding
Videos	Reason ₁ ; Reason ₂ ; fast re-finding
Presentations	Reason ₁ ; Reason ₂ ; fast re-finding
Spreadsheets	Reason ₁ ; Reason ₂

Table 6.2.: Reasons, why tagstore is especially suitable for a specific file type. Reason₁ = I am able to find every information for one topic, not only one item, which I remembered. Reason₂ = tagstore can be used for many kinds of files, but in my opinion it is not a good solution. Reason₃ = they fit into multiple categories

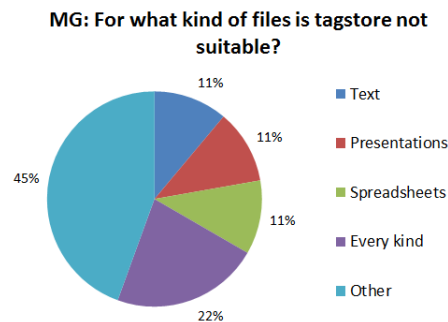


Figure 6.33.: MG: For what kind of files is tagstore not suitable?

- downloads (fast re-refinding)
- items, which do not fit into the established folder structure (no need for creation of folders, re-finding is intuitive)

When asked, for what kind of files tagstore is not suitable the following answers and reasons were given, see Figure 6.33 and Table 6.3. Option *other* from Figure 6.33 included the following file types and in parentheses the reasons, why users thought tagstore is not suitable for them:

- PDF files (file has to be stored explicitly)
- Downloads (most of the time used only once)

6.3. Results of the Final Questionnaire

File type	Reasons
Text	too cumbersome
Presentations	are always client specific, no other criterion
Spreadsheets	too cumbersome
Every kind	in my opinion it is not a good solution

Table 6.3.: Reasons, why tagstore is not suitable for a specific file type

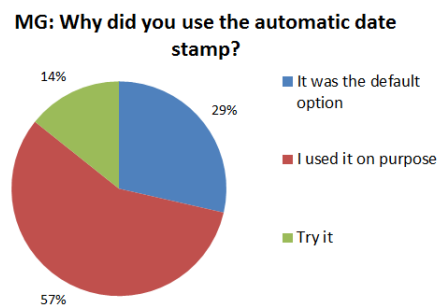


Figure 6.34.: MG: Why did you use the automatic date stamp when filing?

- unzipped source code (would be too much tagging effort)
- Shape files, Latex files (too many temporary files are created, which trigger tagstore unnecessarily)

6.3.8. Date Stamp

During the whole test 88 % of MG members used the automatic date stamp when filing for the following reasons, see Figure 6.34. As a reason not to use this feature when filing the following answer was given “I do not see any benefit in it” by the 12 %, who did not use the automatic date stamp. When re-finding with tagstore 28 % found the date stamp partially useful and sometimes used these navigational folders, 43 % never used these navigational folders, 29 % did not find it useful and nobody rated this feature as very useful when re-finding with tagstore.

6. Results

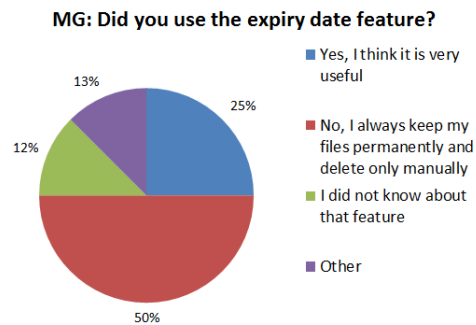


Figure 6.35.: MG: Did you use the expiry date feature?

6.3.9. Expiry Date

The expiry date feature was used by only 25 % of MG users and 12 % did not even know about that feature. For detailed percentages of the answers see Figure 6.35. Answer *other* included the statement, that the feature had not been used yet, but might prove useful in the future. Those 12 %, who did not know about the expiry date feature, might have used it, but only for unimportant items. Even though one would assume, that there is a great need for automatic file management, regarding all the unused files people keep on their computers, people do not seem to trust an automatic process to deal with their files. It seems, that users, at least the MG users, value their items very much and are reluctant to trust a program with the process of deleting items, although tagstore only moves items and does not really delete them. This effect of highly prized file collections was already mentioned in Boardman and Sasse (2004) and may be a general phenomenon.

6.3.10. Tag Completion

The tag completion feature was used by 74 % of MG members, 13 % preferred the tag cloud and 13 % found it rather disturbing, see Figure 6.36.

6.3. Results of the Final Questionnaire

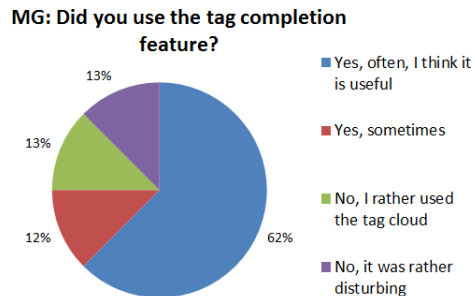


Figure 6.36.: MG: Did you use the tag completion feature?

6.3.11. Assistant and Help

The tagstore Assistant and Help did not elate test persons. Some users found the help pop-ups annoying and often closed them without reading them. Users would have rather preferred a more unintrusive approach, where they can open the help, when they need it. Nevertheless, some did benefit from the offered help.

37% read the information contained in the assistant carefully and 63% at least skimmed through it. Nobody did not read it at all.

37% thought, that the help information helped them very much, but 50% only closed it, when it opened automatically. 13% said, that they did not like the help pop-ups.

6.3.12. MG: Future usage of tagstore

Users were asked, if they will continue using tagstore after the test. 75% answered yes and 25% answered no. The following reasons were given for the answer no: not helpful, does not work properly, does not start automatically anymore, no additional value.

The 75%, who will continue using tagstore, will be using it for the following kind of files: 50% downloads, 30% file collections, 20% project files.

6. Results

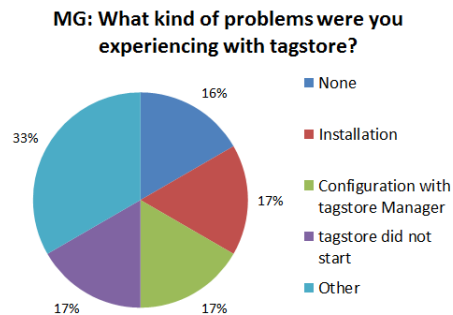


Figure 6.37.: MG: What kind of problems were you experiencing with tagstore?

75 % of MG users would recommend tagstore and 25 % would not. Reasons for answer yes included: helped me adapting my folder structure, helps organizing the chaos, helpful when re-finding items, less overhead than desktop search, helpful for chaotic users. Reasons for answer no included: too cumbersome, too much additional work, not self-explanatory, no good design, no benefit.

6.3.13. Problems

After the final week users were asked, which problems they experienced with tagstore. Figure 6.37 shows the different categories of problems and their percentage. Option *other* included: tagstore Manager sometimes did not open, I replaced my PC and had to install twice, problems with exe files, tagstore did not run automatically.

6.3.14. Suggestions for Improvement

To obtain some information about which improvements might raise user acceptance of tagstore, test persons were asked for some suggestions of improvement. The following answers were given:

- better design

6.4. Comparison of the Questionnaires Over Time

- fewer pop-ups
- special characters in file names should not pose a problem
- bug fixing
- additional GUI (Graphical User Interface) for re-finding items

Test users were asked for suggestions for improvement regarding the test methodology as well and these were the answers:

- different questions every week would be better
- more and more detailed instructions (for example a task list to be executed)
- test with multiple operating systems
- extended test time
- less questions

6.4. Comparison of the Questionnaires Over Time

This part of the evaluation was done for MG only, because only for this user group, data for all three weeks were available. The usage of desktop search engines was not evaluated because it was only used once in week one by one test person and then never again.

6.4.1. Filing with tagstore

Figure 6.38 shows how many files were approximately filed each week. In week two filing usage was highest and in week three lowest, according to the figure. In week one the rating for the helpfulness of tagstore when filing items was lowest (see Figure 6.39). Maybe this is because of the initial problems, which some users experienced in the beginning and the unfamiliarity of the interface.

6. Results

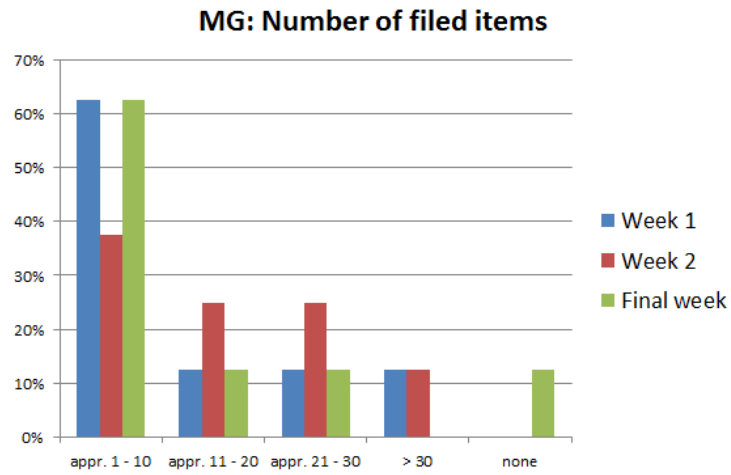


Figure 6.38.: MG: Number of filed items

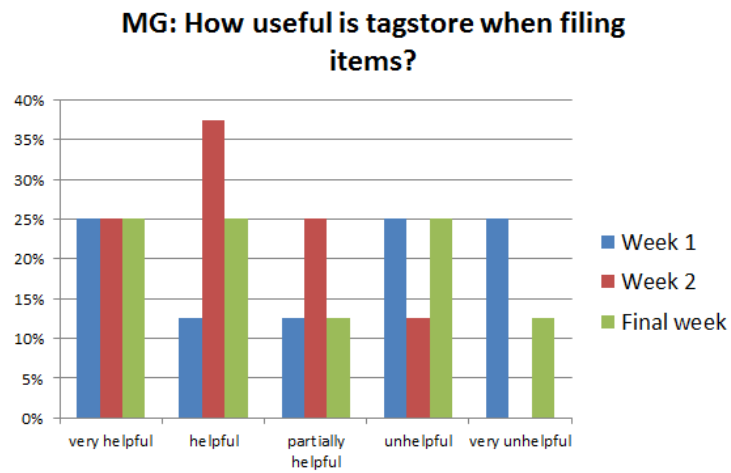


Figure 6.39.: MG: How useful is tagstore when filing items?

6.4. Comparison of the Questionnaires Over Time

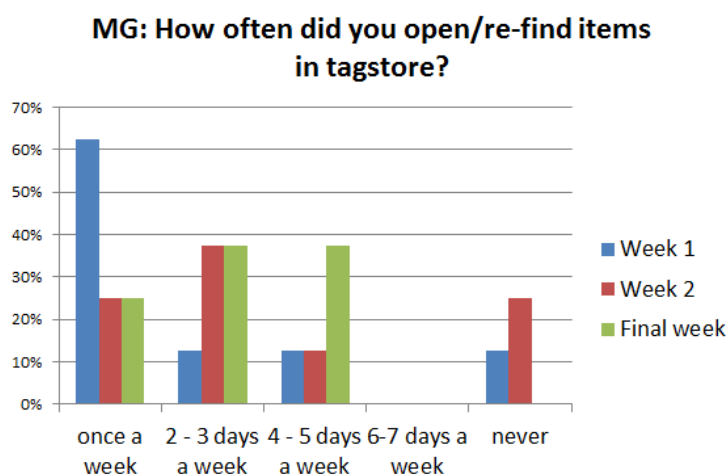


Figure 6.40.: MG: How often did you open/re-find items in tagstore?

6.4.2. Re-finding with tagstore

Figure 6.40 shows the usage of the tagstore structure for re-finding items over the weeks. Re-finding was most used in week three and least in week one. No members of MG used tagstore on a daily basis for re-finding. On the days, when tagstore was used, most test persons used it only sporadically. Approximately a quarter of MG members used it various times a day. According to Figure 6.41 the usage of the central storage folder for re-finding increased over the weeks. This might be, due to the restrictions of file operations (it is not possible to copy, delete, rename items) in the TagTrees structure. As can be seen in Figure 6.42 the majority of MG test users (minimum 50%) chose associative navigation at least sometimes for re-finding items. Users seem to combine advantages of both methods, using either a remembered path or associative navigation. Ratings for the helpfulness of tagstore for re-finding items were best after the second week (see Figure 6.43).

6. Results

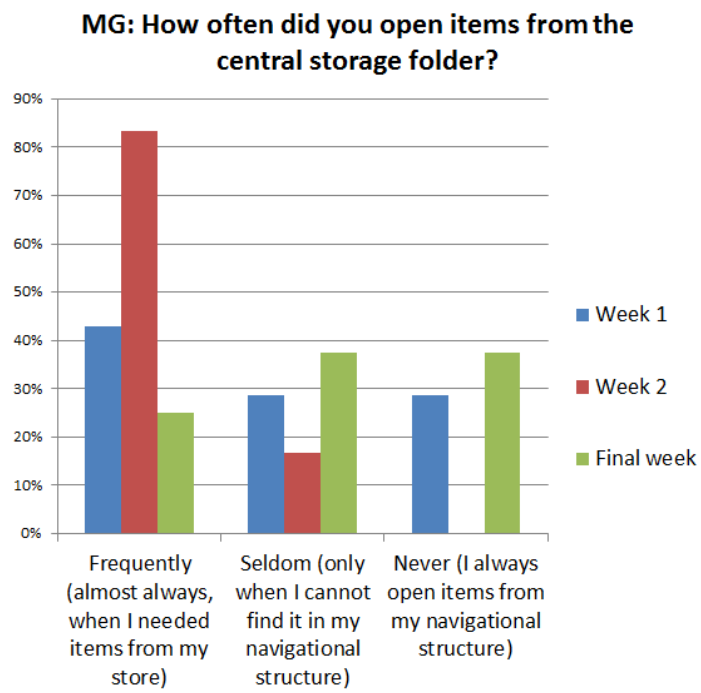


Figure 6.41.: MG: Users who used tagstore for re-finding at least once: How often did you open items from the central storage?

6.4. Comparison of the Questionnaires Over Time

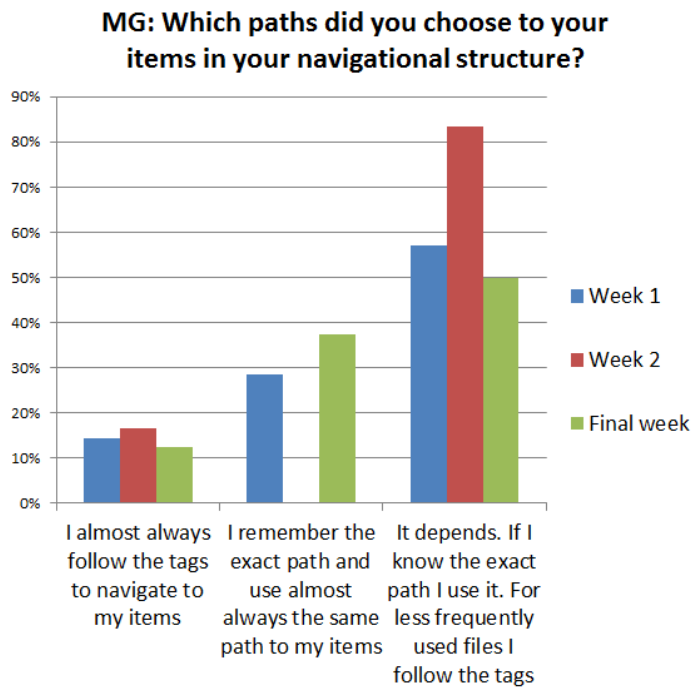


Figure 6.42.: MG: Users who used tagstore for re-finding at least once: Which paths did you choose to your items in your navigational structure?

6. Results

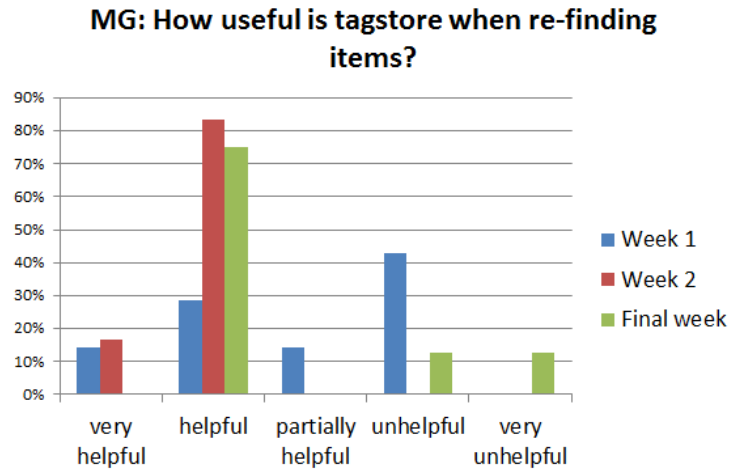


Figure 6.43.: MG: Users who used tagstore for re-finding at least once: How useful is tagstore when re-finding items?

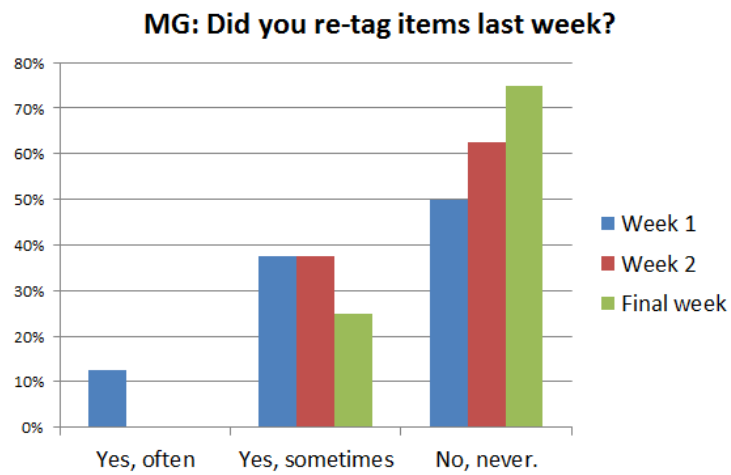


Figure 6.44.: MG: Did you re-tag items?

6.4. Comparison of the Questionnaires Over Time

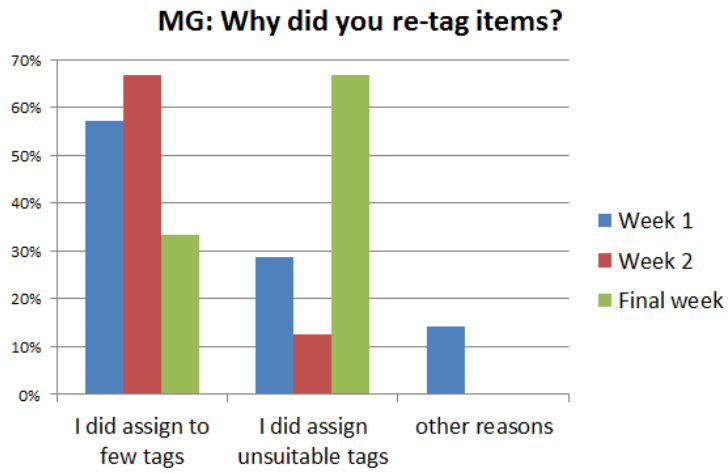


Figure 6.45.: MG: Why did you re-tag items?

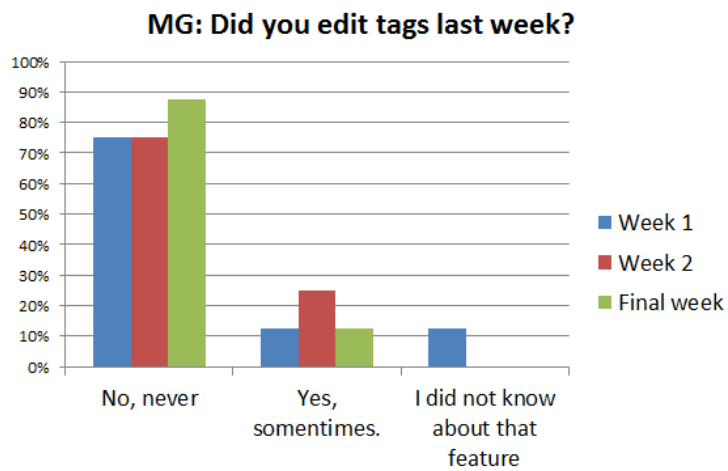


Figure 6.46.: MG: Did you edit tags?

6. Results

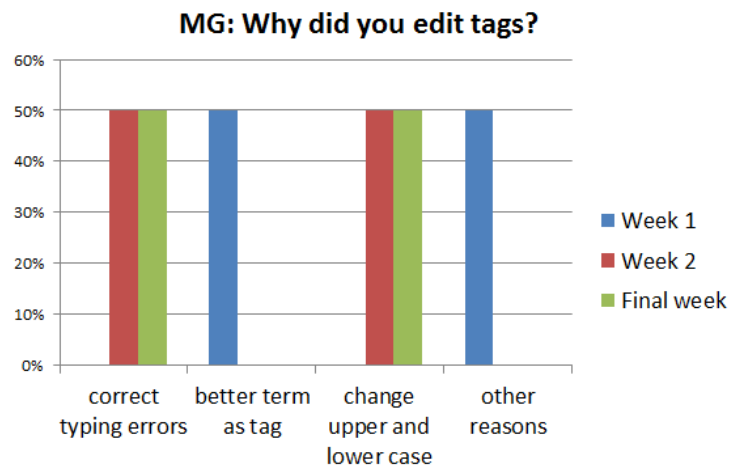


Figure 6.47.: MG: Why did you edit tags?

6.4.3. Re-tagging and Editing Tags

Figure 6.44 shows if the re-tagging feature was used. Re-tagging was most used in week one and least in week three. Maybe this is because users developed their tag vocabulary in the beginning and had it more or less finished at the end of the test. Figure 6.45 shows the reasons for re-tagging. In week one the edit tags feature was not known to all users, but that changed in week two. Nevertheless this feature was hardly ever used. Reasons for editing tags are shown in Figure 6.47.

6.4.4. Tag Cloud

The rating of the tag cloud over the time is shown in Figure 6.48. The rating did not vary much over time. Rating *insufficient* was never selected. Rating *very good* was never selected either, so there is still some room for improvement.

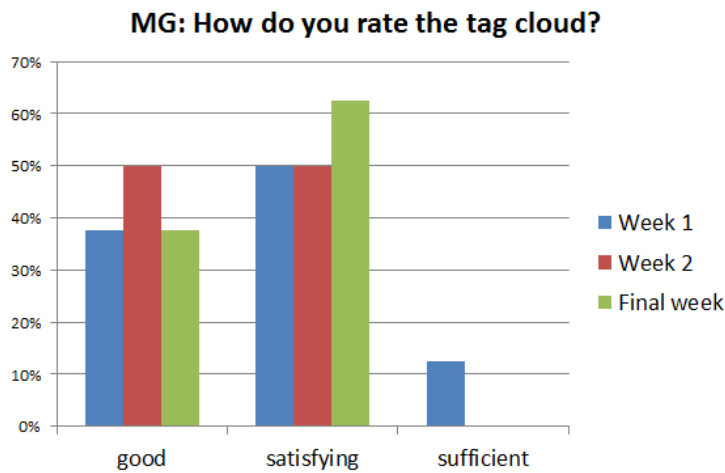


Figure 6.48.: MG: How do you rate the tag cloud?

6.4.5. Additional Value of tagstore

Ratings for the additional value of tagstore improved over time, but after the third week some users still could not see any additional value for them. One reason that was given by one of these users was, that the user's personal folder structure was very well structured and very familiar, so there was no need for an additional structure. After three weeks most users had decided on whether or not they would continue tagging their items, as can be seen in Figure 6.50. After week three the majority of MG members was convinced, that tagstore was worth the additional tagging effort.

6.5. Test Diary

In this section diary entries from all 18 test users and all three test weeks are presented. No differentiation was made between group MG and GA, as it would not have changed the results. Diary entries were evaluated and categorized in four different categories: installation issues, software issues, usability issues and recommendations for improvements. Entries that did

6. Results

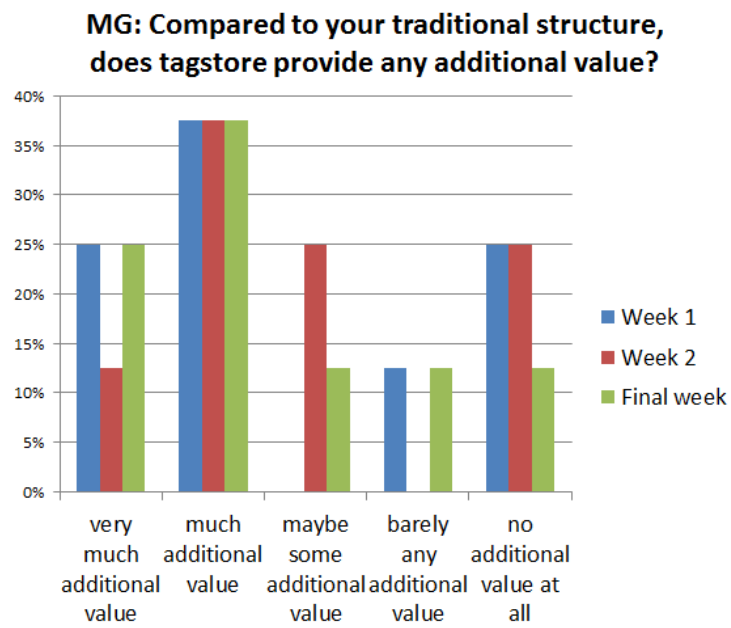


Figure 6.49.: MG: Compared to your traditional structure, does tagstore provide any additional value?

6.5. Test Diary

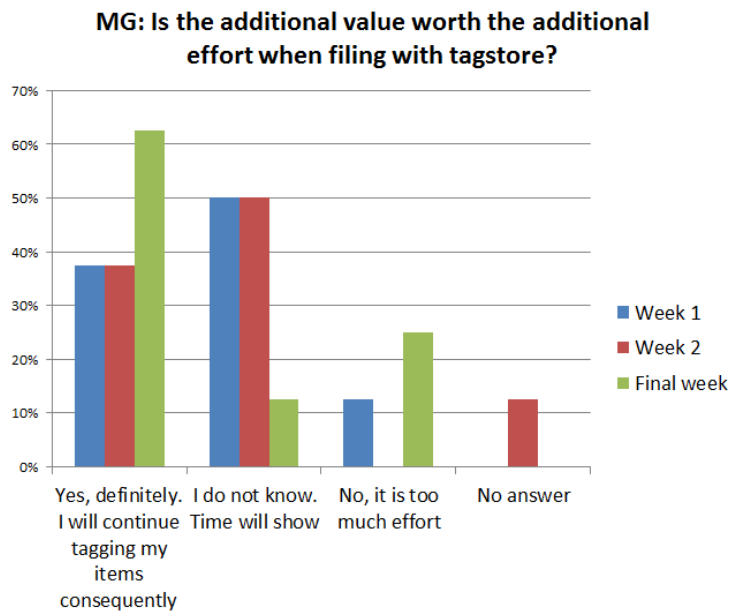


Figure 6.50.: MG: Is the additional value worth the additional effort when filing with tagstore?

6. Results

not fit into one of the categories are summarized under miscellaneous. Each finding is listed under the corresponding section. The reporting users are listed in parentheses. TP means test person and the number gives the unique number of the test person.

6.5.1. Installation Issues

The following issues were reported by users during installation of tagstore:

- installation of tagstore had to be in the root directory (TP02, TP19)
- tagstore had to be installed twice before it worked (TP20)

6.5.2. Software Issues

The following tagstore issues were reported by users:

- tagstore cannot handle folders, which are named beginning with an underline (TP01)
- an exe file could not be tagged or re-tagged (TP14)
- files, which do not exist in the central storage folder any longer are still shown in the tagging window or re-tagging list of tagstore Manager (TP03, TP15)
- detection problems with pdf files containing the letter ß. These files are not detected, when filed. Only when other files are filed, those files appear in the tagging list as well. (TP04)
- when printing a file to pdf, tagstore opens not before the file is stored (TP16)
- problems with CAD interaction (TP16)
- Solid Edge cannot handle the file links (TP16)
- Autostart of tagstore did not work (TP15)
- tagstore does not work (anymore) (TP13, TP15)

The following software problem was reported by users:

- I could not finish a questionnaire because of a software bug of the limesurvey software (TP09, TP19)

6.5.3. Usability Issues

The following tagstore usability issues were reported by users.

- tagstore and tagstore Help are opened in the background (TP03, TP18)
- when the tagging windows opens no item is selected, which is especially troublesome for re-tagging. Users assume the item to be automatically selected, because they have chosen it already in the tagstore Manager. (TP10)
- re-tagging does not work all the time (TP10, TP14, TP15)
- tagstore menu entry is not marked as new in the program menu (TP03)
- tagstore Manager contains too much information, many test users do not read it (TP03, TP16)
- due to information overload (see previous finding), it is not obvious, where items have to be filed or where those items can be re-found (TP03, TP15)
- too many windows pop up, users are overwhelmed (TP03)
- tagstore Manager button *Save* is misleading, because it closes the Manager (TP02, TP03)
- changes in the store configuration, for example for date stamps, require a restart of tagstore, which is not obvious to users (TP02, TP03)
- some users describe the tagstore Manager help as presumptuous (TP03)
- when tagging more than one file, old tags remain in the tag-line and are marked like they can be overwritten, but new tags are added at the end of the line (TP07)
- tagging window opens when automatic backup is executed (TP13)
- it is not transparent to users if tagstore is running / working (TP13, TP15, TP19)
- restart of tagstore requires a system reboot, as users do not know about the *Restart tagstore* program menu entry (observation of author)
- the tagstore entry in Autostart is not created on English versions of Windows (TP19)

6. Results

- when re-finding items through TagTrees, it is not possible to copy, extract (*.zip files) or email items, because only shortcuts/links are saved there. For copying items the central storage folder has to be used. A major advantage of tagstore is lost. (TP06, TP14)
- tagstore does not recognize wmv files (TP01)
- tagstore recognizes Google sketch up models only after restart of tagstore (TP01)
- temporary created files (for example lock files) trigger tagstore as well (TP01, TP06)
- Autostart of tagstore does not work (TP06, TP15)

6.5.4. Recommendations for Improvement

The following recommendations for future improvements of tagstore were made:

- security check, if folder for a new store is empty and prompt, if it is not (TP02)
- add a new button to tagstore Manager, so there are two buttons, one *Save and close* and one *Close without saving* (TP02)
- integration into Windows Explorer (TP09)
- tagging via context menu (right mouse button), adding new tags as optional function (TP09)
- import function for folders, folder names should be imported as tags (TP04)
- an integrated search GUI for tagstore would be helpful (TP15)
- highlighting most used tags in TagTrees structure (TP06)
- add number of contained items to each folder in TagTrees (TP06)

6.5.5. Miscellaneous

- when filing a lot of files, there will be too many folders, TagTrees become confusing (TP06, TP16)

6.6. Results from the store files

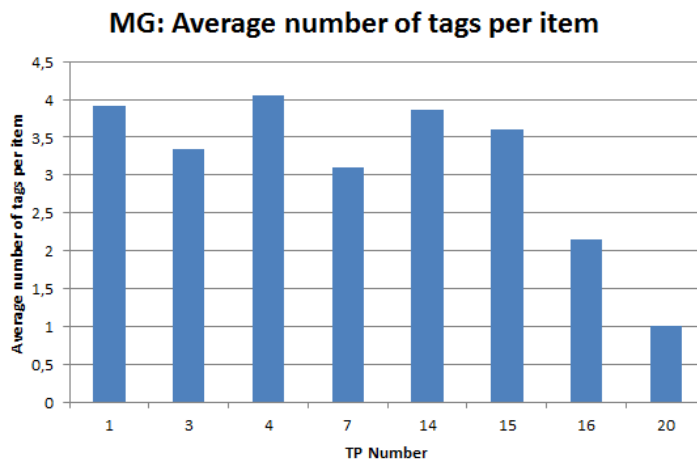


Figure 6.51.: MG: Average number of tags per item

- advantage of tagstore mainly for files that do not fit into well designed folder hierarchies, for other files conventional folder hierarchies provide a better overview (TP16, TP20)
- the central storage folder is a huge container for all sorts of files, that may become confusing (TP06)

6.6. Results from the store files

The tagstore store files provide objective data for filing items with tagstore. Those files were collected and analyzed. This section presents the findings of this analysis. This analysis was done for the main group (MG) only. Not every member of GA did return the log files and many of them contained not enough information to be of any value for a statistical evaluation.

6. Results

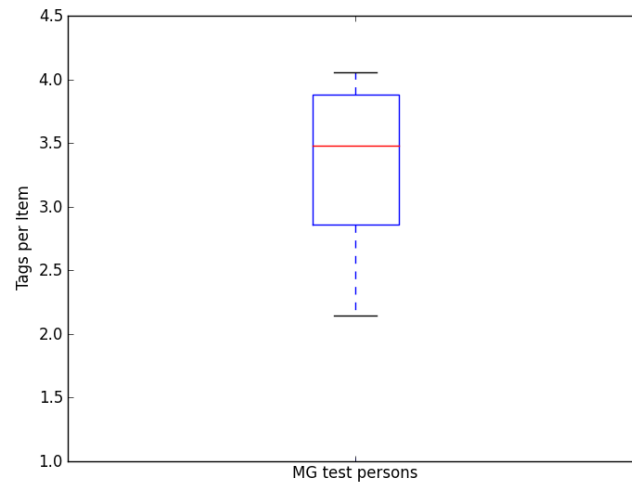


Figure 6.52.: MG: Average number of tags per item

6.6.1. Tags per Item per Test User

The tag/item ratio or tag/resource ratio, as it was called in Körner et al. (2010), was identified by Körner et al. (2010) to be the most accurate automatic measure for distinguishing categorizers (users who categorize items using tags) and describers (users who describe items using tags). Therefore the tag/item ratio of users was analyzed. For a more detailed description of describer and categorizer see Section 1.3.

The analysis showed, that test users assigned on average 3.13 tags to an item, with one tag being the minimum number and five tags being the maximum number of tags assigned to one item. The median was 3.48 and the standard deviation was 0.99. Figure 6.51 and the box-and-whisker diagram in Figure 6.52 show the tags per item. According to this evaluation test persons 16 and 20 seemed to be categorizers. The other test persons seemed to be describers.

6.6. Results from the store files

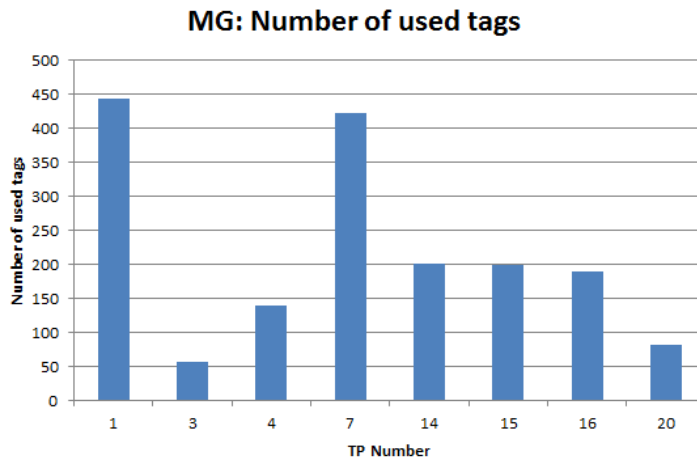


Figure 6.53.: MG: Number of tags

6.6.2. Total Amount of Tags per Test User

The total amount of tags was compared for all test users. TP01 and TP07 used by far the most tags and filed the most items as well, see Figure 6.53 and Figure 6.54. There is a huge interval of used tags, the maximum number of used tags was 442 and the minimum number was 57.

6.6.3. Total Amount of Items per Test User

The total amount of items filed by each test user was analyzed as well. This analysis should provide information about the use of tagstore. Figure 6.54 shows the total amount of items filed by each test user. Six test persons filed more than 40 files, and two less. Two test users even filed more than 100 items with tagstore. Again, there is a huge interval between minimum and maximum. The highest number of filed items was 137 and the lowest was 17.

6. Results

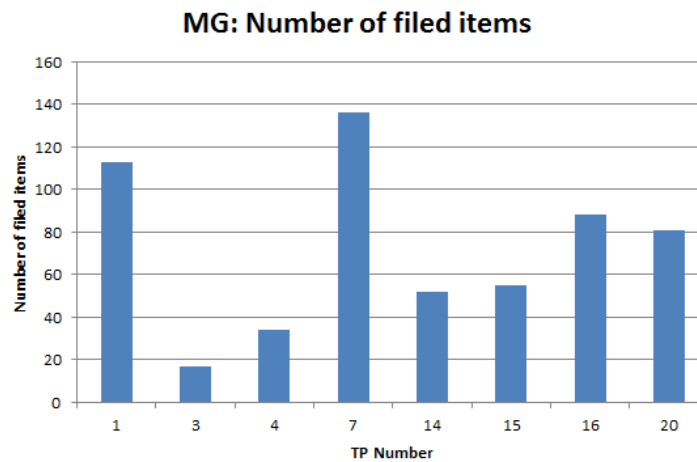


Figure 6.54.: MG: Number of filed items

6.6.4. Tag Length per Test User

Figure 6.55 shows the average tag length for each user. The average tag length of all test users was 7.7 characters per tag name. The median was 7 and the standard deviation was 3.1, see the box-and-whisker diagram in Figure 6.56. The minimum tag length was one character and the maximum was 24 characters.

This analysis showed, that some users generally prefer shorter tag lengths and others prefer longer tag lengths. Users 4 and 15 usually used tags with an average of at least eight characters. TP14 used the shortest tags with on average less than six characters.

6.6.5. Tag Variety per Test User

For this evaluation the unique tags and their use were analyzed for each user. The purpose of this analysis was to illustrate the vocabulary problem (for more information on the vocabulary problem see Section 1.3). Do used tags vary much or are they quite similar? Similar tags, that could have been

6.6. Results from the store files

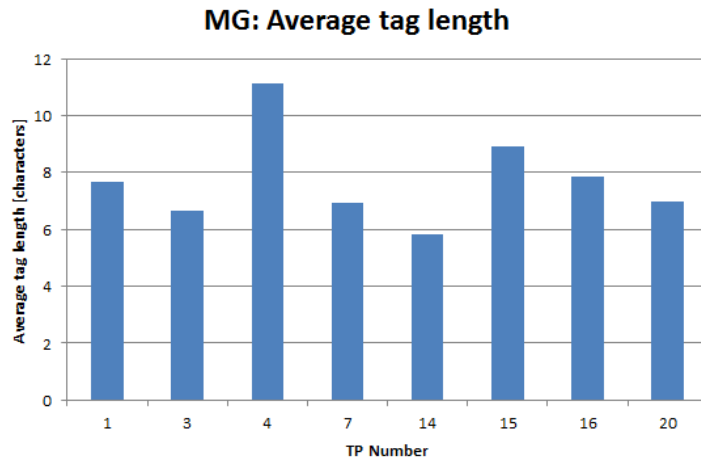


Figure 6.55.: MG: Average length of tags

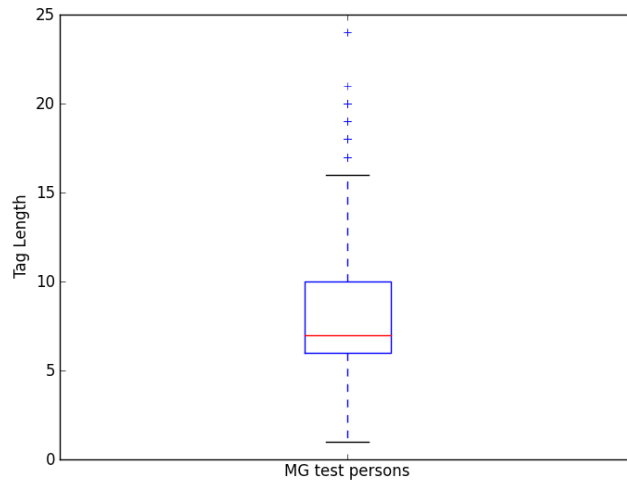


Figure 6.56.: MG: Average length of tags

6. Results

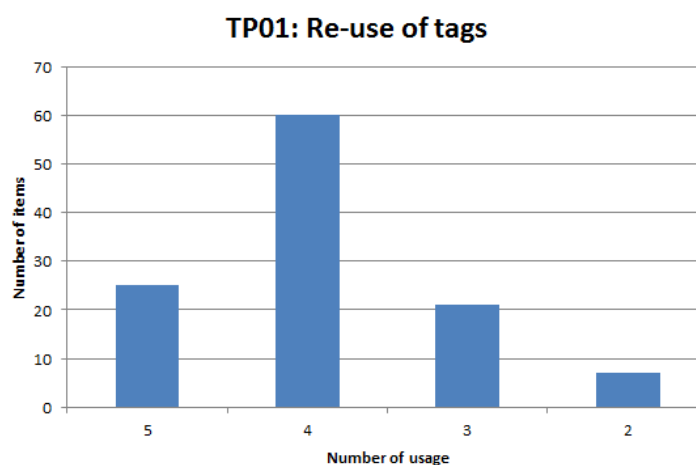


Figure 6.57.: MG: Tag re-use for TP01

merged into one, were *settings* and the German word for it *Einstellungen*. Other pairs were *manual*, *user guide* and the German word *Handbuch*, *program* and *programs*, *system-fussabdruck* and *system-fußabdruck*, *tutorial* and *howto*.

The vocabulary between test persons differed very much. Only tags like the automatic date stamp and general categories, for example *picture*, were used by more than one user. Categorizing tags like *video*, *picture*, *food* were used more often than others. Many tags, which were used only once, were tags describing the content of the specific file.

6.6.6. Tag Re-use per Test User

The purpose of this analysis was to illustrate the vocabulary problem as well. The re-use of tags was analyzed for every test user. The Figures 6.57, 6.58, 6.59, 6.60, 6.61, 6.62, 6.63 and 6.64 show how many tags have been used once, twice, thrice or more often by each user. Figure 6.65 shows for how many items tags were used once, twice or more often for all MG users.

6.6. Results from the store files

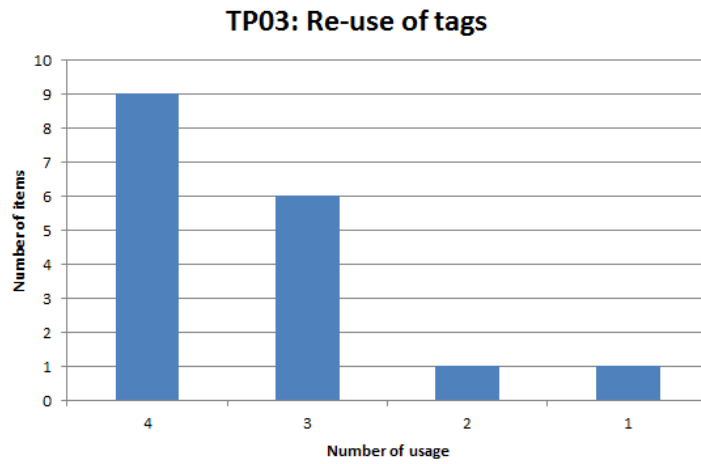


Figure 6.58.: MG: Tag re-use for TP03

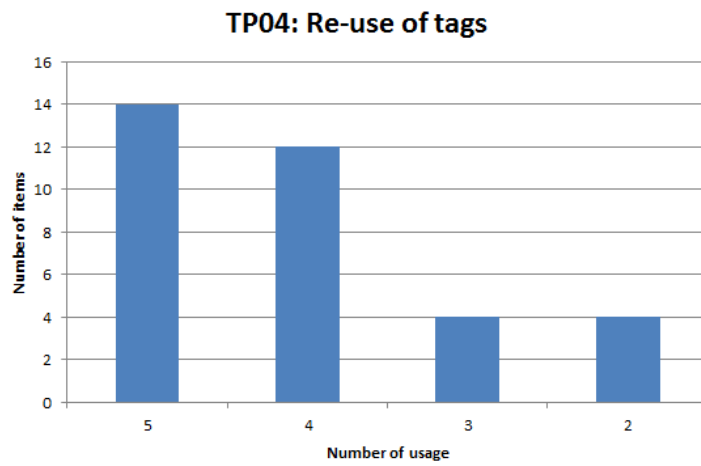


Figure 6.59.: MG: Tag re-use for TP04

6. Results

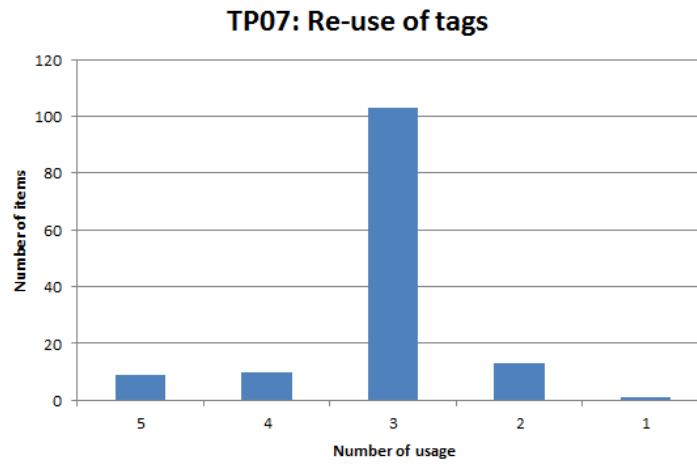


Figure 6.60.: MG: Tag re-use for TP07

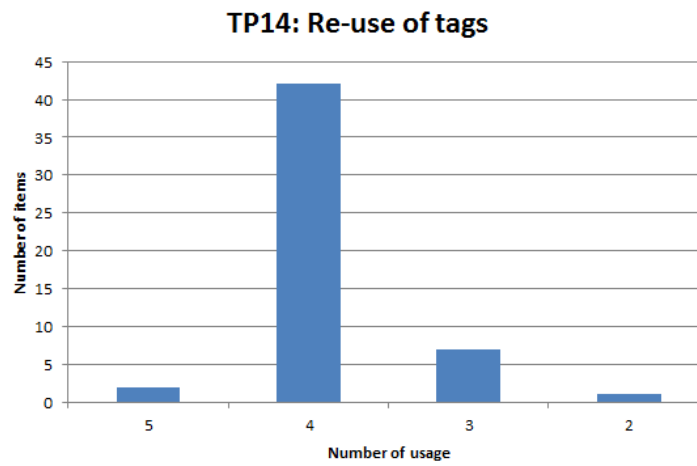


Figure 6.61.: MG: Tag re-use for TP14

6.6. Results from the store files

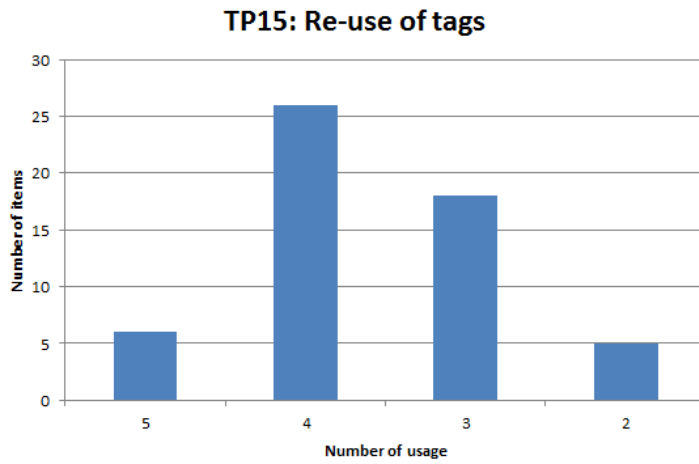


Figure 6.62.: MG: Tag re-use for TP15

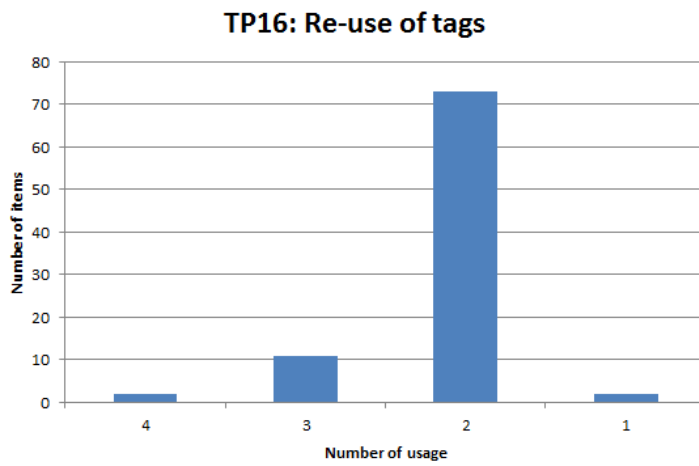


Figure 6.63.: MG: Tag re-use for TP16

6. Results

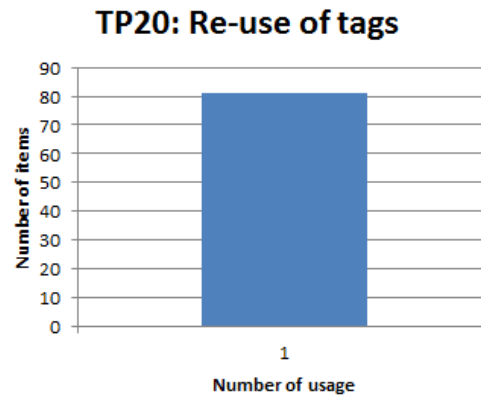


Figure 6.64.: MG: Tag re-use for TP20

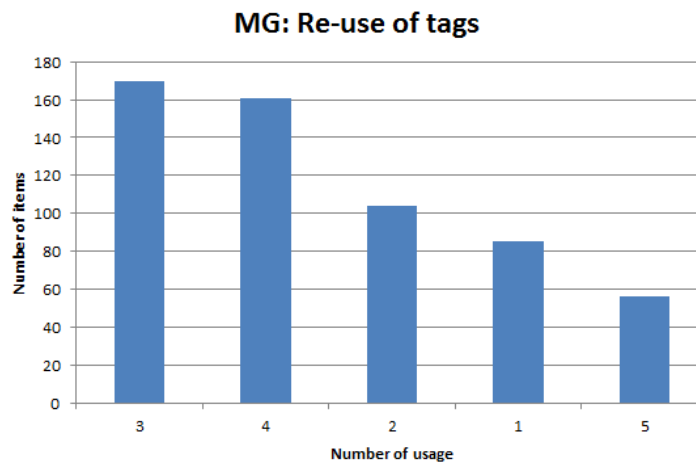


Figure 6.65.: MG: Tag re-use

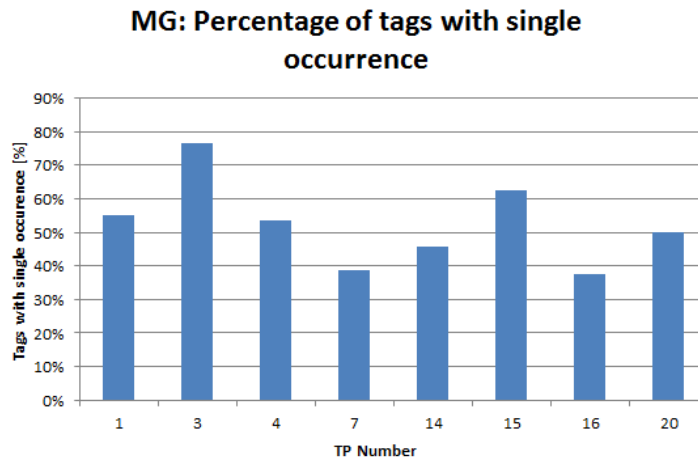


Figure 6.66.: MG: Percentage of tags with single occurrence

The re-use of tags should be higher for categorizing users than for describing users, but results from Section 6.6.1 contradict this. Users, who seemed to be categorizers in this section (TP16, TP20) now seem to be describers. Their tag re-use is lower compared to the other test persons. In general it can be said, that most items were tagged with tags, which were used either three or four times.

6.6.7. Tags Used Only Once per Test User

Figure 6.66 illustrates how many tags were only used once by each test user. It illustrates another part of the vocabulary problem. Users tend to assign too many different words with the same meaning. The number of not re-used tags should be higher for describers than for categorizers. According to this categorization TP07, TP14 and TP16 may be categorizers, they used less than half of their tags only once. All other test users had at least 50% of once used tags. This result partly proved the results of Section 6.6.1, where TP16 was also identified as a potential categorizer, and partly contradicted it, because TP07 and TP14 were potential describers in this section. These

6. Results

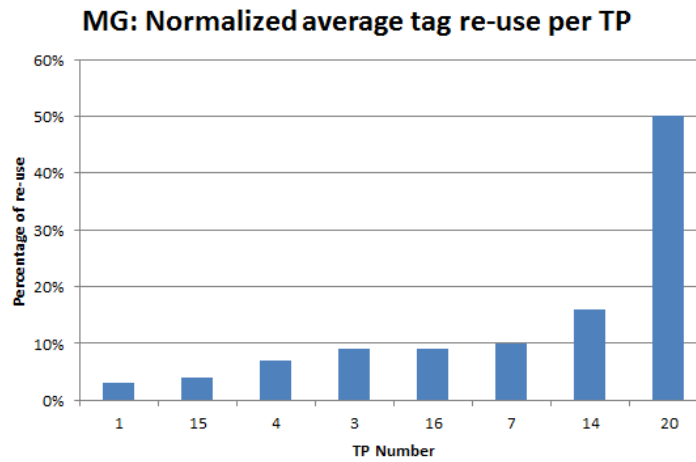


Figure 6.67.: MG: Normalized average tag re-use

contradicting results show, that it is not easy to categorize user behavior by means of a few figures.

6.6.8. Normalized Average Tag Re-use per Test User

For this analysis the average tag re-usage was normalized to the items tagged by each user. Then the values were compared in Figure 6.67. Figure 6.68 shows the same data in a box-and-whisker diagram. TP20 had by far the highest rate of tag re-use (50 %), TP14 had a rate between 10 % and 20 %. All other users had a rate below 10 %, which means, they had many tags, which they used only once.

The normalization process was executed as follows: x = number of use of tag₁ for a TP, y = number of use of tag₂ for a TP, etc. The average use per TP is the mean value of x , y , etc. This mean value for each TP was then divided by the number of items each TP had in the store.

$$\text{tag use}_{1\dots n}(\text{TP}) = \text{number of use of tag}_{1\dots n}(\text{TP}) \quad (6.1)$$

$$\text{Normalized average tag re-use} = \frac{\text{Mean value}(\text{tag use}_{1\dots n})}{\text{items}(\text{TP})} \quad (6.2)$$

6.7. Comparison with laboratory tests

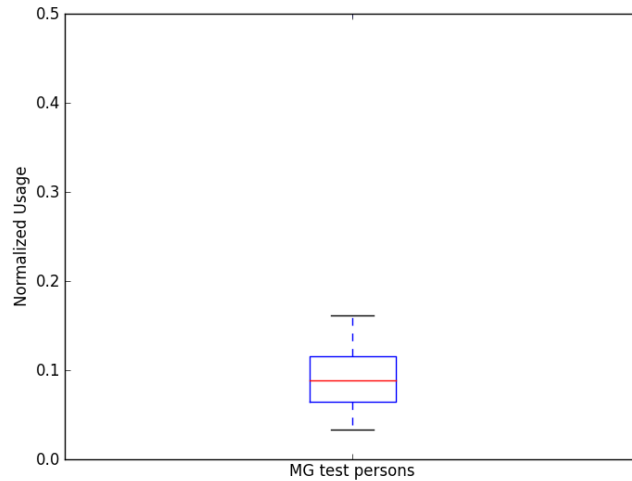


Figure 6.68.: MG: Normalized average tag re-use

6.7. Comparison with laboratory tests

Before this field test two laboratory tests were conducted with tagstore. Most parts of these laboratory tests (De Vocht et al., 2012; Harzl et al., 2012) were not comparable, but some were. These parts will be evaluated in this section.

6.7.1. Log files

Evaluation of the log files showed the following values for characters per tag name and tags per file, see Table 6.4. Characters per tag do not vary much between the tests, but the number of tags is higher for the field test than for the laboratory test. Possible reasons may be, that users tag their own items in more detail, or that test users wanted to finish the laboratory tests fast.

6. Results

Test	Characters per tag	Tags per file
De Vocht et al. (2012)	7.6	2.7
Harzl et al. (2012)	7.5	2.2
This field test	7.7	3.13

Table 6.4.: Comparison of log file results for different tagstore tests

6.7.2. Feedback

User feedback was not directly comparable, because the questions and/or possible answers were different. Nevertheless, some similar questions were selected for comparison.

In De Vocht et al. (2012) the average mark for filing with tagstore was 4.61 on a scale of six (very good) to zero (very bad). The average mark for re-finding on the same scale was 5.06. The average mark for “Would you use tagstore on your own computer?” was 4.44 on a scale of six (yes, definitely) to zero (no, never).

Harzl et al. (2012) showed a preference for tagstore as well. After the filing task 88 % of test users would have used tagstore on their own computer and after the re-finding task (three weeks later) 63 % would have used tagstore on their own computer.

After this field test 75 % of MG members answered, that they will continue using tagstore, which is between the values of Harzl et al. (2012) after filing and after re-finding. The average mark for filing with tagstore was 2.7 on a scale from one (very helpful) to five (very unhelpful) and for re-finding it was 2.4 on the same scale.

For further details on the two laboratory tests see De Vocht et al. (2012) and Harzl et al. (2012).

6.8. Summary

In the course of this field tests many more software bugs and usability issues were found by test users, than during the laboratory tests. Maybe because, test persons had more time and freedom of use with tagstore. These problems may have caused a little bit less positive ratings for tagstore, but provided very important insight on room for future improvements. It became obvious that the installation process has to be improved and tagstore has to become more self-explaining, because users rarely read instructions carefully and often did not watch instruction videos. A more self-explaining approach would have avoided many problems experienced by test persons. Better integration in future operating systems seemed to be a big issue for user acceptance as well. Users expected additional functionality to be integrated seamlessly into their operating system and to support all of their processes. Another important issue for improvement was the use of file operations apart from opening an item. Users expected to be able to copy, delete, rename or email an item in TagTrees, but that was only possible in the central storage folder.

Even though field test users experienced way more problems (for example installation problems) with tagstore than laboratory users, tagstore was able to convince them, that better ways of storing and retrieving items, than the usual folder structure, exist. Over the three weeks on average 67 % of MG users believed tagstore to be partially to very helpful when filing. Re-finding was rated even better. Over the three weeks an average of 77 % of MG members rated tagstore as partially helpful to very helpful when re-finding items. 72 % of MG test persons see maybe some to very much additional value in TagTrees compared to their usual folder structure and the percentage of MG users, who thought, that the additional tagging work is worth the effort, increased from 38 % after the first week to 63 % after the final week. Three quarters of MG members will even continue using tagstore. This is impressive, given the fact, that tagstore is a research software, including various software problems and usability issues, and not a commercial product. Those software problems were one reason why 25 % will not continue using tagstore. Another reason was, that these users saw no additional value in tagstore. Their current file structure was already so adapted to their needs, that they had no use for an additional method.

7. Lessons learned

Lessons learned for the future improvement of tagstore were already described in the previous chapter, therefore, this chapter will focus on the lessons learned about field testing.

7.1. Recruiting

You can't get enough.

Tests involving test users are challenging in many ways. First of all, one has to have a huge pool of possible test users, because only a little fraction will spend time and energy on a long-term test. When special criteria have to be fulfilled (for example a specific operating system) the pool has to be even larger, because not all possible user will match those criteria. The amount of actual test users should always be considerably larger than the minimum amount necessary for the study. Some users may quit the test at any time, even when they have already invested a lot of time. This test serves as a good example, 28 people filled in the background questionnaire, 22 test users started the test, but only 18 finished it. One reason may be, that users had to do much additional work, apart from using the software. They had to fill in many questionnaires and had to keep a test diary as well. Another reason may be lack of time.

7.2. Communication

Keep it small and simple.

7. Lessons learned

Another challenge is communication with test users. During the field test it became obvious, that written information cannot completely replace direct oral communication. There is no way of making sure everyone understands the given information, the way it is intended.

Although all users were provided with the same carefully prepared written information and introduction videos, some had problems installing and using tagstore and others had not. Through direct email communication it became clear, that various problems users experienced with the installation or usage of tagstore, resulted from not reading or not understanding the given information. One reason may be, that people did not read all the given information due to information overload. This was not considered enough, when developing the tagstore assistant, help and other test material. Important information was overlooked by test users and led to frustrating experiences. Another reason might be, that the given information was not clearly enough phrased.

Another interesting observation was, that many users were reluctant to ask for help. Although help was offered many times, hardly anyone took the opportunity to ask direct questions. Test users rather entered their questions in the weekly questionnaire, than contacting the author via email or Skype.

For future tests the mantra for creating test material should be “Keep it small and simple” to avoid information overload. Additionally an initial personal meeting should be arranged. This would reduce installation and usage problems, due to not utilized information. A personal meeting also establishes a personal relationship, which can help preventing people from quitting the test (see Section 7.4). Additionally, a personal relationship could help reducing the inhibition threshold for users to directly contact the testing team.

7.3. Methodology

Take your time.

In retrospect the three week testing period was too short. It took users too much time to install tagstore and to answer the weekly questionnaires. A lot of reminders were necessary to get all users to fill in the forms. Future tests should aim at an even longer period of time, with more time between questionnaires, and involve a larger group of test users.

7.4. Reliability

Take people you know or people you pay.

Reliability of test users was a huge issue for this thesis, because many users quit the test shortly before the test start and some even quit the test mid-time. Of originally 28 users, who agreed to participate in this test only 22 actually started the test and 4 users left the test mid-time. This leaves the 18 test users, who participated in the test. However, 10 did only some parts of the test and 8 participated in all parts of the test. Only for these 8 users all evaluations could be conducted, because only for these users all data were available.

Possible solutions for a lack of reliability can be, providing the users with some sort of incentive or hiring test users, who are personally connected to the test team. However, both solutions have some drawbacks. Payment can attract people, who are not interested in the topic of a study, and provide useless or biased information. Additionally one has to raise the money for the payment. Hiring friends and family as test users, comes with the drawback of possible courtesy feedback. People may give better feedback, because they do not want to disappoint friends or family members.

7.5. Summary

Based on the experiences described in the previous sections, the following suggestions for the realization of a field test were derived.

1. Develop automatic logging mechanisms.

7. Lessons learned

2. Do a lot of testing of these mechanisms on various operating systems.
3. Develop automatic tools analyzing the log files.
4. Keep additional work for users at a minimum. This keeps their focus on the actual test object and can help preventing people from quitting the test.
5. Revise your instructions and information material over and over again. It cannot be clear and simple enough.
6. Have some critical users with no knowledge of the tested object do pre-tests of everything.
7. Revise your test material again.
8. Contact as many possible test persons as possible. Often only a quarter or less replies, when asked to actually participate in a test.
9. Try to start with as many users as you can get. The smaller the group size, the more backup users might be needed, because every person counts. For larger groups fewer backup users should be necessary.
10. Recruit people you know or people you pay or be prepared for (higher) drop-outs.
11. Give users more than enough time to fill in a consent form and initial questionnaires.
12. If possible, plan a personal meeting before the test start, where everything is explained. Show them how to install and use the test object. If necessary, show them how to return logging data to you. Give them the opportunity to pose questions.
13. If possible, plan twice as much testing time as needed. People often have other liabilities and not enough time to work with your test object. Give them more than enough time to do so.
14. During the test constantly ask users, if they need help or have some questions. Read their test diaries, if available, and address problems or questions, noted in it.
15. Plan enough time between test end and beginning of the evaluations. Test users will take some time to return all data to you.
16. If possible, plan a personal meeting after the test end to thank your test users and to celebrate.

8. Summary and Outlook

The development and execution of a long-term evaluation of a software called tagstore were described in this thesis. The basic idea behind Tagtrees, and tagstore, a new approach for PIM (Personal Information Management), were described in Chapter 2. Additionally, configurations, features and limitations of tagstore were described in this chapter. With tagstore, navigational hierarchies are created automatically, based on the tags provided by a user. Re-finding items is possible through various paths and associative navigation. Users do not have to memorize their exact item locations anymore.

As theoretical part of this thesis, several previously conducted field tests were analyzed and described in Chapter 3. The analysis of those papers built the foundation of the test methodology for this field test. They inspired the use of a test diary and the classification of field tests according to their test time and size.

The actual test methodology was described in Chapter 4. All the preliminary work, such as creation of videos, development of a logging mechanism, pre-test etc. and the methodology for the actual field test were described there. The subsequent chapters presented the results of the field test. Chapter 5 described the results of the initial background questionnaire and Chapter 6 presented the results from all other questionnaires and the results from the log files. All evaluations were done for a main group of users, who finished all parts of the test, and some evaluations were done for all users, who did a specific part of the test as well. On the one hand results show large room for improvements, regarding software bugs and usability issues, on the other hand overall user feedback was nearly as positive as for two previously conducted laboratory tests. Feedback might have been better, if software and usability issues were less frequent and tagstore were better integrated in operating systems.

8. Summary and Outlook

Based on evaluation of papers in Chapter 3 and the experiences gained during this field test, some suggestions for the execution of field tests were established in Chapter 7. This chapter also contains lessons learned regarding interaction with test users.

Currently tagstore and TagTrees are a promising approach for new PIM concepts, but far from being a fully functional software. Before future research can be done with tagstore, all existing bugs should be fixed, as these bugs may influence user experience and feedback. This is especially true for field tests, where users have to install and configure the software themselves. Additionally some suggestions for improvement from Chapter 6 should be implemented in tagstore as well. Future research should aim at even longer testing times and more test users. To collect additional, objective data the logging mechanism for re-finding should be fixed or a new one should be developed. These objective data would provide a greater insight into re-finding habits and use of PIM in general and could help improving existing PIM technologies and developing new ones.

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Appendix

Appendix A.

Test Material

Appendix A. Test Material



[Startseite](#) > Feldtest

Sie haben sich bereit erklärt, bei unserem Feldtest mitzumachen und haben diesen Link im Rahmen Ihrer Teilnahme erhalten.

Bitte behandeln Sie diesen Link vertraulich und geben Sie ihn *nicht* weiter!

Sie haben von uns eine Einverständniserklärung bekommen, in der Sie folgende Punkte zur Kenntnis nehmen:

Während des Tests werden folgende Dinge mitgeloggt:

- Namen von Dateien und Ordnern, die in tagstore abgelegt werden
- alle Tags, die Sie in tagstore eingeben
- Zeitstempel aller tagstore-Aktivitäten

Darüberhinaus stimmen Sie zu, dass wir Ihre Daten aus den Fragebögen anonymisiert für wissenschaftliche Forschung und Lehrzwecke verwenden und veröffentlichen dürfen.

Falls noch nicht erledigt: Bitte füllen Sie die Einverständniserklärung aus und senden Sie diese an uns zurück.

Bei der Erstellung von tagstore wurde großer Wert darauf gelegt, dass es in keinem Fall zu einem Datenverlust kommen kann. Trotzdem können wir aus verständlichen Gründen keine Garantie abgeben oder im Schadensfall Haftung übernehmen. Bitte sorgen Sie dafür, dass Sie wichtige Daten ebenfalls durch Maßnahmen wie [regelmäßiges Backup](#) sichern. Das empfiehlt sich unabhängig vom Feldtest :-)

Mit dem Klick auf den folgenden Link erklären Sie, die obigen Punkte sorgfältig gelesen und verstanden zu haben:

[weiter zum Download](#)

[zurück zur Hauptseite](#)

Figure A.1.: The tagstore website for the field test, page one



[Startseite](#) > [Feldtest](#) > Download

Bitte behandeln Sie diesen Link vertraulich und geben ihn *nicht* weiter!

1. Laden Sie den [Installer für tagstore](#) herunter.
2. Bei Windows 7 ist zumindest das Service Pack 1 notwendig. Sorgen Sie dafür, dass alle Windows-Updates eingespielt wurden.
3. Bitte deinstallieren Sie alte Versionen von folgenden Programmen, sofern Sie diese auf Ihrem PC haben. Für tagstore benötigen Sie aktuelle Versionen, diese sind im Installer enthalten und werden automatisch installiert.
 - Python
 - PyQt
 - pywin
4. Installieren Sie das Programm
 - Lassen Sie bitte alle Pfade im Installationsprogramm so wie sie sind
 - Klicken Sie sich einfach mit „Weiter“ durch
 - Bitte lesen Sie die Installationsmeldungen (aufpoppende Textfenster), sie enthalten wichtige Informationen
5. Starten Sie Ihren Computer neu
6. Legen Sie mit Hilfe des tagstore_manager *genau einen* store an.
 - Bitte lassen Sie im ersten Tab/Reiter „Meine Tags“ alles unverändert, für unsere Auswertung benötigen wir eine einheitliche Konfiguration. Die anderen Optionen wie Datumsstempel, Ablaufdatum, Re-Tagging und Tags umbenennen können Sie gerne verwenden/ändern.

Figure A.2.: The tagstore website for the field test, page two, part 1/2

Appendix A. Test Material

7. Sie müssen tagstore nicht händisch aus „Programme“ heraus starten. **Der Start erfolgt automatisch mit dem Windowsstart** (Voraussetzung: deutsches Windows; bei englischem Windows bitte ausprobieren). Daher: wenn Sie Ihren ersten store anlegen, läuft tagstore im Hintergrund bereits und Sie können sofort damit beginnen, Dateien in tagstore abzulegen. Hinweis: Wenn Sie das erste Mal Dateien in tagstore ablegen, kann es ein wenig dauern bis sich das tagging Fenster öffnet.

Die ersten Schritte mit tagstore erklärt Ihnen der Assistent, sobald Sie tagstore das erste Mal starten. Weiters können wir Ihnen noch [das allgemeine tagstore-Video](#) anbieten, das kurz veranschaulicht, wie tagstore funktioniert. Es wurde allerdings mit einer älteren tagstore-Version erstellt, welche noch nicht das fortgeschrittene Recommender-System in Form der Tag-Cloud hatte.

Wenn Sie Fragen zum Feldtest haben, lesen Sie bitte die [häufig gestellten Fragen zum Feldtest](#). Bei allgemeinen Fragen zu tagstore lesen Sie bitte [die allgemeine tagstore-FAQs](#).

Bei Fragen oder Problemen, die in den FAQs nicht beantwortet werden, wenden Sie sich bitte an feldtest@IST.TUGraz.at oder bei Skype an „fieldtest tagstore“. Sie können mit uns per Email auch einen Termin für ein Skypegespräch ausmachen, falls wir zu Ihren Arbeitszeiten nicht in Skype online sind.

Das tagstore-Team bedankt sich schon mal recht herzlich, dass Sie beim Feldtest mitmachen und wünscht Ihnen viel Freude mit den tollen Möglichkeiten von tagstore!

Der normale Installationsvorgang wird im folgenden Video im Detail beschrieben:



Figure A.3.: The tagstore website for the field test, page two, part 2/2



[Startseite](#) > [Feldtest](#) > Dateien zurückschicken

Wir benötigen zur Auswertung Ihren store-Ordner, wo Itemnamen, Tags und Zeitstempel abgelegt wurden.

Wenn Sie wissen, wie man Archivdateien erstellt:

Sie sind vertraut mit der Erstellung von ZIP bzw. RAR-Archiven? Wunderbar. Dann wechseln Sie in Ihren store (dort, wo sie auch den Ablage- und Navigationsordner sehen) und packen den Ordner namens

`.tagstore`

in ein Archiv und senden uns diese Archivdatei [per Email: annemarie.harzl@student.tugraz.at](mailto:annemarie.harzl@student.tugraz.at)

Anleitung, wenn Sie mit Archivdateien noch nicht vertraut sind:

1. Bitte laden Sie das Programm WinRAR von [diesem URL](#) herunter. Klicken Sie auf

`WinRAR laden`

, kaufen müssen Sie nichts.

- 2.

Installieren Sie das Programm und geben als Installationsordner bitte

`C:\Programme\WinRAR\`

an.

3. Speichern Sie [diese Datei](#) in Ihren persönlichen store, also z.B.

`C:\meinstore\`

Figure A.4.: The tagstore website for the file collector, page one

Appendix A. Test Material

4. Führen Sie die Datei

`logs_packen`

mit Doppelklick aus.

5. Die neu erzeugte Datei (mit Datumsstempel) schicken Sie bitte an uns [per Email: annemarie.harzl@student.tugraz.at](mailto:annemarie.harzl@student.tugraz.at)

Vielen Dank!

[zurück zur Hauptseite](#)

Letzte Änderung: 2012-09-26T17:16:41

Figure A.5.: The tagstore website for the file collector, page two

Vertraulichkeits- und Einverständniserklärung

Danke, dass Sie an unserer Studie teilnehmen. Bitte beachten Sie, dass Ihnen unter Umständen vertrauliche Informationen zuteil werden und dass Sie diese nicht weitergeben dürfen.

Wir versichern Ihnen, dass ausschließlich Ihre Verwendung von tagstore (ablegen) mitgeloggt wird. Es werden dabei weder Aktionen mitgeloggt, die nicht tagstore betreffen, noch wird der Inhalt Ihrer Dateien ermittelt.

Bitte lesen Sie die untenstehende **Einverständniserklärung** und unterschreiben Sie an der dafür vorgesehenen Stelle. Vielen Dank.

Ich erkläre, keine Informationen aus der Studie an Dritte weiterzugeben.
Folgende Daten werden im Zusammenhang mit der Studie von tagstore mitgeloggt und ich erkläre mich damit einverstanden:

- Datei- und Ordernamen, die in tagstore abgelegt werden
- Alle in tagstore eingegeben Daten (Tags, Zeitstempel, Itemnamen)

Ich gebe die Erlaubnis, diese Daten für Lehrzwecke und im Rahmen wissenschaftlicher Forschung anonymisiert zu verwenden und zu veröffentlichen.

Nicht mitgeloggt werden:

- Inhalte der Dateien und Ordner, die in tagstore abgelegt werden
- Alles im Dateisystem, was außerhalb der tagstore-Ordner passiert
- Alle Anwendungsaktivitäten, die in Windows und Ihren Anwendungsprogrammen (außer tagstore) passieren

Ort, Datum: _____

Name: _____

Unterschrift: _____

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8010 Graz

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Figure A.6.: Consent and confidentiality form

Appendix A. Test Material

Feldtest - Eingangsfragebogen

Willkommen zur Testbenutzer Umfrage für tagstore.
Mit dieser Umfrage möchten wir für uns wichtige Daten von Ihnen, unserem Testbenutzer, erfahren.
Diese Daten werden von uns personalisiert gespeichert, aber nur anonymisiert ausgewertet und verwendet und zwar ausschließlich für Lehrzwecke und im Rahmen wissenschaftlicher Forschung.
Sollten Sie damit nicht einverstanden sein, brechen Sie bitte die Umfrage an dieser Stelle ab.

Erhalten Sie beim Laden einer Seite eine Fehlermeldung, so laden Sie bitte die Seite erneut, dies sollte den Fehler beheben.

Diese Umfrage enthält 47 Fragen.

[Weiter >>](#) [Umfrage verlassen und löschen](#)

Figure A.7.: Background questionnaire, welcome page

Feldtest - Eingangsfragebogen

0% 100%

Bereitschaft als Testbenutzer zu agieren
Verwenden Sie kein Betriebssystem Windows und haben Administratorrechte, antworten Sie bitte unten mit "Nein", da dieser Feldtest nur mit Windows durchgeführt wird.
In diesem Fall danken wir für Ihr Interesse und verträsten Sie auf die tagstore-Pakete, die in Zukunft frei zum Download zur Verfügung gestellt werden.
Wenn Sie Windows (mit Möglichkeit einer Programminstallation als Administrator) verwenden, dann können Sie bei unserem Feldtest sehr gerne mitmachen.

• Würden Sie sich für einen mehrwöchigen Testlauf der Software tagstore auf Ihrem Computer interessieren?

Ja Nein

? Wenn Sie mit "Nein" antworten, speichern Sie diese Antwort mit Klick auf "Weiter" ab und brechen die Umfrage danach bitte ab. In diesem Fall benötigen wir Ihre Daten nicht.

[<< Zurück](#) [Weiter >>](#) [Umfrage verlassen und löschen](#)

Figure A.8.: Background questionnaire, page one

Feldtest - Eingangsfragebogen

0% 100%

Persönliche Daten / Basisdaten
Fragen zu persönlichen Daten

***Bitte geben Sie Ihr Geschlecht an.**

weiblich männlich

***Wie alt sind Sie?**

In dieses Feld dürfen nur Ziffern eingetragen werden.

***Welchem Beruf gehen Sie derzeit nach?**

***Bitte nennen Sie Ihre höchste abgeschlossene Ausbildung.**

Bitte wählen Sie eine der folgenden Antworten.

- Pflichtschule (Hauptschule)
- Lehre
- Matura
- Bachelorabschluss
- Diplomstudium, Magisterstudium
- Doktorat
- Andere Ausbildung

Wenn Sie studieren oder studiert haben, beschreiben Sie bitte ihr Hauptstudiengebiet:

Figure A.9.: Background questionnaire, page two

Appendix A. Test Material

Feldtest - Eingangsfragebogen

0% 100%

Computernutzung

***Wie lange benutzen Sie bereits einen Computer (in Jahren)?**

In dieses Feld dürfen nur Ziffern eingetragen werden.

***Wie viele Stunden pro Tag verwenden Sie durchschnittlich einen Computer?**

In dieses Feld dürfen nur Ziffern eingetragen werden.

***Besitzen Sie einen eigenen Computer?**

Bitte wählen Sie einen oder mehrere Punkte aus der Liste aus.

Notebook/Laptop
 Standrechner/Desktop
 Nein

***Besitzen Sie Administratorrechte auf Ihrem Computer, um Software installieren zu können?**

Bitte wählen Sie eine der folgenden Antworten.

Ja
 Nein
 Weiß ich nicht

***Welches Betriebssystem werden Sie für den Test verwenden?**

Bitte wählen Sie eine der folgenden Antworten.

Windows 7 64 bit Version
 Windows 7 32 bit Version
 Windows Vista 64 bit Version
 Windows Vista 32 bit Version
 Windows XP 64 bit Version
 Windows XP 32 bit Version
 Sonstiges:

Figure A.10.: Background questionnaire, page three, part 1/3

***Welche Betriebssysteme verwenden Sie sonst noch?**

Bitte wählen Sie einen oder mehrere Punkte aus der Liste aus.

- Keine
- Windows 7 64bit Version
- Windows 7 32bit Version
- Windows Vista 64bit Version
- Windows Vista 32bit Version
- Windows XP 64bit Version
- Windows XP 32bit Version
- Mac OS X
- Linux Ubuntu
- Linux Debian
- Linux Gentoo
- Linux Slackware
- Unix
- Sonstiges:

***Welchen Datei-Browser verwenden Sie hauptsächlich?**

Bitte wählen Sie eine der folgenden Antworten.

- Windows Explorer
- Finder
- Free Commander
- Weiß ich nicht
- Anderer:

Figure A.11.: Background questionnaire, page three, part 2/3

Appendix A. Test Material

***Welche Desktop-Suchmaschine verwenden Sie?**

Was ist eine Desktop-Suchmaschine?
Eine auf Ihrem Computer installierte Suchmaschine um Ihre eigenen Dateien zu finden. Sie können z.B. nach Dateinamen, Bearbeitungsdatum u.ä. suchen.

Bitte wählen Sie einen oder mehrere Punkte aus der Liste aus.

integrierte Windows Dateisuche
 Google Desktop Search
 Keine
 Sonstiges:

***Wie oft verwenden Sie eine Desktop-Suchmaschine?**

Bitte wählen Sie eine der folgenden Antworten.

Häufig, ich verwende öfter die Suche als durch meine Ordner zu navigieren.
 Ab und zu, wenn ich eine Datei nicht auf Anhieb finde.
 So gut wie nie, nur wenn ich vorher schon ausgiebig meine Ordner durchforstet habe.
 Ich wusste gar nicht, dass es so etwas wie Desktop-Suchmaschinen gibt.

<< Zurück Weiter >> Umfrage verlassen und löschen

Figure A.12.: Background questionnaire, page three, part 3/3

Feldtest - Eingangsfragebogen

0% 100%

Erfahrung mit Usability Tests

***Haben Sie schon an einer Usability Studie teilgenommen? (Studie zum Testen von Software / einer Homepage)**

Ja Nein

***Wenn ja, als was?**

Bitte wählen Sie einen oder mehrere Punkte aus der Liste aus.

als Testbenutzer
 als Mitglied des Testteams

<< Zurück Weiter >> Umfrage verlassen und löschen

Figure A.13.: Background questionnaire, page four

Feldtest - Eingangsfragebogen

0% 100%

Tagging

*Ist Ihnen der Begriff Tagging bekannt?

Ja Nein

*Verwenden Sie Tagging?

Ja Nein

<< Zurück Weiter >> Umfrage verlassen und löschen

Figure A.14.: Background questionnaire, page five

Appendix A. Test Material

Feldtest - Eingangsfragebogen

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Tagging

***Ist Ihnen der Begriff Tagging bekannt?**

Ja Nein

***Was verstehen Sie unter Tagging?**

***Verwenden Sie Tagging?**

Ja Nein

***Wofür/wo verwenden Sie Tagging am häufigsten?**

***Wie nützlich finden Sie Tagging?**
(1 = äußerst nützlich bis 5 = gar nicht nützlich)

1 2 3 4 5

Figure A.15.: Background questionnaire, page five, additional questions, part 1/2

•Wie lange verwenden sie Tagging Systeme bereits? Bitte geben Sie die dazugehörige Einheit an (Wochen, Monate, Jahre).

•Haben Sie sich über die Tags (Menge, Formulierung, Sprache,...) gezielt Gedanken gemacht?
Bitte wählen Sie eine der folgenden Antworten.

Ja, ich habe mir im Voraus sehr genaue Gedanken dazu gemacht und muss selten/nie Tags ändern.

Ich habe mir nur wenige Gedanken dazu gemacht, mein System wächst organisch. Ich muss öfters Tags ändern.

Ich ändere meine Tags ständig.

Sonstiges:

Figure A.16.: Background questionnaire, page five, additional questions, part 2/2

Feldtest - Eingangsfragebogen

0% 100%

Ordnernutzung

•Wie viele Ordner würden Sie als Ihre wichtigsten (meistgenutzten) Ordner beschreiben? (Ungefähre Anzahl reicht)

In dieses Feld dürfen nur Ziffern eingetragen werden.

•Wie würden Sie sich eher einschätzen?
Bitte wählen Sie eine der folgenden Antworten.

Ich ordne Dinge gerne und verstau sie in einem System

Ich staple meine Sachen und erspare mir den Organisationsoverhead

Ich staple meine Sachen bis es mir zu bunt wird und ordne sie dann ein

Figure A.17.: Background questionnaire, page six

Appendix A. Test Material

Feldtest - Eingangsfragebogen

0% 100%

tagstore Erfahrung

*Haben Sie bereits selbst mit der Software tagstore gearbeitet?

Ja Nein

*Wie lange haben Sie bereits mit tagstore gearbeitet? Bitte Einheit (Tage, Wochen, Monate) hinzufügen.

<< Zurück Weiter >> Umfrage verlassen und löschen

Figure A.18.: Background questionnaire, page seven

Feldtest - Eingangsfragebogen

0% 100%

Soziale Netzwerke

*Verwenden Sie facebook, Google+, studivz, Twitter oder andere soziale Netzwerke?

Ja Nein

*Nutzen Sie Dropbox, Cloud, Skydrive oder andere Dienste um ihre Dateien online für Sie verfügbar zu machen?

Ja Nein

*Wie wichtig ist es Ihnen die Kontrolle über Ihre persönlichen Daten und Dateien zu haben und den Zugang zu diesen nach Ihren Wünschen zu regeln?
(1=extrem wichtig bis 5 = total unwichtig)

1 2 3 4 5

<< Zurück Weiter >> Umfrage verlassen und löschen

Figure A.19.: Background questionnaire, page eight

Feldtest - Eingangsfragebogen

0% 100%

Soziale Netzwerke

***Verwenden Sie facebook, Google+, studivz, Twitter oder andere soziale Netzwerke?**

Ja Nein

***Warum haben Sie sich dazu entschieden keine sozialen Netzwerke zu benutzen?**

***Nutzen Sie Dropbox, Cloud, Skydrive oder andere Dienste um ihre Dateien online für Sie verfügbar zu machen?**

Ja Nein

***Warum nutzen Sie solche Dienste nicht?**

***Wie wichtig ist es Ihnen die Kontrolle über Ihre persönlichen Daten und Dateien zu haben und den Zugang zu diesen nach Ihren Wünschen zu regeln?
(1=extrem wichtig bis 5 = total unwichtig)**

1 2 3 4 5

Figure A.20.: Background questionnaire, page eight, additional questions, part 1/3

Appendix A. Test Material

***Verwenden Sie facebook, Google+, studivz, Twitter oder andere soziale Netzwerke?**

Ja Nein

***Welche?**

Bitte wählen Sie einen oder mehrere Punkte aus der Liste aus.

facebook
 Google+
 studivz
 Xing
 Twitter
 Sonstiges:

***Warum benutzen Sie (welche) sozialen Netzwerke?**

***In welchem Umfang nutzen Sie soziale Netzwerke (Stunden/Tag)?**

In dieses Feld dürfen nur Ziffern eingetragen werden.

***Welche Informationen geben Sie in sozialen Netzwerken preis?**

Bitte wählen Sie eine der folgenden Antworten.

Viele und nur korrekte Angaben.
 Viele und teilweise korrekte Angaben.
 Viele und nur inkorrekte Angaben.
 Wenige und nur korrekte Angaben.
 Wenige und teilweise korrekte Angaben.
 Wenige und nur inkorrekte Angaben.
 Keine Angaben (nur Anmeldenname), da ich nur lese was andere tun, selbst aber nicht aktiv bin.
 Sonstiges:

Figure A.21.: Background questionnaire, page eight, additional questions, part 2/3

***Nutzen Sie die Privatsphäreoptionen um den Zugriff auf Ihr Profil zu beschränken?**
Bitte wählen Sie eine der folgenden Antworten.

Nein, bei mir ist alles öffentlich.
 Ich erlaube Freunden und Freunden von Freunden den Zugriff auf mein Profil.
 Ich erlaube nur Freunden den Zugriff auf mein Profil.
 Ich habe eigene Freundeskreise, denen unterschiedliche Bereiche zugänglich sind.
 Einige Bereiche sind nur mir zugänglich.
 Sonstiges:

***Nutzen Sie Dropbox, Cloud, Skydrive oder andere Dienste um ihre Dateien online für Sie verfügbar zu machen?**

Ja Nein

***Warum/wofür nutzen Sie Dropbox, Cloud etc.?**
Bitte wählen Sie einen oder mehrere Punkte aus der Liste aus.

Um Dateien mit anderen zu teilen
 Als Backup
 Um auf allen Geräten denselben Stand zu haben
 Um von überall auf meine Daten zugreifen zu können
 Sonstiges:

***Wie wichtig ist es Ihnen die Kontrolle über Ihre persönlichen Daten und Dateien zu haben und den Zugang zu diesen nach Ihren Wünschen zu regeln?
 (1=extrem wichtig bis 5 = total unwichtig)**

1 2 3 4 5

Figure A.22.: Background questionnaire, page eight, additional questions, part 3/3

Appendix A. Test Material

Feldtest - Eingangsfragebogen

0% 100%

Status Quo

***Wie zufrieden sind Sie mit Ihrem derzeitigen Ordnersystem auf Ihrer Festplatte?
(1 = sehr zufrieden bis 5 = total unzufrieden)**

1 2 3 4 5

***Was sind die größten Probleme mit Ihrer derzeitigen Dateiverwaltungsmethode?**

***Ist Ihr Ordnersystem historisch gewachsen oder haben Sie sich gezielt eine für Sie passende Ordnerhierarchie überlegt?**

Bitte wählen Sie einen oder mehrere Punkte aus der Liste aus.

- Ich habe mir eine genaue Ordnung überlegt und muss nur selten/nie etwas daran ändern.
- Ich habe nur ein Grundgerüst, dass sich mit der Zeit immer wieder ändert.
- Ich ändere meine Struktur ständig.
- Ich habe keine Struktur und gebe alles/vieles in einen Ordner um dann danach zu suchen.
- Mein Ordnersystem ist einfach wie es ist (historisch gewachsen).
- Sonstiges:

Figure A.23.: Background questionnaire, page nine

Feldtest - Eingangsfragebogen

0% 100%

Zukunft / Erwartungen

***Was erwarten Sie sich von tagstore?**

***Wofür werden Sie tagstore einsetzen?**

***Welche Daten/Dateien sind aus Ihrer derzeitigen Sichtweise für tagstore eher gut geeignet?**

***Welche Daten/Dateien sind aus Ihrer derzeitigen Sichtweise für tagstore eher weniger gut geeignet?**

***Wünschen Sie sich Tipps, Ratschläge, Best practices rund um den Einsatz von tagstore?**

Ja Nein

Figure A.24.: Background questionnaire, page ten

Appendix A. Test Material



Figure A.25.: Background questionnaire, page eleven

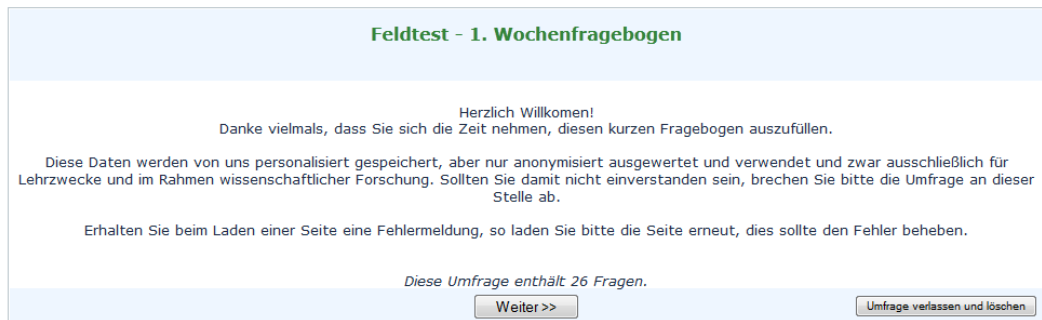


Figure A.26.: Weekly questionnaire, welcome page

Feldtest - 1. Wochenfragebogen

0% 100%

Verwendung

Wenn Sie die vergangene Woche tagstore überhaupt nicht verwendet haben, weder zum Ablegen, noch die tagstore Ordnerstruktur zum Wiederfinden und uns auch sonst nichts zu sagen haben (Meinungen, Testtagebuch, Erkenntnisse) dann gehen Sie bitte wie folgt vor:

- Beantworten Sie bitte die unten stehende Frage mit "Nein"
- Klicken auf weiter, Sie kommen auf die nächste Seite und die Antwort wird bei uns gespeichert
- Brechen Sie nun den Fragebogen ab, in dem Sie das Browserfenster schließen.

Wenn Sie möchten, können Sie den Fragebogen natürlich trotzdem ausfüllen. Wir wollen Ihnen nur die Möglichkeit bieten, den Wochenfragebogen auszulassen, wenn Sie sich in der vergangenen Woche nicht mit tagstore beschäftigt haben.

Für alle, die mit Ja antworten gilt: Bitte den Fragebogen unbedingt fertig ausfüllen.

***Haben Sie tagstore die vergangene Woche zum Ablegen und/oder Wiederfinden von Dateien benutzt?**

Ja Nein

Figure A.27.: Weekly questionnaire, page one

Appendix A. Test Material

Feldtest - 1. Wochenfragebogen

0% 100%

Verwendung von tagstore

***Wie viele Items (Dateien/Ordner) haben Sie in der vergangenen Woche ungefähr mit tagstore abgelegt?**

Bitte wählen Sie eine der folgenden Antworten.

- Keine
- ca. 1-10
- ca. 11-20
- ca. 21-30
- mehr als 30

***Wie hilfreich ist tagstore beim Ablegen von Dateien?**
(1 = äußerst hilfreich, 5 = überhaupt nicht hilfreich)

1 2 3 4 5

***Wie oft haben Sie in der vergangen Woche Items (Dateien/Ordner) verwendet/geöffnet, die Sie mit Hilfe von tagstore abgelegt haben?**

Bitte wählen Sie eine der folgenden Antworten.

- 6-7 Tage die Woche
- 4-5 Tage die Woche
- 2-3 Tage die Woche
- 1mal pro Woche
- nie

Figure A.28.: Weekly questionnaire, page two, part 1/2

***Wie oft haben Sie in der vergangenen Woche Dateien aus dem tagstore Ablage Ordner heraus geöffnet?**

Bitte wählen Sie eine der folgenden Antworten.

Häufig (fast immer, wenn ich Dateien aus dem store brauche)

Selten (nur, wenn ich es in meiner Ordnerstruktur nicht finde)

Nie (ich öffne meine Dateien immer aus Ordnerstruktur heraus)

***Wenn Sie Dateien in Ihrer Ordnerstruktur geöffnet haben, welchen Weg nahmen Sie in der vergangenen Woche?**

Bitte wählen Sie eine der folgenden Antworten.

Ich merke mir, wo die Dateien liegen und klicke mich (fast) immer durch dieselben Ordner.

Je nachdem. Wenn ich den Weg schon weiß, nehme ich immer denselben. Bei selten genutzten Dateien lasse ich mich von den Tags leiten.

Ich lasse mich (fast) nur von den Tags leiten und nehme immer wieder andere Wege zu meinen Dateien.

? Annahme: Sie haben Ihre Mein_Arbeitsprojekt_2012.doc mit folgenden tags gespeichert: 2012, Projekt, Arbeit.
Klicken Sie sich dann immer durch dieselbe Ordnerreihenfolge z.B. Arbeit->2012->Projekt oder verwenden Sie auch eine andere Reihenfolge?

***Mussten Sie in der vergangenen Woche eine Dateisuche / Desktopsuchmaschine verwenden um Ihre in tagstore abgelegten Dateien zu finden?**

Ja Nein

***Wie hilfreich ist tagstore beim Wiederfinden von Dateien?
(1 = äußerst hilfreich, 5 = überhaupt nicht hilfreich)**

1 2 3 4 5

Figure A.29.: Weekly questionnaire, page two, part 2/2

***Wie oft haben Sie in der vergangenen Woche Items (Dateien/Ordner) verwendet/geöffnet, die Sie mit Hilfe von tagstore abgelegt haben?**

Bitte wählen Sie eine der folgenden Antworten.

6-7 Tage die Woche

4-5 Tage die Woche

2-3 Tage die Woche

1mal pro Woche

nie

In welchem Ausmaß haben Sie an diesen Tagen tagstore zum Wiederfinden von Dateien verwendet?

Bitte wählen Sie eine der folgenden Antworten.

Mehrmals am Tag.

Nur vereinzelt.

Figure A.30.: Weekly questionnaire, page two, additional questions, part 1/2

Appendix A. Test Material

***Mussten Sie in der vergangenen Woche eine Dateisuche / Desktopsuchmaschine verwenden um Ihre in tagstore abgelegten Dateien zu finden?**

Ja Nein

***Wie oft mussten Sie in der vergangenen Woche eine Dateisuche nutzen um Ihre Dateien zu finden?**
Bitte wählen Sie eine der folgenden Antworten.

Häufig
 Selten
 Nur einmal

Warum mussten Sie in der vergangenen Woche die Dateisuche verwenden?
mögliche Gründe:
Datei war falsch getaggt, Suchen in der Ordnerstruktur hat zu lange gedauert etc.

Figure A.31.: Weekly questionnaire, page two, additional questions, part 2/2

Feldtest - 1. Wochenfragebogen

0% 100%

Re-tagging

***Haben Sie in der vergangenen Woche Dateien im Nachhinein neu verschlagwortet (Re-tagging im tagstore Manager)?**
Bitte wählen Sie eine der folgenden Antworten.

Ja, häufig.
 Ja, manchmal.
 Nein, nie. Ich war mit meinen Taggingvorgängen immer zufrieden.
 Ich wusste gar nicht, dass man das kann.

***Haben Sie in der vergangenen Woche tags mit dem tagstore Manager umbenannt?**
Bitte wählen Sie eine der folgenden Antworten.

Ja, häufig.
 Ja, manchmal.
 Nein, nie. Ich war mit meinen tags immer zufrieden.
 Ich wusste gar nicht, dass das möglich ist.

<< Zurück

Figure A.32.: Weekly questionnaire, page three

Feldtest - 1. Wochenfragebogen

0% 100%

Re-tagging

***Haben Sie in der vergangenen Woche Dateien im Nachhinein neu verschlagwortet (Re-tagging im tagstore Manager)?**

Bitte wählen Sie eine der folgenden Antworten.

Ja, häufig.
 Ja, manchmal.
 Nein, nie. Ich war mit meinen Taggingvorgängen immer zufrieden.
 Ich wusste gar nicht, dass man das kann.

***Warum hätten oder haben Sie Dateien neu getaggt?**

Bitte wählen Sie einen oder mehrere Punkte aus der Liste aus.

Ich habe dem Item (Datei, Ordner) zu wenige Tags zugeordnet.
 Ich habe dem Item (Datei, Ordner) zu viele Tags zugeordnet.
 Ich habe dem Item (Datei, Ordner) unpassende Tags zugeordnet.
 Ich hätte gar keine Items neu taggen wollen.
 Sonstiges:

***Haben Sie in der vergangenen Woche tags mit dem tagstore Manager umbenannt?**

Bitte wählen Sie eine der folgenden Antworten.

Ja, häufig.
 Ja, manchmal.
 Nein, nie. Ich war mit meinen tags immer zufrieden.
 Ich wusste gar nicht, dass das möglich ist.

***Warum haben oder hätten Sie tags gerne nachträglich umbenannt?**

Bitte wählen Sie einen oder mehrere Punkte aus der Liste aus.

Tippfehler ausbessern
 Groß/Kleinschreibung ändern
 Hauptwort/Zeitwort ändern
 Besserer Begriff eingefallen
 Ich hätte gar keine Tags umbenennen wollen.
 Sonstiges:

Figure A.33.: Weekly questionnaire, page three, additional questions

Appendix A. Test Material

Feldtest - 1. Wochenfragebogen

0% 100%

Nutzen von tagstore

***Im Vergleich zu Ihren Ordnerstrukturen ohne tagstore, finden Sie, dass Ihnen tagstore einen Zusatznutzen bringt? (1 = sehr großen Zusatznutzen, 5 = keinen Zusatznutzen)**

1 2 3 4 5

Worin besteht Ihrer Meinung nach dieser Zusatznutzen?

***Ist Ihnen dieser Zusatznutzen den zusätzlichen Aufwand beim Ablegen Ihrer Dateien wert?**
Bitte wählen Sie eine der folgenden Antworten.

Ja definitiv. Ich werde meine Dateien konsequent weiter taggen.
 Ich weiß nicht. Das wird sich erst nach einiger Zeit zeigen.
 Nein, mir ist der Aufwand beim Ablegen zu groß.
 Sonstiges:

***Gab es irgendwelche besonderen Vorkommnisse (Probleme, Aha-Erlebnisse, positive Überraschungen,...) in Zusammenhang mit tagstore?**

Ja Nein

***Haben Sie noch andere Anmerkungen zu tagstore?**

Ja Nein

***Freuen Sie sich auf eine weitere Woche mit tagstore?**

Ja Nein

Figure A.34.: Weekly questionnaire, page four, part 1/2

Bitte begründen Sie Ihre Antwort (Ja oder Nein) von der vorherigen Frage?

*Wie bewerten Sie die Vorschläge der Tag-Cloud?
(1 = sehr gut, 5 = nicht genügend)

1 2 3 4 5

Bitte kopieren Sie Ihre Testtagebucheinträge in das folgende Feld!

<< Zurück Absenden Umfrage verlassen und löschen

Figure A.35.: Weekly questionnaire, page four, part 2/2

Appendix A. Test Material

<p>*Gab es irgendwelche besonderen Vorkommnisse (Probleme, Aha-Erlebnisse, positive Überraschungen,...) in Zusammenhang mit tagstore?</p>
<p><input checked="" type="radio"/> Ja <input type="radio"/> Nein</p>
<p>*Welche Vorkommnisse gab es?</p>
<div style="border: 1px solid black; height: 40px;"></div>
<p>*Haben Sie noch andere Anmerkungen zu tagstore?</p>
<p><input checked="" type="radio"/> Ja <input type="radio"/> Nein</p>
<p>*Ihre Anmerkungen zu tagstore:</p>
<div style="border: 1px solid black; height: 40px;"></div>
<p>*Freuen Sie sich auf eine weitere Woche mit tagstore?</p>
<p><input checked="" type="radio"/> Ja <input type="radio"/> Nein</p>
<p>Bitte begründen Sie Ihre Antwort (Ja oder Nein) von der vorherigen Frage?</p>
<div style="border: 1px solid black; height: 40px;"></div>

Figure A.36.: Weekly questionnaire, page four, additional questions

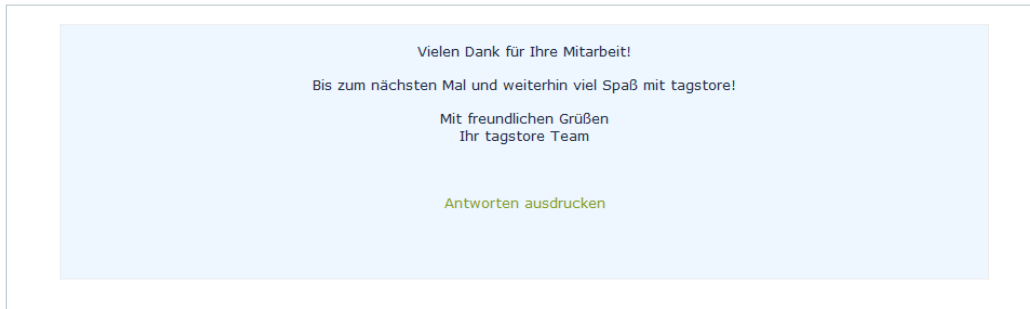


Figure A.37.: Weekly questionnaire, page five

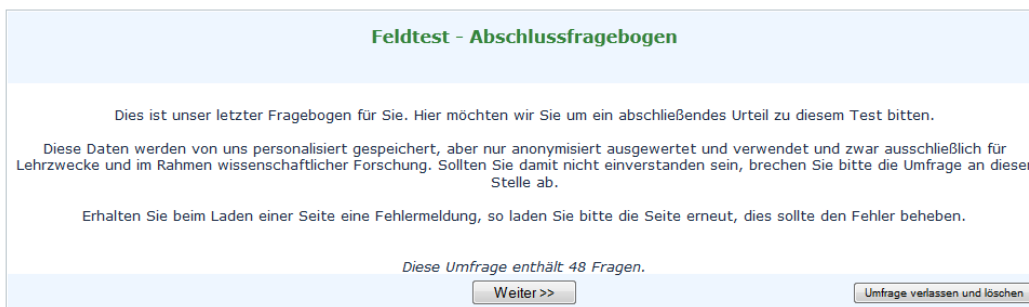


Figure A.38.: Final questionnaire, welcome page

Appendix A. Test Material

Feldtest - Abschlussfragebogen

0% 100%

Verwendung von tagstore

***Wie viele Items (Dateien/Ordner) haben Sie in der vergangenen Woche ungefähr mit tagstore abgelegt?**

Bitte wählen Sie eine der folgenden Antworten.

- Keine
- ca. 1-10
- ca. 11-20
- ca. 21-30
- mehr als 30

***Wie oft haben Sie in der vergangenen Woche Items (Dateien/Ordner) verwendet/geöffnet, die Sie mit Hilfe von tagstore abgelegt haben?**

Bitte wählen Sie eine der folgenden Antworten.

- 6-7 Tage die Woche
- 4-5 Tage die Woche
- 2-3 Tage die Woche
- 1mal pro Woche
- nie

Figure A.39.: Final questionnaire, page one

***Wie oft haben Sie in der vergangenen Woche Items (Dateien/Ordner) verwendet/geöffnet, die Sie mit Hilfe von tagstore abgelegt haben?
Bitte wählen Sie eine der folgenden Antworten.**

6-7 Tage die Woche
 4-5 Tage die Woche
 2-3 Tage die Woche
 1mal pro Woche
 nie

***In welchem Ausmaß haben Sie an diesen Tagen tagstore zum Wiederfinden von Dateien verwendet?
Bitte wählen Sie eine der folgenden Antworten.**

Mehrmals am Tag.
 Nur vereinzelt.

***Wie oft haben Sie in der vergangenen Woche Dateien aus dem tagstore Ablage Ordner heraus geöffnet?
Bitte wählen Sie eine der folgenden Antworten.**

Häufig (fast immer, wenn ich Dateien aus dem store brauche)
 Selten (nur, wenn ich es in meiner Ordnerstruktur nicht finde)
 Nie (ich öffne meine Dateien immer aus Ordnerstruktur heraus)

***Wenn Sie Dateien in Ihrer Ordnerstruktur geöffnet haben, welchen Weg nahmen Sie in der vergangenen Woche?
Bitte wählen Sie eine der folgenden Antworten.**

Ich merke mir, wo die Dateien liegen und klicke mich (fast) immer durch dieselben Ordner.
 Je nachdem. Wenn ich den Weg schon weiß, nehme ich immer denselben. Bei selten genutzten Dateien lasse ich mich von den Tags leiten.
 Ich lasse mich (fast) nur von den Tags leiten und nehme immer wieder andere Wege zu meinen Dateien.

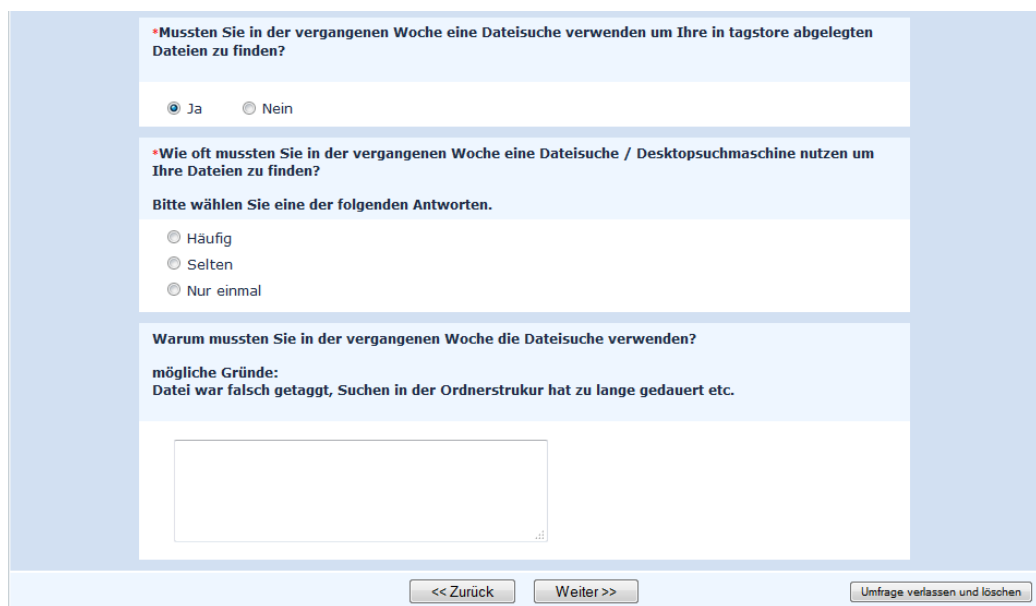
? Annahme: Sie haben Ihre Mein_Arbeitsprojekt_2012.doc mit folgenden tags gespeichert: 2012, Projekt, Arbeit.
Klicken Sie sich dann immer durch dieselbe Ordnerreihenfolge z.B. Arbeit->2012->Projekt oder verwenden Sie auch eine andere Reihenfolge?

***Mussten Sie in der vergangenen Woche eine Dateisuche verwenden um Ihre in tagstore abgelegten Dateien zu finden?**

Ja Nein

Figure A.40.: Final questionnaire, page one, additional questions, part 1/2

Appendix A. Test Material



• Mussten Sie in der vergangenen Woche eine Dateisuche verwenden um Ihre in tagstore abgelegten Dateien zu finden?

Ja Nein

• Wie oft mussten Sie in der vergangenen Woche eine Dateisuche / Desktopsuchmaschine nutzen um Ihre Dateien zu finden?

Bitte wählen Sie eine der folgenden Antworten.

Häufig
 Selten
 Nur einmal

Warum mussten Sie in der vergangenen Woche die Dateisuche verwenden?

mögliche Gründe:
Datei war falsch getaggt, Suchen in der Ordnerstruktur hat zu lange gedauert etc.

<< Zurück Weiter >> Umfrage verlassen und löschen

Figure A.41.: Final questionnaire, page one, additional questions, part 2/2

Feldtest - Abschlussfragebogen

0% 100%

Nutzen von tagstore

***Wie hilfreich war tagstore beim Ablegen von Dateien?
(1 = äußerst hilfreich, 5 = überhaupt nicht hilfreich)**

1 2 3 4 5

***Wie hilfreich war tagstore beim Wiederfinden von Dateien?
(1 = äußerst hilfreich, 5 = überhaupt nicht hilfreich)**

1 2 3 4 5

***Wie zufrieden sind Sie mit dem tagstore Ordnersystem auf Ihrer Festplatte?
(1 = sehr zufrieden bis 5 = total unzufrieden)**

1 2 3 4 5

***Wie zufrieden sind Sie mit Ihrem derzeitigen Ordnersystem (OHNE tagstore) auf Ihrer Festplatte?
(1 = sehr zufrieden bis 5 = total unzufrieden)**

1 2 3 4 5

Figure A.42.: Final questionnaire, page two, part 1/2

Appendix A. Test Material

***Im Vergleich zu Ihren Ordnerstrukturen ohne tagstore, finden Sie, dass Ihnen tagstore einen Zusatznutzen bringt? (1 = sehr großen Zusatznutzen, 5 = keinen Zusatznutzen)**

1 2 3 4 5

Worin besteht Ihrer Meinung nach dieser Zusatznutzen?

***Ist Ihnen dieser Zusatznutzen den zusätzlichen Aufwand beim Ablegen Ihrer Dateien wert?**
Bitte wählen Sie eine der folgenden Antworten.

Ja definitiv. Ich werde meine Dateien konsequent weiter taggen.
 Ich weiß nicht. Das wird sich erst nach einiger Zeit zeigen.
 Nein, mir ist der Aufwand beim Ablegen zu groß.
 Sonstiges:

Figure A.43.: Final questionnaire, page two, part 2/2

Feldtest - Abschlussfragebogen

0% 100%

Eignung von tagstore

***Für welche Art von Dateien (Text, Bilder, Musik, ...) fanden Sie tagstore besonders geeignet?**

Bitte wählen Sie einen oder mehrere Punkte aus der Liste aus.

- Text
- Bilder
- Musik
- Videos
- Präsentationen
- Tabellen
- Für keine Art
- Sonstiges:

Warum finden Sie tagstore für diese Art von Dateien besonders geeignet?

Figure A.44.: Final questionnaire, page three, part 1/2

Appendix A. Test Material

***Für welche Art von Dateien (Text, Bilder, Musik, ...) fanden Sie tagstore ungeeignet?**

Bitte wählen Sie einen oder mehrere Punkte aus der Liste aus.

- Text
- Bilder
- Musik
- Videos
- Präsentationen
- Tabellen
- Für keine Art
- Sonstiges:

Warum finden Sie tagstore für diese Art von Dateien ungeeignet?

***Welche Dateien haben Sie mit tagstore hauptsächlich abgelegt?**

Bitte wählen Sie einen oder mehrere Punkte aus der Liste aus.

- Downloads
- Projektdateien
- Bildarchiv
- Dateisammlungen
- Musikarchiv
- Sonstiges:

Figure A.45.: Final questionnaire, page three, part 2/2

Feldtest - Abschlussfragebogen

0% 100%

Re-tagging

***Haben Sie in der vergangenen Woche Dateien im Nachhinein neu verschlagwortet (Re-tagging im tagstore Manager)?**

Bitte wählen Sie eine der folgenden Antworten.

- Ja, häufig.
- Ja, manchmal.
- Nein, nie. Ich war mit meinen Taggingvorgängen immer zufrieden.
- Ich wusste gar nicht, dass man das kann.

***Haben Sie in der vergangenen Woche tags mit dem tagstore Manager umbenannt?**

Bitte wählen Sie eine der folgenden Antworten.

- Ja, häufig.
- Ja, manchmal.
- Nein, nie. Ich war mit meinen tags immer zufrieden.
- Ich wusste gar nicht, dass das möglich ist.

Figure A.46.: Final questionnaire, page four

Appendix A. Test Material

Feldtest - Abschlussfragebogen

0% 100%

Re-tagging

***Haben Sie in der vergangenen Woche Dateien im Nachhinein neu verschlagwortet (Re-tagging im tagstore Manager)?**

Bitte wählen Sie eine der folgenden Antworten.

Ja, häufig.
 Ja, manchmal.
 Nein, nie. Ich war mit meinen Taggingvorgängen immer zufrieden.
 Ich wusste gar nicht, dass man das kann.

***Warum hätten oder haben Sie Dateien neu getaggt?**

Bitte wählen Sie einen oder mehrere Punkte aus der Liste aus.

Ich habe dem Item (Datei, Ordner) zu wenige Tags zugeordnet.
 Ich habe dem Item (Datei, Ordner) zu viele Tags zugeordnet.
 Ich habe dem Item (Datei, Ordner) unpassende Tags zugeordnet.
 Ich hätte gar keine Items neu taggen wollen.
 Sonstiges:

***Haben Sie in der vergangenen Woche tags mit dem tagstore Manager umbenannt?**

Bitte wählen Sie eine der folgenden Antworten.

Ja, häufig.
 Ja, manchmal.
 Nein, nie. Ich war mit meinen tags immer zufrieden.
 Ich wusste gar nicht, dass das möglich ist.

***Warum haben oder hätten Sie Tags gerne nachträglich umbenannt?**

Bitte wählen Sie einen oder mehrere Punkte aus der Liste aus.

Tippfehler ausbessern
 Groß/Kleinschreibung ändern
 Hauptwort/Zeitwort ändern
 Besserer Begriff eingefallen
 Ich hätte gar keine Tags umbenennen wollen.
 Sonstiges:

Figure A.47.: Final questionnaire, page four, additional questions

Feldtest - Abschlussfragebogen

0% 100%

Bewertung Zusatzoptionen

***Wie fanden Sie die Vorschläge der Tag-Cloud?**
(1 = sehr gut, 5 = nicht genügend)

1
 2
 3
 4
 5

Was hat Ihnen an der Tag-Cloud besonders gut gefallen?

Welche Verbesserungen würden Sie sich an der Tag-Cloud wünschen?

***Haben Sie die Funktion des automatischen Datumsstempels beim Ablegen genutzt?**

Ja
 Nein

? Was ist der automatische Datumsstempel?

Ein Tag mit dem Ablegedatum (Jahr-Monat oder Jahr-Monat-Tag) wird automatisch in die Tagzeile eingefügt.

Figure A.48.: Final questionnaire, page five, part 1/3

Appendix A. Test Material

***Haben Sie die Funktion des Ablaufdatums genutzt?**

Bitte wählen Sie eine der folgenden Antworten.

Ja, ich finde diese Funktion sehr nützlich, weil ich nicht mehr händisch aufräumen muss.

Nein, ich behalte meine Dateien immer dauerhaft und lösche sie höchstens manuell.

Nein, ich wusste nicht, dass es diese Möglichkeit gibt.

Sonstiges:

? Was ist das Ablaufdatum?
Dateien können mit einem tag versehen werden, das kennzeichnet, dass die Datei abläuft. Zum gegebenen Ablaufdatum wird die Datei dann in einen "abgelaufene Dateien" Ordner verschoben.

***Haben Sie die Tagvervollständigung genutzt?**

Bitte wählen Sie eine der folgenden Antworten.

Ja, oft, ich finde diese Funktion hilfreich.

Ja, aber nur selten.

Nein, ich habe sie nie gebraucht.

Nein, ich habe eher die Tag-Cloud verwendet.

Nein, ich finde diese Funktion eher störend.

Sonstiges:

? Was ist die Tagvervollständigung?
Wenn Sie ein bereits einmal benutztes Tag eintippen, bietet Ihnen tagstore nach den ersten Buchstaben das gesamte Tag zur Auswahl an.

***Haben die den tagstore Assistenten (Einführung beim ersten Öffnen des tagstore Managers) verwendet?**

Bitte wählen Sie eine der folgenden Antworten.

Ja, ich habe alles genau gelesen.

Ja, aber nur kurz überflogen.

Nein, das war mir zuviel Text. Ich bin auch ohne zurecht gekommen.

Nein, das war mir zuviel Text. Ich habe nur darin nachgesehen, wenn ich selbst nicht weiterkam.

Sonstiges:

Figure A.49.: Final questionnaire, page five, part 2/3

Was ist Ihnen am tagstore Assistenten (Einführung beim ersten Öffnen des tagstore Managers) positiv oder negativ aufgefallen?

***Haben Sie die Hilfe im tagstore Manager oder im tagging Fenster verwendet?**
Bitte wählen Sie eine der folgenden Antworten.

Ja, sie hat mir geholfen.
 Nein, ich habe sie nur weggeklickt, wenn sie automatisch geöffnet wurde.
 Nein, mir ist gar nicht aufgefallen, dass es eine Hilfe gibt.
 Sonstiges:

Figure A.50.: Final questionnaire, page five, part 3/3

***Haben Sie die Funktion des automatischen Datumsstempels beim Ablegen genutzt?**

Ja Nein

? Was ist der automatische Datumsstempel?
 Ein Tag mit dem Ablegedatum (Jahr-Monat oder Jahr-Monat-Tag) wird automatisch in die Tagzeile eingefügt.

***Warum haben Sie Funktion des automatischen Datumsstempels beim Ablegen genutzt?**
Bitte wählen Sie eine der folgenden Antworten.

Sie war automatisch voreingestellt.
 Ich habe mir diese Funktion selbst eingestellt / angepasst / habe sie absichtlich eingestellt gelassen.
 Sonstiges:

***Wie nützlich fanden Sie den automatischen Datumsstempel beim Wiederfinden der Dateien?**
Bitte wählen Sie eine der folgenden Antworten.

Sehr nützlich, ich habe diese Tags/Navigationsordner häufig verwendet.
 Halbwegs nützlich, ich habe diese Tags/Navigationsordner manchmal verwendet.
 Ich habe diese Funktion nie benutzt, sie war nur voreingestellt.
 Sonstiges:

Figure A.51.: Final questionnaire, page five, additional questions, part 1/4

Appendix A. Test Material

***Haben Sie die Funktion des automatischen Datumsstempels beim Ablegen genutzt?**

Ja Nein

? Was ist der automatische Datumsstempel?

Ein Tag mit dem Ablegedatum (Jahr-Monat oder Jahr-Monat-Tag) wird automatisch in die Tagzeile eingefügt.

***Warum haben Sie die Funktion des automatischen Zeitstempels beim Ablegen nicht benutzt?**

Bitte wählen Sie eine der folgenden Antworten.

Ich wusste nicht, dass es diese Möglichkeit gibt.

Ich habe diese Funktion bewusst ausgeschaltet.

Sonstiges:

***Hätten Sie diese Funktion gerne genutzt, wenn Sie davon gewusst hätten?**

Ja Nein

Figure A.52.: Final questionnaire, page five, additional questions, part 2/4

***Haben Sie die Funktion des automatischen Datumsstempels beim Ablegen genutzt?**

Ja Nein

? Was ist der automatische Datumsstempel?

Ein Tag mit dem Ablegedatum (Jahr-Monat oder Jahr-Monat-Tag) wird automatisch in die Tagzeile eingefügt.

***Warum haben Sie die Funktion des automatischen Zeitstempels beim Ablegen nicht benutzt?**

Bitte wählen Sie eine der folgenden Antworten.

Ich wusste nicht, dass es diese Möglichkeit gibt.

Ich habe diese Funktion bewusst ausgeschaltet.

Sonstiges:

***Warum haben Sie diese Funktion bewusst ausgeschaltet / nicht genutzt?**

Bitte wählen Sie eine der folgenden Antworten.

Ich sehe keinen Nutzen für mich in dieser Funktion.

Ich brauchte die Zahl der tags für andere tags.

Weiß nicht.

Sonstiges:

Figure A.53.: Final questionnaire, page five, additional questions, part 3/4

***Haben Sie die Funktion des Ablaufdatums genutzt?**

Bitte wählen Sie eine der folgenden Antworten.

Ja, ich finde diese Funktion sehr nützlich, weil ich nicht mehr händisch aufräumen muss.

Nein, ich behalte meine Dateien immer dauerhaft und lösche sie höchstens manuell.

Nein, ich wusste nicht, dass es diese Möglichkeit gibt.

Sonstiges:

? Was ist das Ablaufdatum?
Dateien können mit einem Tag versehen werden, das kennzeichnet, dass die Datei abläuft. Zum gegebenen Ablaufdatum wird die Datei dann in einen "abgelaufene Dateien" Ordner verschoben.

***Hätten Sie die Funktion des automatischen Ablaufdatums gerne genutzt, wenn Sie gewußt hätten, dass es sie gibt?**

Bitte wählen Sie eine der folgenden Antworten.

Ja gerne, ich lösche nicht mehr benötigte Dateien nur sporadisch/nie und wäre froh, wenn mir ein Programm diese Arbeit abnehmen würde.

Ja vielleicht, aber nur für unwichtige Dateien.

Nein, ich würde so eine Aufgabe nie einem Programm anvertrauen.

Ich weiß es nicht.

Figure A.54.: Final questionnaire, page five, additional questions, part 4/4

Appendix A. Test Material

Feldtest - Abschlussfragebogen

0% 100%

Weiterverwendung

***Werden Sie tagstore nach Ende des Tests weiterverwenden?**

Ja Nein

***Würden Sie tagstore weiterempfehlen?**

Ja Nein

Warum würden Sie tagstore (nicht) weiterempfehlen?

***Welche Probleme traten mit tagstore auf?**

Bitte wählen Sie einen oder mehrere Punkte aus der Liste aus.

Keine

Probleme bei der Installation.

Probleme bei der Konfiguration mit tagstore Manager

tagstore ließ sich nicht starten.

Programmabsturz.

Sonstiges:

***Ihre Verbesserungswünsche / Anmerkungen / Negatives / Positives bezüglich tagstore:**

Figure A.55.: Final questionnaire, page six, part 1/2

•Ihre Verbesserungswünsche / Anmerkungen / Negatives / Positives bezüglich des Testverfahrens:

Bitte kopieren Sie Ihre Testtagebucheinträge in das folgende Feld!

<< Zurück Absenden Umfrage verlassen und löschen

Figure A.56.: Final questionnaire, page six, part 2/2

Appendix A. Test Material

Feldtest - Abschlussfragebogen

0% 100%

Weiterverwendung

***Werden Sie tagstore nach Ende des Tests weiterverwenden?**

Ja Nein

***Wofür werden Sie tagstore weiterverwenden?**

Bitte wählen Sie einen oder mehrere Punkte aus der Liste aus.

- Downloads
- Projektdateien
- Bildarchiv
- Dateisammlungen
- Musikarchiv
- Sonstiges:

Figure A.57.: Final questionnaire, page six, additional questions, part 1/2

Feldtest - Abschlussfragebogen

0% 100%

Weiterverwendung

***Werden Sie tagstore nach Ende des Tests weiterverwenden?**

Ja Nein

***Warum werden Sie tagstore nicht weiterverwenden?**

Figure A.58.: Final questionnaire, page six, additional questions, part 2/2

Vielen Dank für die Teilnahme an unserem Test!

Sie haben uns sehr geholfen!

Sie können ab sofort so viele stores einrichten wie Sie möchten und sie konfigurieren wie Sie möchten.

Mit freundlichen Grüßen

Ihr tagstore Team

[Antworten ausdrucken](#)

Figure A.59.: Final questionnaire, page seven

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