

Experiences from Employing Evernote as a Tool for Documenting Collaborative Design Processes

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ABSTRACT

In this paper we report from a case study investigating the use of digital tools for documenting collaborative design processes. We employed the note-taking system Evernote in interaction design projects with six teams of students over a period of four months. By observing the use and appropriation of the tool and by questioning participants we strived toward understanding collaborative documentation and communication activities in more detail. Our experiences show that the core functionality of such tools seems adequate for most documentation tasks, but improvements seem necessary regarding support for more informal information management, visualization as well as communication and collaboration.

Author Keywords

Design process, documentation, tool, case study

INTRODUCTION

The documentation of design processes is usually a tedious task that is currently not very well supported by digital tools. However, a systematic and comprehensive documentation of design artifacts, activities and (intermediate) results over the course of a design process may have various benefits. It enables designers to capture design knowledge and to reflect upon decisions for analyzing the rationale that led to a certain outcome. It may also serve as a source of inspiration or reuse when employed across different projects or teams. However, the type of documentation and its effort in maintenance also determine if and how it is useful.

In our research we wanted to explore the use of digital tools for supporting documentation activities. From work of others we know that dedicated tools for the documentation of design processes are rare and often not specialized for the unique characteristics of design practice [2]. For example, the role of physical artifacts and informal information management in design are well documented and considered a key ingredient of successful design practices [3]. However, the material nature of artifacts and also their spatial and situational context are hard to transfer to digital repositories. Regularly, digital photos of design artifacts end up in the hierarchies of file systems, thereby losing many of their characteristics like visibility, accessibility and fluency that are important for potential reuse. However, also traditional practices have their drawbacks, as physical artifacts are hard to archive and share within (distributed) design teams.

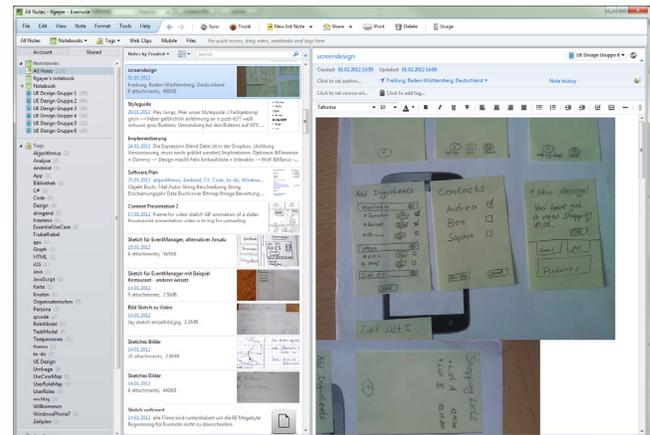


Figure 1. Notes in Evernote can be structured using notebooks, tags, metadata and a timeline with thumbnails.

Evernote¹ is a note-taking software that promises to ease the capturing and archiving of informal information artifacts like notes, lists, ideas, sketches, images or other multi-media files such as video or audio. The Evernote system is centered on a traditional desktop application (see Figure 1) and local storage, but was recently extended for use on different mobile devices (smartphones, tablets) in combination with cloud synchronization and a web interface. Therefore, it now cannot only be used for keeping private notes, but also for sharing notes with a group of collaborators via a cloud service and ubiquitous access. Notes in Evernote are structured using a combination of notebooks (cf. folders), tags and a timeline view. When capturing notes with Evernote clients, metadata such as a timestamp, location, and author as well as modification history is added. Evernote further provides search and filtering functionality for retrieving notes based on their content (e.g. ocr text recognition), metadata and tags. Based on these powerful features, we wanted to explore the usefulness of Evernote for documenting design processes.

CASE STUDY

We conducted an exploratory case study with six teams of students (N=18, 3 students per group) over a four-month interaction design project. The project was embedded into an interaction design course and encompassed an analysis phase (field study & observation), modeling activities (user roles, personas, task models), a design phase (scenarios &

¹ <http://www.evernote.com/>

sketching) as well as a prototyping phase (implementation). Students were free to design an application around certain themes like shopping, leisure and cooking. They were further advised to use Evernote for documenting and sharing their progress in the group. Students met weekly in dedicated rooms but many design activities were also carried out in the field or at home. We did set up premium Evernote accounts for all groups so that participants could make use of advanced features such as notebook sharing and larger uploads. By observing the use and appropriation of the tool and by questioning participants we strived toward understanding collaborative documentation and communication activities. Due to the scope of this paper, we will only briefly describe some findings from the study.

The groups did take documentation seriously; however, this may also be due to the fact that they were also graded based on the quality of their group work. From a post-study questionnaire (N=16) we know that most participants (14) actively engaged in documentation activities. 75% of the participants stated that documentation tasks were equally distributed among the members of the groups and 18.8% stated that coordination regarding the actual procedure of documentation was required. Participants judged the documentation as rather important for their individual work (4.94, SD=1.39, 7 point Likert scale) but more important for sharing results in the group (5.8, SD=1.08, N=15). They mostly agreed that some effort needs to be put into keeping it (3.94, SD=1.24). We were expecting hesitations in contributions due to social factors like evaluation apprehension or social loafing, but surprisingly, the students did mostly share all their individual artifacts (6.38, SD=0.72). This however, may be due to the trust and relationship that the groups did build up during the four month period. The students mostly agreed that they felt comfortable in their group (6.19, SD=1.42). Students stated that they shared digital artifacts (81.3%, e.g. images from Photoshop), TODO-lists (75%), still images or scans captured from paper artifacts (68.8%), questions or claims (56.3%), digital diagrams or models (56.3%), videos (50%), summaries (25%), inspirations (25%) and audio recordings (6.25%).

We found that the documentation was not only used for reflection (93.8%) and reuse of results (75%) but also for specific communication and coordination tasks (37.5%). For example, participants said that they used the shared documentation for distributing tasks within the group and for setting up agendas for meetings. Participants modified the documentation about once a week and typically checked it before meetings. However it was less used during the meetings. Not surprisingly, the use of Evernote alone was not considered sufficient for all coordination tasks, so other communication tools such as Skype and email were used as well as other file sharing tools such as Dropbox and SVN. When asked why Dropbox was used even though Evernote

basically supports file sharing, students said that the sync feature of Evernote did not work quite as well and that it is easier to share a larger number of files with Dropbox. We also explain this behavior due to the fact that only one of the students did use Evernote before and that Dropbox is much more popular among students.

Regarding the different Evernote clients that are available for accessing and sharing notes, participants tried most platforms (50% web, 68.8% desktop, 56.3% mobile) but eventually only used the desktop (73.3%) and web (26.7%) clients. Students noted that the mobile apps were rarely synchronizing and that data was frequently lost due to dropped connections. We also asked our students about the way they managed their documentation with Evernote. Only one group of students used the tagging functionality and found it rather useful (5.67, SD=1.53, N=3). The search functionality was only used by 4 students and had a rating of 5.0 (SD=1.83, N=4). However, we found that such functionality might be more useful for larger collections of artifacts.

CONCLUSION

In this paper we briefly presented preliminary findings from an exploratory case study investigating the use of digital tools for documenting design processes. The presented findings are based on the post-study questionnaire only and we yet have to analyze the collected artifacts. We expect to gain further knowledge from this analysis. Our results indicate that the basic functionality and infrastructure of note-taking software is largely adequate for documenting design processes. We however think that more informal, more physical and spatial information management techniques beyond tags and folders might be necessary. We are therefore interested in exploring novel ways of visualizing and interacting with design process documentations [cf. 1].

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