LiveDeck: Extending Presentations to Support Collaborations

Steven L. Rohall, Andrew Sempere
Collaborative User Experience Research
IBM T.J. Watson Research Center
Cambridge, Massachusetts
+1 617 693 1840
{steven_rohall, asemper}@us.ibm.com

Hironobu Takagi, Tatsuya Ishihara, Shin Saito
Accessibility Research
IBM Tokyo Research Laboratory
Tokyo, Japan
+81 46 215 4557
{takagih, tisihara, shinsa}@jp.ibm.com

ABSTRACT
The goal of LiveDeck is to provide support for small, *ad hoc* meetings. LiveDeck uses slides as the medium for conversation and supports collaborative browsing, synchronous slide edits, and other collaborative features such as note taking. LiveDeck builds upon a web-based ODF renderer, uses Sametime™ 8.5 for communication, and uses the ODF file itself for storage of metadata and distribution of meeting artifacts. In this demonstration, we will show the current state of our prototype.

Author Keywords
Computer-supported cooperative work, replicated application sharing, synchronous collaboration, comet.

ACM Classification Keywords
H5.3. Information interfaces and Presentation: Group and Organization Interfaces – Computer-supported cooperative work.

General Terms
Design. Human Factors.

INTRODUCTION
Current e-meeting tools are designed to support presentations. Presentations are but one of many types of business meetings [6]. Team meetings, in contrast, are collegial and often lead to joint artifact creation (e.g., diagrams, plans). In the past, such team meetings were held in person in an office or conference room. Today, as teams become increasingly distributed, they have tried to use existing tools to support their meetings, often with poor results. We have observed, for example, one team member using Powerpoint™ to take notes while using screen sharing to let others see. However, the remote participants were not able to contribute to the notes; all interaction with the notes was channeled through the single note taker. What is needed is a better way to support these collegial meetings. Our hypothesis is that we can make team meetings more effective by adding collaborative slide editing to the set of tools available to a team.

CSCW 2010, February 6-10, 2010, Savannah, Georgia, USA.
ACM 978-1-60558-795-0/10/02

PROTOTYPE DESCRIPTION
LiveDeck is a system for synchronously viewing and editing slides. The prototype builds upon the observation that people use slides for note taking as on a whiteboard. Slides are ideal for this purpose since they have a good amount of structure (e.g., numbered lists, indentation levels) yet they also allow for non-linear thinking (e.g., text boxes can be placed wherever desired, slides are easily added, moved, and deleted). Once the meeting is over, slides also serve as a meeting record, allowing team members to share their results with those not present.

LiveDeck treats decks of slides as places; people viewing the same deck are in the same place. The prototype user interface can be seen in Figure 1. A buddy list (A) shows who is currently viewing the slide deck. A user can also see telepointers of other people on the same slide (B). A list of thumbnails (C) serves several purposes. First, the thumbnails are updated in real time as people edit the slides, providing awareness of changes being made elsewhere in the set. Second, the thumbnails are used for navigation. In the figure, there are two highlights on thumbnail 10. The larger, gray highlight indicates the user's current slide. The smaller, green highlight indicates the main group's slide. By using the "detach" button (D), a user can detach from the main group and navigate the slides independently. When a user is attached to the main group, slide navigation by anyone in the group will change the slide for everyone in the group. There are basic slide editing capabilities (E) that allow users to make changes to existing slides. Slides can also be added and deleted. Finally, a "sticky note" capability (F) allows people to attach notes to slides. When multiple users are on the same slide, the sticky note feature can also be used like a real-time chat.

LiveDeck is not a replacement for traditional e-meeting systems nor is a replacement for full-featured slide creation software. While a prepared set of slides may be the starting point for a meeting, the goal of LiveDeck is to encourage

Figure 1: Livedeck features – (A) buddy list showing who is looking at these slides; (B) telepointers of users on this slide; (C) live thumbnails of all slides updated when users edit them; highlighting on thumbnail 10 indicates that this user and the main group are both looking at the same slide; (D) "detach" button used to allow slide viewing independent of the main group; (E) basic slide editing tools; (F) sticky note being used as in-place chat.

people to use its basic slide editing tools for brainstorming and planning much the way a co-located team would use a whiteboard.

TECHNICAL APPROACH

At its core, LiveDeck consists of a web-based OpenDocument Format (ODF) [2] editor used to display and edit slide decks. A simple URL that can be emailed or sent via text chat is used to invoke LiveDeck on a particular slide set. Everyone loads the LiveDeck application and the specified slides from the server. Since the ODF files are text- and vector-based, this is efficient. ODF files also provide another benefit—annotations, such as the contents of a sticky note, are stored as metadata in the ODF file.

LiveDeck employs a replicated application sharing architecture [4] where events such as slide changes or text modifications are transmitted among users to keep them synchronized. We use IBM Lotus Sametime 8.5 as our state and event sharing service [3]. Sametime 8.5 uses a Comet approach (XMLHttpRequest with long polling) [1] for providing synchronous events via HTTP. The events are also used to keep a copy of the document state on the server up-to-date. This helps to support both latecomers to a meeting as well as asynchronous use.

CONCLUSION

In this demonstration, we've shown LiveDeck, a new, web-based system that uses slides as the basis for team collaboration. Meetings can start with a set of slides, but features such as independent navigation and slide editing allow teams to use LiveDeck more like a room full of whiteboards and less like a traditional e-meeting system.

In the future, we plan to add additional collaboration-specific features such as voting tools that would support team exercises such as the agile Planning Poker® [5] method and tools for more effective synchronous use such as onion skin overlays on the slides. Finally, we plan to deploy the prototype to conduct user testing of the LiveDeck experience.

REFERENCES

1. Comet. http://en.wikipedia.org/wiki/Comet_(programming).
2. Eisenberg, J. David. OASIS OpenDocument Essentials. Friends of OpenDocument, Qld, Australia, 2005.
3. IBM Lotus Sametime. http://www-01.ibm.com/software/lotus/sametime/.
4. Lauwers, J.C., T.A. Joseph, K.A. Lantz, A.L. Romanow, Replicated architectures for shared window systems: a critique. ACM SIGOIS Bulletin, 11(2-3) April/July 1990, pp. 249-260.
5. Planning Poker. http://store.mountaingoatsoftware.com/.
6. Short, J., Williams, E. and Christie, B. The social psychology of telecommunications. Wiley, London, 1976.
