MessyBoard: Lowering the Cost of Communication and Making it More Enjoyable

Adam M. Fass, Randy Pausch
Carnegie Mellon University
5000 Forbes Avenue
Pittsburgh, PA 15213, USA
e-mail: afass@cs.cmu.edu, pausch@cmu.edu

ABSTRACT

Coworkers often do not communicate as much as they should because communication costs people time and effort and because work-related communication can be unpleasant. MessyBoard is a communication medium that aims to improve collaboration by reducing the costs of communication and making it more enjoyable.

MessyBoard is a persistent, networked 2D bulletin board that users view in a web browser. Mixed media and freeform layout reduce the cost of communication by allowing people to quickly express ideas. The medium makes communication more enjoyable by facilitating playful behavior and allowing work and play to occur side by side.

We demonstrate that using MessyBoard requires minimal time and effort and we present scenarios to illustrate how the medium aids in collaboration. Participants will experience instant communication using spatial layout and mixed media, and they will understand how this can change the way that groups collaborate.

Categories and Subject Descriptors: H.5.3 [**Information Interfaces and Presentation**]: Group and Organization Interfaces–*asynchronous collaboration, computer-supported cooperative work, web-based interaction*

Additional Keywords and Phrases: digital bulletin board, MessyBoard.

INTRODUCTION

People who are working together must communicate to coordinate their efforts. Often, coworkers do not communicate as much as they should. One reason is that communication is costly. For example, composing an e-mail message that precisely expresses a complex thought takes time and effort. Another reason is that work-related communication can be unpleasant. Many workers complain that reading e-mail is tedious and meetings are boring. We have created MessyBoard, a communication medium that aims to improve collaboration by reducing the costs of communication and making it more enjoyable.

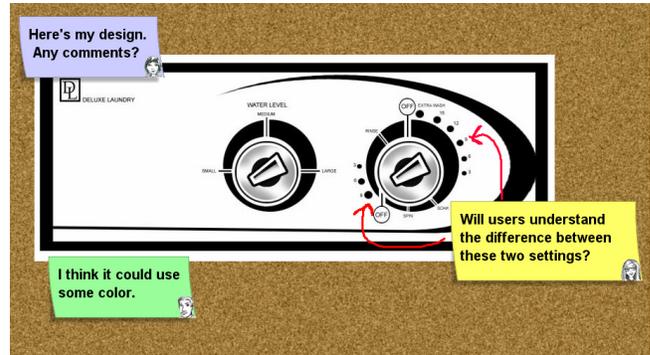MessyBoard provides a networked, persistent two-

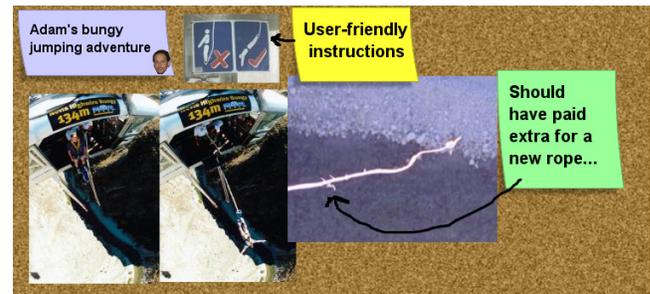Figure 1: Designers use MessyBoard to comment on a sketch.

Figure 2: A user shares vacation photos on Messy-Board.

dimensional space with freeform layout. Users view the space on their own computers and a server keeps everyone's view synchronized. Different groups of users have their own distinct MessyBoard spaces. Users add content using a menu or by dragging and dropping or cutting and pasting from other applications, and they move and resize objects by clicking and dragging. MessyBoard allows users to share text notes, bitmap images, arbitrary files (represented as icons), hyperlinks and freehand pen strokes.

Freeform layout of pictures and notes allows users to quickly express ideas using spatial relationships as shown in Figure 1. Freeform layout may also encourage playful behavior, as shown in Figure 2, and the medium allows work-related and playful communication to exist side by side. The playful communication may encourage people to look at the medium, resulting in more attention to the work-related communication as well.

We project MessyBoard on the wall of a shared work space and display it as a screen saver for Windows so that people see it when they are taking a break or at other convenient times. Thus, an important design constraint is that MessyBoard provides a finite amount of space so that users can see everything at a glance without using a navigation interface.

Our experience with a prototype suggests that clutter in a finite space is a problem, as users are reluctant to delete old content in order to post new material [3]. Rather than adding scrolling, zooming or extra pages we encourage users to delete old material by giving them confidence that it can always be recovered. A simple but powerful history mechanism captures all MessyBoard activity and allows users to travel back in time and recover old information, similar to Rekimoto's TimeScape desktop [7].

An important factor in the adoption of a new communication medium is the startup cost. People may not be willing to invest a lot of time and effort to install a new communication tool. We address this problem with a MessyBoard Java applet that runs in a web browser with any Java virtual machine (version 1.1 or greater). People can use MessyBoard instantly just by typing a URL into the browser. They can e-mail the URL to their coworkers who can use MessyBoard by clicking on the link.

A medium of this form is best understood when people interact with it directly. A written description conveys the mechanics of how the tool works, but when users interact with the medium directly they experience the intangible benefits of instantly sharing information with a group using a simple interface that requires no software installation.

DEMONSTRATION DESCRIPTION
We will demonstrate MessyBoard on a projector, explaining the basic features of the medium and walking through usage scenarios such as commenting on a design sketch, scheduling a meeting and sharing photos. A second projector will display a public MessyBoard space that will be available to all of the conference attendees. People will be able to view it and modify it using their own computers simply by visiting www.messyboard.org/uist.

The MessyBoard server resides at Carnegie Mellon University so the medium will be available to attendees with internet access throughout the entire conference. MessyBoard might also be displayed in the auditorium between sessions, or we could provide a projector to display it in another location. Attendees could use it to share digital pictures, arrange meetings with their friends or make important announcements.

RELATED WORK
Several systems provide a general-purpose persistent networked 2D space with a What-You-See-Is-What-I-See (WYSIWIS) paradigm [5, 8, 9]. MessyBoard differs from these systems in that it provides a single finite space so users can check it at a glance and it reduces the startup cost of using the tool to an absolute minimum.

Netomat provides a shared 2D space with a WYSIWIS paradigm and a Java applet implementation [6]. The Netomat space does not show real-time updates, and users must explicitly post changes and retrieve the latest content. MessyBoard shows all changes in real time, assuring users that they are seeing the latest content and that their changes will not be overwritten by simultaneous activity.

Notification Collage is a collaborative 2D bulletin board system for sharing notes, pictures and live video streams [4]. Notification Collage is not a strict WYSIWIS system: each user can have a unique layout and users can individually show and hide elements. MessyBoard allows users to use spatial relationships to communicate information, while Notification Collage allows users to personalize their own displays and filter information as they see fit.

Wikis [2] and web logs or "blogs" [1] do not provide free-form layout but they do allow users to quickly post content on the web using only a web browser.

We have previously presented a prototype version of MessyBoard [3]. The prototype lacked many features present in the new version, such as file sharing, pen strokes, history and a Java implementation that eliminates the need for software installation. Neither version has yet been demonstrated publicly to the research community in an interactive forum.

REFERENCES
1. Blogger. Blogger. http://www.blogger.com/
2. Cunningham, W. Wiki Wiki Web. http://c2.com/cgi/wiki
3. Fass, A.M., Forlizzi, J. and Pausch, R. MessyDesk and MessyBoard: Two Designs Inspired By the Goal of Improving Human Memory. In *Proceedings of DIS '02 Designing Interactive Systems*, 2002, 303 - 311.
4. Greenberg, S. and Rounding, M. The Notification Collage: Posting Information to Public and Personal Displays. In *Proceedings of CHI '01 Human Factors in Computing Systems*, 2001.
5. Groove Networks. Groove Workspace. http://www.groove.net/
6. netomat, Inc. netomat. http://www.netomat.net
7. Rekimoto, J. Time-Machine Computing: A Time-centric Approach to the Information Environment. In *Proceedings of UIST '99 Symposium on User Interface Software and Technology* (Asheville, NC), 1999, 45-54.
8. Roseman, M. and Greenberg, S. TeamRooms: network places for collaboration. In *Proceedings of CSCW '96 Computer Supported Cooperative Work*, ACM Press, 1996, 325-333.
9. Smith, R.B., Hixon, R. and Horan, B. Supporting flexible roles in a shared space. In *Proceedings of CSCW '98 Computer Supported Cooperative Work*, ACM Press, 1998, 197-206.