Design of Social Interfaces to Collaborative Workspaces
A Position Paper for Changing Places Workshop

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Until recently, the issue of creating places within built environments like buildings and urban settings has been the domain of interest of architects and urban designers. However, with the introduction of new computer-mediated technologies and interest in collaborative systems, new kinds of digitally mediated places are being created: hybrid spaces, virtual spatial places, and space-less places (Harrison 1996).

The key element relating "place" and collaborative systems is the support for social interactions in the digitally constructed places. As designers of collaborative workspaces, we need to be concerned not only about the group work that needs to be supported in such spaces (e.g., shared editing) but also the social interactions that sustain the livelihood of these spaces and thus maintain these spaces as places for collaborative work.

I would like to contribute to the discussion about the needs, requirements, and designs of the social interfaces for collaborative workspaces. Social issues, like technical issues such as security and consistency, are important concerns to designing, using, and evaluating models of workspaces for collaboration. In fact, an understanding of the social issues contributes to the discussion and understanding of technical design issues and solutions.

Insights into the design of social interfaces come from four bodies of work. The first relates to the social issues that arise with collaborative workspaces (Bellotti 1993, Dourish 1993, Grudin 1994, Lee 1997). These studies reveal social issues, not present in traditional single user applications, that we need to identify and understand if we are to be able to design effective and acceptable collaborative workspaces.

The second are commentaries on the appropriateness of comparing digitally mediated communication with face-to-face interactions (Dourish 1996, Hollan 1992). They remind us that the goal of the design of collaborative workspaces should not look at the medium by analogy to another (e.g., face-to-face interactions). Instead, we should look at the medium on its own terms. Hollan (1992) proposes a focus on the needs, medium, and mechanisms that allow us to leverage the strengths of the new medium to meet the human requirements for communication. Another approach would be to provide a flexible environment in the collaborative workspaces that will allow the user community to appropriate and adapt the technology to suit the needs of the community (Harrison 1996). In doing so, Dourish (1996) found that the impact of media spaces expands beyond the individuals and those directly connected by the medium, but also to the larger groups to which the individuals belong (i.e., communal and societal).

Third, Meyrowitz (1985) argues that a key to understanding the impact of electronic media on social behavior is to understand the patterns of access to social information that defines a situation. Until recently, many have assumed that the physical setting (or physical location or physical place) was the determinant of social behavior. However, it is actually the set of social information (actions and behavior) that regulate social behaviors (Meyrowitz 1985). This means that social interface design should focus foremost on the design of the social information system. We can exploit the physical settings as metaphors but only as intuitive frameworks for representing and accessing the social information; the physical settings contain "sets of mutually-held, and mutually available, cultural understandings about behavior and action" (Harrison 1996).

Finally, medium theorists such as McLuhan (1964) have argued that the medium, apart from the content that they convey, can change communication patterns, social roles, and social structures (i.e., important contributant to social change). Similar findings were observed in long-term use of media spaces (Dourish 1996). One such finding was that as the user community of media spaces explored and made use of the technology, a set of emergent communicative practices arose, tailored to the nature of the medium. The other relevant finding was that the use, influence, and importance of media spaces extended beyond the connected individuals, their immediate context and environments to encompass wider social groupings. By providing mechanisms that allow the user community to appropriate and adapt the media spaces, users were empowered with the means to create a sense of "place." This empowerment was not limited only to flexibly shaping the collaborative workspaces but included allowing others who were not directly connected to have access.

At the workshop, I would like to participate in discussions related to the question of how to allow collaborative workspace designers create seeds of social information systems, create visualizations of social information, explore mechanisms that allow the user community to tailor these visualizations, and explore emergent social information and changes to social situation (i.e., changing places)? The questions that will be examined include, but are not limited to the following:

- Is it appropriate to develop a visualization system for envisioning appropriate social information and manipulating the visualizations? If so, what would such a visualization system be like?
- What sorts of social information that are important in the collaborative systems that impart a sense of "place" (i.e., placeness)?
- How do we seed our collaborative systems to allow our users to foster and develop a sense of "place" (i.e., how to endow "placeness" in our collaborative workspaces)?
- What are the user mechanisms that allow the user community to socially construct places out of the seeds we provide (i.e., place-making)?
- Over time, because of evolving needs and because of the evolution of the users' understandings of the nature of the mediated communication and its value, user adaptations to better exploit the medium will occur that lead to "changing places". What are the mechanisms that facilitate changing places?

Obviously, this discussion should not be carried in a vacuum, but need to consider the goals, tasks, environment, and users (e.g., sophistication, frequency of use) to be supported by such collaborative workspaces. I am particularly interested in new forms of collaborations between businesses and customers; particularly consumers. I am also interested in the Web as a forum for exploring new models of collaborations. Finally, I am interested in how collaboration can support and enhance electronic commerce applications (e.g., virtual marketplace and customer care).

My perspective on this topic of social interface design has been influenced by research on:

- NYNEX Portholes to make video-based group awareness tools useful, usable, and acceptable (Lee 1997, Girgensohn 1999).
- New paradigms for collaboration in the area of customer relationship management — particularly the use of Web-based collaborative customer care technology for a business to reach out to customers for customer service, customer support, and sales and marketing (Kobayashi 1998, Wolf 1999).
- New paradigms for collaboration in the area of virtual marketplaces as evidenced by examples like eBay.

The work on NYNEX Portholes has been informative for several reasons. It brought to the forefront the importance of social interface design; particularly, social issues like privacy and control. Also, it highlighted the importance of an appropriate representation for the social interface that conveys the value of video images as a way of providing group awareness. Efforts to recruit users to such a tool revealed the importance of the system in creating the proper first impressions for its potential users. Finally, this work highlighted the need to understand not only the kinds of social information needed to support group awareness task but also the importance of other social information (e.g., being in public, reciprocity) that affect the acceptability of the video-based awareness tool. A by-product of this work has been the development of a new design of the social interface to Portholes (Girgensohn 1999).

My more recent work with exploring new paradigms for Web-based collaboration between customers and businesses has opened up a set of questions of how to design a social interface to a space-less place like the Web. The questions include not only the ones posited above but questions like:

- What are the attributes of metaphors of physical places that are appropriate for conveying social information?
- What are the elements of the metaphor that allow users to have intuitive access to the social information?

- What non-spatial metaphors are useful representations for space-less places?
- What new, abstract forms of representations for space-less places would be appropriate for visualizing and manipulating social information systems?

In summary, to create an effective and acceptable collaborative workspace, we must be cognizant of the kinds of social information (actions and behaviors) and the patterns of access to this information facilitated by our design, by the media, by happenstance and by the user community. I would like to participate in the discussion on the requirements for the development of social interface frameworks to support collaborative workspaces. This should include a discussion of a research framework for investigating the requirements, issues, and techniques for supporting the design and development of social interfaces for collaborative workspaces.

APPENDIX: SOCIAL INFORMATION

Figures 1 and 2 provide examples of social information from two applications (Portholes [Girgensohn 1999] and Customer Care [Kobayashi 1998, Wolf 1999]).

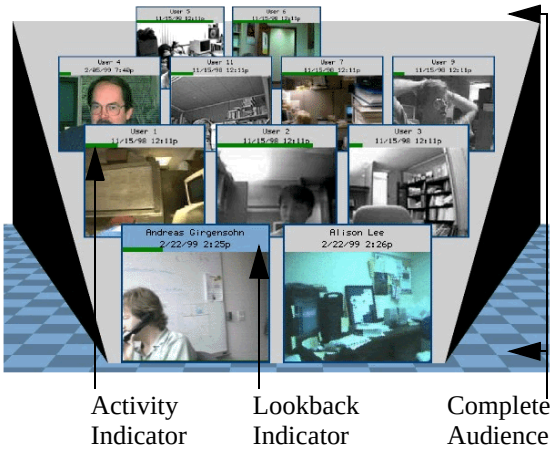

Figure 1: This Portholes (video-based awareness) application allows team members to develop awareness of their group members and group activities. The screen highlights a number of pieces of social information. A theater-like setting provides cues to the user of being public. All team members who can potentially see the user's video image appear in the audience. Team members running Portholes and looking in on the user are indicated by the Lookback indicator (label is colored darker). The activity bar provides a hint of the amount of change between this video image and the last.

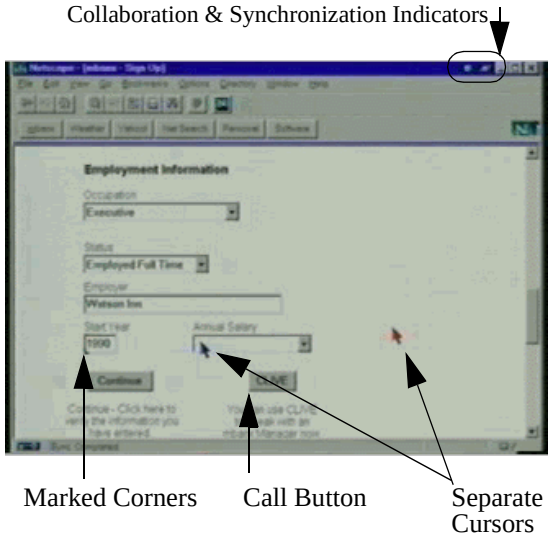

Figure 2: This Customer Care application allows a customers, browsing a business' web site, to initiate a collaborative voice and data sharing session with a call center agent. The screen highlights a number of pieces of social information. A "Call Button" has been included in appropriate places of selected web pages to allow a customer to contact a call center agent for assistance; in this example to fill out an application. During collaboration, indicators, separate cursors and market corners provide both participants with a sense of what each is looking at and what each is doing.

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