

Here and There, Now and Then: Four Views of a Long-Distance Teleworker's 'Workplace'

Thomas Erickson
IBM T. J. Watson Research Center

INTRODUCTION

For the last eight years I've worked as a long-distance teleworker from my home in Minneapolis, first for Apple Computer in California, and then for IBM in New York. In this essay I offer reflections on the nature of my workplace(s), in the hope that they may provide grist for those concerned with providing technological and organizational support for remote workers.

Obviously this is a highly personal and particular account. Nevertheless, I believe that such reflections on personal experience have an important role to play in informing the ways in which the meaning of 'the workplace' is changing under the impact of new technologies. As such, this essay fits into a tradition of examinations of ways in which particular workplaces are shaped by technologies, ranging from a wide variety of studies carried out in the ethnographic tradition (e.g. [8, 9]) to more personal, reflective accounts (e.g. [1, 3]).

In this essay, I work from the macro level to the micro level. I begin with the organization for which I work, and take up the complexities which emerge when I try to answer the question "Where do you work?" While one might think that at least *saying* where one works is a relatively simple matter, I suggest that this isn't so. Next I focus on group workplaces. In particular, I look at the meeting room, and describe an unusual experience attending a meeting via speaker phone. On the basis of this example, I suggest that while places are obviously important, something that is also important — and much more difficult to support — is the way in which collective interaction changes over time within a workplace. Third, I focus in on my personal workplace in my home office. I note that much of my daily activity can be viewed as movement through a trajectory of places, each which provides a different configuration of resources for collective interaction. I conclude with a discussion of my personal experiences with Loops, an online environment under development by my work group, that blends elements of group and personal workplaces.

THE ORGANIZATION AS WORKPLACE

Whenever someone asks me where I work, I feel a slight hesitation as I decide what to say. Even though I've answered the question many, many times, it is interesting to observe how many different answers can be appropriate. These differences suggest that the notion of 'workplace' does many different types of 'work' for its user, forms of work that vary across social and institutional contexts.

Where do I work? I *work at* IBM, a gigantic corporation worldwide in scope, with offices in virtually every major city, and most of the world's nations. (This is the answer

I give to most strangers who are trying, in the most general way, to determine where I fit in their worldviews.)

Where do I work? I *work out of* my home in Minneapolis. (This is what I say to people who know I work at IBM, and that IBM doesn't have a research lab in Minnesota; it reminds them that the "at" in "working at" can be problematic.)

Where do I work? I *work with* a group of people who are located at the Watson labs in New York. (Even though this is one of the places I don't frequently inhabit, this is the answer I give IBM colleagues, because it helps them understand what I do and which social networks and management hierarchies I am likely to be part of.)

Where do I work? My employer, IBM, has an answer different from any of the above. In the corporate database I appear in the Chicago directory, though I do not in fact work there: I am listed in the Chicago directory because Chicago is the closest city to Minneapolis that has its own directory (the Minneapolis sales office is too small to merit its own). A closer examination of my entry shows that I do in fact work in Minneapolis, but in the downtown sales office, to which I have never been. This would be an amusing fiction, except that corporate attorneys sporadically send mail to that address, to the bewilderment of the Minneapolis mail room personnel who don't know of me. At one point, I tried to change this, thinking that it would be good if the database entry corresponded to reality, showing me to be "at" Watson. After some effort the change was made, and I was moved (conceptually) to New York and to Watson. All was well until I noticed that my payroll taxes were being withheld for New York. It turns out that the database has a single field that is used to determine both 'where' I work for corporate purposes, and where I live for tax purposes, thus reifying an incorrect assumption about my life.

Where do I work? As far as the government is concerned, I *work in* Minnesota since I reside there over 75 percent of the time. I found this dilemma — whether to run afoul of the government and tax authorities, or whether to be a bit inaccessible to the corporate lawyers — easy to resolve.

So now, as far as the corporate ontology is concerned, I am listed in the Chicago directory as working out of the Minneapolis sales office, where I've never been, so that my taxes can be properly withheld for Minnesota for my work with people in New York. Only my phone and email information is correct. This perspective on workplace feels like something in the cubist style.

GROUP WORKPLACES: MEETINGS

I now shift my focus from the macro view of the organization as a whole to what is, perhaps, the canonical interactive state of the organization: the meeting. Meetings are the lifeblood of the organization, and the rationale for much of the travel by organization members, as well as the focus of much energy among those collocated. For similar reasons, the use of technology to support meetings among remote participants has been the subject of intense interest among both technologists and practitioners. In what follows, I suggest that the common understanding of what a meeting is a bit too narrow, at least in the ways that it has been used to design and deploy technology for meeting support.

The following account, recorded not long after the event, describes a meeting I attended several years ago. Although its circumstances were unusual, I suggest that what this story reveals is typical of most meetings.

I 'attended' a special meeting with about two dozen people. I was attending via speaker phone; all the other attendees were together in the meeting room. Because it was a relatively large meeting, the meeting was run formally. It had a moderator who called the meeting to order, established an agenda, and guided the meeting through the agenda to its conclusion.

As a consequence of the size and structure of the meeting, the amount of time that anyone was able to speak was limited, the result being that nobody got to say everything they wanted. After about two hours the meeting approached its scheduled end, and the moderator prepared to bring the meeting to a close. At this point, as an experienced remote attendee, I would normally speak up and say 'thanks for calling', and then everyone would chorus 'good bye' and I'd hang up. Or the moderator would initiate this exchange, and the same thing would happen. However, this time, I missed my chance to jump in, the moderator forgot about me, and the meeting ended with me still 'there' on the speaker phone.

What happened next was fascinating. When the meeting 'ended', everyone burst into conversation. After all, the participants had been saving up things to say for two hours. I had an especially nice vantage point because the meeting's speaker phone was quite sophisticated — it had directional microphones that would home in on the person speaking. It had apparently not been designed to cope with multiple simultaneous conversations, and it was shifting from one conversation to another every few seconds. I was getting a snatch of conversation here, and a snatch there — it was like having an out of the body experience at a cocktail party. Interestingly enough, because I knew all the people and issues, I could actually guess at a lot of what was going on. even

though I heard only a few seconds of each conversation: People were arranging private meetings, clarifying positions, apologizing, consoling, etc. It struck me that this "after-meeting" part of the meeting was incredibly productive — a lot of "conversation potential" had been built up during the meeting, and only now was it being realized.

There are two points to make here. The first point has to do with the issue of what a meeting really is, and when it actually begins and ends. I suggest that it may be more fruitful to take a larger view of what a meeting is, to look at it as an extended group interaction which has several phases of interaction that vary in their degree of structure and formality. That is, while it was important that people came together in a particular place, and while it was useful that that place provided a particular configuration of resources (a table, whiteboard, private room, speaker phone, etc.), it seems to me that what was more important was the interactive trajectory of the meeting.

That is, temporally and spatially, a series of phases happened:

- People converged on the meeting room; perhaps some participants encountered one another on the way or outside the room and paused to chat in the hall.
- Those who arrived before the meeting started found themselves in a room with others with a few minutes to pass. Perhaps they engaged in casual conversation, such as introducing themselves to those they hadn't met, or catching up with acquaintances; or perhaps they informally prepared for the meeting, chatting about the proposed agenda or goals, or floating ideas that they intend to put forward in the meeting proper.
- At some point the meeting 'starts.' In addition to this being the point where remote participants are normally 'brought in,' it is, more generally, the point at which constraints on collective behavior come more strongly into play. That is, people are now discouraged from having side conversations with one another; a moderator controls the floor, allotting turns to speakers and moving through a publicly displayed agenda; and so on. These, and other constraints, are what aid the group in making progress on its collective business.
- At some point the meeting 'ends.' Remote participants are 'disconnected,' and the collocated participants depart more gradually, perhaps lingering in the room to take advantage of the relaxation of interaction constraints to talk with one another, and to have semi-private discussions about what occurred.
- The participants disperse. Those headed in the same direction may walk together, chatting as they proceed; others may grab coffee or lunch with a colleague, availing themselves of an opportunity for a private chat. Finally, once they return to their individual offices, they may fill in neighboring colleagues regarding what happened.

It seems to me that it is this entire trajectory — a gradual coalescence, a period of constrained, semi-formal public interaction, and then a relaxation of constraints and a transition to more private interactions — that is important in making the meeting useful. That is, for the face to face participants, the meeting accomplishes both its formal objectives, but also provides a fertile venue for informal meetings, opportunistic information exchange, and below-the-official-radar exploratory conversations. This occurs because the meeting is held in a spatial environment that comprises not just the meeting room, but the surrounding hallways and other resources. It is the movement within this workplace, over time, that contributes to shifts in the interactive possibilities available to the collocated participants. The remote participants, on the other hand, are unable — or at least handicapped — in their ability to participate. They are stuck, unable to move around either within the meeting room, or beyond, and thus can't take advantage of the informal, more private interactions that occur on the meeting's temporal and spatial boundaries.

This brings us to the second point, which is that neither the technology used to support the meeting, nor — at least in my experience — the work practices that have grown up around supporting remote attendance at meetings, acknowledge this more extended notion of meeting. For me, and for anyone who attends meetings via phone or other forms of digital mediation, meetings take on a digital — that is, an on/off — quality. One moment everyone is 'there', the next moment, everyone has vanished. I typically miss the gradual gathering of people in the meeting room (typically people wait to start the call until the meeting is ready to 'start'), and I miss the conversation afterwards, whether it be the synchronous burst of multiple conversations that occurred in this case, or the more usual semi-private chats that occur as people leave their seats, or find themselves headed in the same direction through the hallways.

Some of these problems can be addressed by altering work practices. Collocated colleagues can, in fact, call up remote participants before the meeting starts so that they can participate, at least partially, in the coalescence phase. Similarly, remote participants can call others privately after the meeting to discuss its events. However, note that this lacks the *ease* of engaging someone in a face to face conversation; it is not just a matter of it being less *work* — it also has a *social* component. Often the ability to feign casualness or to pretend that one has no agenda is important in engaging in the negotiations of which daily life is comprised [7]. Such pretenses are more difficult to maintain if one must begin by placing a phone call.

Regardless of how clever people are in adapting their work practices, the crux of the matter is that today's meeting support technologies are tuned to supporting public, group interactions. When the interactions shift to smaller scale, opportunistic, semi-private interactions, remote participants (if they are even 'present') are unable to engage in the subtle signaling involved in 'recruiting' participants into an impromptu subgroup (e.g. [6]). Even if, somehow, remote participants were able to recruit a group of conversants, neither speaker phones nor video

conferencing technology lend themselves to supporting a semi-private conversation. With current meeting support technologies, the remote participant's only option for participating is speaking to the entire room.

I suggest that any new conception of the workplace needs to account for situations like this. That is, while "place" is of clear importance in supporting work, I suggest that the notion of interaction trajectories, sequential changes in the forms of collective interaction over time, is of equal importance. These shifts in interaction genres are modulated both via social convention, and by movement within the workplace which shifts the physical and social resources for collective interaction. And it is not just that different interactions should be supported; rather, what is important is sequences of interactions, where one type of interaction prepares the ground for another that follows it. While it is clearly a challenging task, it does not seem impossible to think in terms of designing meeting support technologies that might adapt to an interaction trajectory that ranged from private or semi-private conversation to public interaction and back.

PERSONAL WORKPLACES: THE OFFICE

It might be assumed that as a teleworker who works out of his home, I work primarily in one place. That is not the case. I do travel to New York once or twice a month, which means that I work (1) in the airport, (2) in the airplane, (3) in the hotel where I stay, (4) in my private office, and (5) in the shared space that serves as a studio and lab for my group. However, even if we bracket off travel, I still work in many places at home, exhibiting behavior that Bellotti and Bly [2] refer to as "local mobility." They observed, in a study of workers in a design consultancy, that employees were often not at their desks, but were instead frequently on the move — at a co-worker's desk, in a meeting, in the model shop, or at the copier — pulled by the demands of collaboration or the availability of a scarce, centralized resource.

Like the workers Bellotti and Bly studied, I too am frequently on the move; unlike them, my mobility is driven as much by an impulse to seek solitude for individual work as it is by the pull of collaboration. Whereas the need for scarce resources and collaboration pulled Bellotti and Bly's workers *away* from their desks, it is primarily those needs that pull me *to* my desk when I am remote. My desk is my communications nexus, where phone, fax, email and a variety of other computer-mediated channels converge; and the adjacent drawers, bookshelves and files provide nearly all the physical resources I need. Even as it provides resources, my desk is a source of interruptions, with phone calls, email streams, and online chat providing distractions from focused activity. Thus, I often find I seek out other places, either elsewhere in my house (the sunroom or front porch) or in nearby cafés, where I can retreat to work in solitude on tasks such as reading, editing and writing.

One consequence of this is that I organize my work activities with different places in mind. Typically, I 'save up' particular tasks for certain situations and environments. Thus, I often 'schedule' tasks like reading

papers, editing or reviewing manuscripts, or organizing email for situations in which I am out of contact — for example, when I am in a cafe. Other tasks, such as conversations about particular projects with co-workers, though they can in principle be done remotely, I tend to ‘save up’ for face-to-face interactions when I travel to New York. I also try to schedule activities that don’t fit into the customary definition of a task. For example, when I worked at Apple, I used to schedule time on my infrequent visits to Cupertino to wander around the halls, the goal being to have chance encounters and opportunistic conversations.¹ Finally, in an echo of my earlier remarks about interaction trajectories, I often schedule sequences of activities: for example, I may schedule the task of reading a colleague’s paper for the plane trip to New York, in preparation for a meeting with her which, in turn, is in preparation for a larger meeting.

My movements from place to place are a complex blend of responding to communicative or collaborative pulls — e.g. phone meetings that require me to be present at my desk — and personal efforts to seek solitary time or a change of scene. In a sense, I am trying to achieve, by movement through and around my home, the sorts of interaction trajectories that I described in the previous section. Thus, first thing in the morning I go to my office and check email, to see if the day’s structure has been altered; then I may move out of range of the desk — to the front porch or a café — to accomplish some solitary tasks before my colleagues are active (I am an early riser); mid-morning finds me at my desk, because that is when many of my co-workers are present and active in the shared online workspace that my work group uses as a meeting place for both casual and focused interaction. And so on. From my point of view, the vision of a “ubicom” world, where I can have equal access to communicative resources wherever I am, is actually not very attractive. While I like the idea of not being too far away from such resources, I like, as well, the ability to ‘step out,’ or to be unavailable, and I structure my day, in part, to ensure that such workplaces are available to me.

VIRTUAL WORKPLACES

In addition to physical places, I also spend time in a virtual workplace. This is an online chat-like environment for workgroups known as Babble ([4, 5]) or, in its new incarnation, Loops. Here I shall refer to Loops, since it is now² the environment in daily use by my work group; however, most of the usage phenomena described here originated in Babble and have only been empirically documented in that context.

¹ I have not continued this practice. I knew a much larger set of people at Apple, having worked on site for five years before becoming a remote (whereas, at IBM, I was a teleworker from day one). Also, most Apple employees were centrally located, whereas at IBM, the smaller number of people I know are distributed across several buildings.

² Loops has been in daily use for about the last month, as of this writing.

Three features distinguish Loops from chat systems. First, in Loops, conversation persists: comments typed by participants stay around forever, so that Loops supports both synchronous chat, and asynchronous discussion. Second, Loops uses a “social proxy,” a minimalist graphical representation that shows the presence and level of activity of participants. The social proxy (figure 1) consists of a large circle that represents a room or conversation, and small colored dots called “marbles” that represent participants. Participants whose marbles are shown inside the circle are in the same room; those whose marbles are outside the circle are logged on but are in other rooms. Finally, when a participant is active in Loops (meaning that they type a comment, or interact with the user interface in other ways), their marble moves to the center of the circle; it gradually drifts out to the periphery as they do nothing. So, in Loops, a conversation with several active participants is depicted as a cluster of dots at the center of the circle (as in the two marbles at the center of the circle in figure 1). The third feature that distinguishes Loops from chat systems also distinguishes it from Babble: Loops allows users to edit and display static text in ‘bulletin boards’ and ‘tabs’ in each room; these are used to provide individual and collective resources such as personal or group schedules, announcements, to do lists, and so on.

Loops serves as a virtual workplace in which workgroup members ‘hang out’ and engage in interactions that range from social chat to work-oriented discussions. Typically, group members log on to Loops soon after they arrive at work. Over several years of usage (first of Babble, now of Loops), a custom has arisen of saying ‘good morning’ and engaging in social talk and banter. Thereafter, conversation may segue into work-oriented talk such as discussions of upcoming events, questions directed to individuals, and efforts to coordinate activity such as verifying phone meeting times. In addition to such exchanges, which tend to be synchronous or semi-synchronous, people also contribute to asynchronous conversations going on in (usually) more topic focused rooms (e.g. comments on bugs and general design issues for Loops are reported in the “bugs and issues” room).

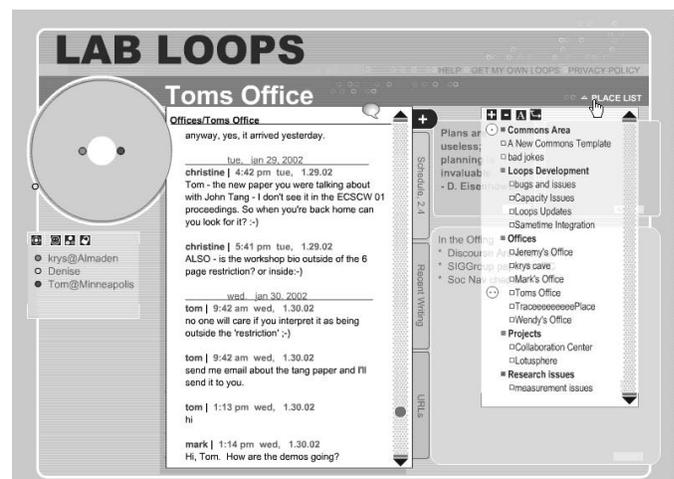


Figure 1. The Loops interface with 3 participants; 2 actively participating in the current conversation; 1

Besides serving as a gathering place, users have also created individual ‘offices’ in Loops. Offices serve as places where their ‘owners’ can post personal information such as schedules, URLs, to do lists, and where others may leave notes, or find such information. As has been noted in other virtual places (e.g. Schiano’s study of LambdaMOO [10]), members may spend considerable time by themselves in their personal offices. In my case, spending time in my online Loops office (versus more populated areas) mirrors my reasons for moving about my physical workplace: an effort to modulate my availability and the number of interruptions I receive. While anyone can enter my office to speak with me, or use other Loops communication channels, the design of Loops (which uses background sounds and visual cues to signal activity in the current room) means that incidental interruptions are less likely to occur in less populated rooms.

CLOSING REMARKS

In this essay, I’ve discussed some of complexities of the notion of “workplace” as they appear from the viewpoint of a teleworker. I’ve looked at “workplace” from four perspectives.

At the organizational level, it is clear that the notion of where one ‘actually’ works can shift quite radically, depending on the needs and aims of the different institutions that have a stake in the work. It feels to me as though I am embroiled in a sort of ‘corporate cubism’, so that ‘where’ I work consists of a number of contradictory perspectives that need to be resolved relative to the audience to which I am speaking. At present, institutions do not seem equipped to cope with the complexities of remote or mobile workers.

In working with groups, I am struck by the importance of shifts in, and sequences of, styles of collective interaction. This is something that physical workplaces, such as the meeting room and its surrounding spatial environment, excel at supporting. We are accustomed to using physical spaces, and the social norms and behaviors associated with those spaces, to modulate our interaction styles. This is something that today’s meeting support technologies are quite bad at, typically being confined to a single place in a single space, and often tuned to supporting either public or private interactions, and lacking the ability to move along the continuum of public-private interaction that physical space supports.

At the personal level, it is interesting to note the degree to which I am locally mobile [2], and that, contrary to the collocated employees that Bellotti and Bly studied, it is the need for collaboration that pulls me to my desk, and the desire for solitary, uninterrupted time that pulls me away. Whereas physical, group workplaces support interaction trajectories within their bounds, I tend to move about and beyond my workplace in performing my interaction trajectories.

Finally, I describe the virtual workplace under development by my group. Although it is by no means as flexible and powerful as a physical workplace, it is interesting to see that the same theme — that of moving

about to modulate ones availability to collective intereraction — is still present.

In the long run, it is not clear to me how useful the notion of “workplace,” as a singular spatial entity, really is. It seems to me that the activities of teleworkers, ordinary workers who travel a lot, and even collocated workers who exhibit local mobility, are shaped as much, if not more, by the paths they traverse and the corresponding shifts in the possibilities for collective interaction, than by any particular location.

REFERENCES

- [1] Adler, A. and Henderson, A. A Room of our Own: Experiences from a Direct Office-Share. *Human Factors in Computing Systems: The Proceedings of CHI’94*. Boston, MA: ACM Press, 1994.
- [2] Bellotti, V. and Bly, S. (1996). Walking Away from the Desktop Computer: Distributed Collaboration in a Product Design Team. *Proceedings of CSCW ’96*, 1996.
- [3] Bellotti, V. and Dourish, P. Rant and RAVE: Experimental and Experiential Accounts of a Media Space. In *Video-Mediated Communication* (eds. K.E. Finn, A.J. Sellen, S.B. Wilbur), pp 245-272. Mahwah, NJ: Lawrence Erlbaum, 1997.
- [4] Erickson, T. & Kellogg, W. A. “Knowledge Communities: Online Environments for Supporting Knowledge Management and its Social Context” *Beyond Knowledge Management: Sharing Expertise*. (eds. M. Ackerman, V. Pipek, and V. Wulf). Cambridge, MA, MIT Press, in press, 2002.
- [5] Erickson, T., Smith, D.N., Kellogg, W.A., Laff, M.R., Richards, J.T., and Bradner, E. (1999). Socially translucent systems: Social proxies, persistent conversation, and the design of Babble. *Human Factors in Computing Systems: The Proceedings of CHI ’99*. New York: ACM Press, 1999.
- [6] Goffman, E. *Behavior in Public Places: Notes on the Social Organization of Gatherings*. New York: The Free Press, 1963.
- [7] Goffman, E. *Interaction Ritual: Essays on Face to Face Behavior*. New York: Doubleday, 1967.
- [8] Heath, C. and Luff, P. *Technology in Action*. Cambridge: Cambridge University Press, 2000.
- [9] Luff, P., Hindmarsh, J. and Heath, C. (editors). *Workplace Studies: Recovering Work Practice and Informing Systems Design*. Cambridge: Cambridge University Press, 2000.
- [10] Schiano, D.J. and White, S. The First Noble Truth of CyberSpace: People are People (Even When They MOO). *Human Factors in Computing Systems: The Proceedings of CHI’98*. New York: ACM Press, 1998.