Collaborating *Within* – not *Through* – Email: 
Users Reinvent a Familiar Technology

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**ABSTRACT**
We usually think about email as a single-user application that allows people to communicate *through* their email with other users. The people in our study used email differently: as a locale for collaboration *within* the same mailbox. We describe two ethnographic studies. The first study examined how executives and assistants shared the executive’s mailbox. The second study examined how larger teams or groups shared a single mailbox to conduct a work operation. These studies illustrate reinvention of technology by users, and argue for increased flexibility in email tools.

**Keywords**
Email, collaboration, reinvention.

**INTRODUCTION**
Many papers have studied the role email plays in people's work and personal lives, the methods they use to manage and organize mail, and the problems people face from ever increasing volume and overload. In these studies, email is viewed as a tool for communication and collaboration, generally in support of some other task or activity.

For example, Whittaker and Sidner [12] looked at how people deal with the mass of mail they receive. Sproull and Kiesler [10], among others, discussed the organizational impact of email use. Bälter [2] studied and modeled some of the mechanisms people use to organize their mail. Recently, Ducheneaut and Bellotti [4] have described the way email has become a “habitat” in which most work is done, with many people “living in their email.”

**COLLABORATING WITHIN EMAIL**
These studies contributed to an understanding of how email serves as a tool for communication and collaboration within organizations, but they do not focus on the situation in which email itself is the object of the collaboration. Such situations exist in several contexts: Executives and assistants who share access and responsibility for the same mail file; customer care centers that serve as a single-point-of-contact for customer inquiries; functionally designated aliases to employee assistance mailboxes or published corporate officers’ mailboxes; professional associations; educational institutions; student organizations; and museums.

We studied several of these contexts through ethnographic interviews. For the executives-and-assistants study, we conducted semi-structured interviews with sixteen assistants to high-level managers and executives in a large technology corporation. For a
group-inbox study, we conducted ten interviews and two site visits with managers or officers of larger work groups that maintained group mailboxes.

**Executives and Assistants**

Our study of executive-assistant teams revealed numerous ways in which assistants aided with the executive’s email, including adding related or contextual information to a message, filtering messages, bringing important messages to the executive’s attention, highlighting issues requiring action, responding on the executive’s behalf, and printing and filing messages (see also [6]).

Throughout the study, we were struck by the way features of email that had been developed for the single user were exploited to support collaboration between assistants and their executives. A feature allowing received mail to be edited was used to communicate additional information about a message, or to report on how an issue had been disposed. Messages were forwarded between executives and assistants as a way of drawing attention to them, and to discuss how they should be handled. Folders were used by some executive-assistant pairs not only as a way to categorize messages for filtering or storage, but also to indicate desired actions in a way approaching an ad-hoc workflow. For example, the executive would place an item they wanted printed into a folder marked “Print”. The assistant would print the message, and then remove it from the folder or place it in a folder marked “Done.”

**Group Inboxes**

The group inboxes we studied took several forms. In some cases, they were actual email inboxes with published addresses (e.g., the name of a student organization). In other cases, they were published aliases to an internal mailbox (e.g., an association’s single-point-of-contact). In many cases, they were mailto links on a webpage that sent email to a programmed inbox (customer care, educational institution, published officer address). In two cases, they were aliases for entry points to a workflow-like database system (customer care, internal employee assistance). In all cases, the emails were read and processed by a team of users who shared the mailbox and the work with its contents.

Identity was a crucial feature of group inboxes. Several companies used a group inbox as a single-point-of-contact to their customers. Some companies had elaborate internal methods to insure that outgoing emails were sent “from” the published email address. One student organization carefully sent emails “from” its organization’s mailbox, reasoning that corporate sponsors and recruiters would not recognize the name of individual students, but would recognize the familiar name of their organization.

Assignment of work, and management of work were important aspects of usage. Several sites had working conventions to insure that a single message would be worked on by only one person. However, most ways of assigning work involved removing a message from the primary view of the shared inbox. This made it difficult to track and manage the messages, especially for companies that maintained goals of timeliness (e.g., “all messages will receive a response within four hours”). Several sites said that they were “struggling” with how to organize their messages – by client, by topic, by date, or by respondent. Follow-up on messages forwarded to other employees (e.g., referrals to subject matter experts) were similarly difficult to manage.

“Boilerplate” or “canned” text (previously prepared message text) was used by several of the customer-care groups. Management of this material was problematic: Some sites d-
allowed any employee to originate this text, and to share the text with other workers. Other sites had exacting quality-control procedures before proposed text was approved for distribution to customers (see also [8]).

**EMAIL AS A SITE OF REINVENTION**

These accounts are examples of reinvention by the users of existing features of email. Reinvention occurs when users discover new, unanticipated uses for existing technologies. In our study, users treated message lists as performance reports, comment fields as instructions, mailboxes as identity statements, and folders as action-requests or status indicators. By turning the technology to new purposes, they “reinvent” it in usage, even if they do not change its internal functionality. This concept has been important in HCI and CSCW studies of group decision support systems [3], telephony services [1], and IT adoption [9], informed in part by earlier research from social studies of science (e.g., [8, 11]). Reinvention has also been a theme in users’ repurposing of technology in the participatory design tradition [5].

When we consider our findings through the lens of reinvention, we see typical evolutionary cycles. As Bikson and Eveland note, “Successful technologies are usually those that can achieve reciprocal adaptation with the social organization” ([3], p.436). Our informants were in various stages of adapting the technology to their work practices (subfolders, workflows, special forms of forwarding, report-generation), and of adapting their work practices to the technology (assignment of incoming traffic, work-arounds to achieve a common “from” address, social protocols to track assignment to subject matter experts). As we consider improvements to email, we will be mindful of the need to support this dialogue between technology and use. As Bikson and Eveland conclude, “Without invention, there are no tools. Without reinvention, there are no uses” (p. 437).

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**REFERENCES**


