

• Social Information Matters!

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ABSTRACT

In this position paper we argue that PIM applications can benefit from making use of social information. More specifically, based on our research focusing on email, we have seen that two concepts can help people interact and manage email: 1) organizing information by people and 2) making use of the social history of correspondence. We describe our experience with SNARF, the Social Network and Relationship Finder and comment more broadly at ways that "person-centered" can be a valuable way to structure and retrieve personal information.

Biography

All three authors are researchers in the Communities and Technologies Group at Microsoft Research. They have been working on the designing and building the SNARF project, a tool intended to help organize email data as a part of an email triage strategy. Fisher (attending author) has done research in social network analysis over email and other forms of online conversation; his dissertation work from UC Irvine focused on the use of social metadata and social networks for understanding patterns of collaboration.

1. INTRODUCTION

Email is perhaps the single most important communication medium for many organizations. There are a number of aspects of email that allow this to occur: at simplest, the ease, speed, and economy of sending email has driven its popularity. The persistence of email, however--the fact that it can be archived, indexed, and re-found, have helped turn it into as a locus for handling PIM [1]. Yet this same convenience can make for email overload: the need to handle more incoming email than time is available to handle it.

The presence of the email archive becomes useful for a second set of purposes: it provides a context to messages. Messages do not stand in isolation; as we have previously argued [3], messages are inextricably linked to other messages in the archive, as well as to documents and artifacts in the user's workplace. That is, a message to or from a correspondent implicitly carries with it a

context: why was this message sent? What is it clarifying, or asking, or assigning?

One of the clearest ways to answer this question is to know who sent the message. A message from your spouse carries different meaning than a message from a co-worker, or a long-lost friend, or a library. We argue here for two concepts: that in organizing and approaching their personal information, **people are a logical grouping**, and that **social history matters**.

We attempted to explore these two concepts using a tool called SNARF. SNARF, the Social Network and Relationship Finder, was designed to be targeted specifically at one phase of email: that of email triage. While some have argued [1] that email overload is caused by an excessive number of pending known tasks in a mailbox, we are particularly interested in a slightly different task: the way that users handle an excessive number of pending unknown messages (some of which may turn into tasks). We are designing for situations with many unread messages and little time. Following [4], we refer to the process of repairing this mismatch as "email triage", and examine ways that making social history and social grouping visible can help with the triage process. The design of SNARF has been discussed in previous work [2,4,5]. We focus here on how SNARF groups people and sorts them based on their history of correspondence.

2. PEOPLE ARE A LOGICAL GROUPING

We begin by examining in more detail the notion of using "people" as a logical grouping. There is value in interfaces that present people as first-class objects: systems should allow users to organize, display, and list information by the people involved in that information, not merely as "sort by name", but rather to have portions of interface dedicated to each person.

This is the approach taken in both ContactMap, which presents an interface of personal photographs, and in SoyLent, which leverages the social networks implicit in listing multiple people in a To or CC line [3]. Both of these are people-oriented front-ends over personal information systems.

In [4], we found that users often would search through their unread email first looking for particularly important, or unimportant messages, and that message importance was linked closely to the people who sent the messages. We designed SNARF to present mail organized by person, and organized around their social history. SNARF presents a list of people, rather than messages; it orders these people based on the history of communication between the recipient and sender. By bringing messages from frequent correspondents to the fore, we believe

SNARF allows users to more easily locate relevant messages especially when pressed for time. As such, it reflects the advantages of a multi-pass strategy without requiring users to repeatedly scan their entire inbox.

Figure 1 illustrates the main screen of SNARF; this view shows all of a user's unread mail, grouped by correspondents. Next to each name is the number of recent unread messages in the mailbox from that person. The screen also shows SNARF separating messages by whether they were directed to the user simply arrived in the mailbox. In Figure 1, for example, we see that the user has two unread messages from Brian Evens, and one from Sam Tang, all of which came directly to the user. Clicking on those messages will open them in the users' email program, and mark them as Read; they will then disappear from this view.

3. SOCIAL HISTORY MATTERS

The second critical aspect of our design is that of maintaining and displaying social history. In general, the notion of 'social history' is one of keeping knowledge of whether a person has been seen before. This goes hand-in-hand with the idea of keeping people as first-class objects, of course: those people now carry with them past interactions.

Names without histories rely on the user to sort out, and can thus provide either too much, or too little information. For example, many email clients provide access to an entire Global Address Book—scores of thousands of names—as a way to look up typed names. Isn't it far more likely that the user intends to interact with past colleagues?

Many mail clients do not clearly distinguish between persons who are familiar, and those who are not. Those that do leverage a Contact List or Address Book, which provides one bit of data: "yes, the user has stored this name before." Thus, providing information about who people are is a valuable task. While it

might be desirable to have a broad and complete social history, naming all offline conversations and in-person interactions, it certainly doesn't seem excessive to help recall what email contexts the person has been seen in.

In Figure 1, SNARF illustrates the social history subtly, by ordering the names on the list: the user has sent mail more frequently to people at the top of the list than the bottom. Thus, for example, the user has never sent email to Melinda Sewell, and so her name appears in gray; the user has sent more mail to Brian Evens then to Sam Tang, and so Brian's name is highlighted more vividly.

While these views are configurable, this overview provides a sense of how this perspective can be implemented. Note that this display shows very little information about the specific messages, and instead concentrates on the correspondent. This brief overview allows users to make quick decisions about what conversations they want to check on first.

4. HANDLING AND DISPLAYING SOCIAL METADATA

We step back for a moment to try to generalize from here. There is more to PIM than email triage—fortunately, there is more to SNARF than email triage, too. Our field deployment [2] showed that SNARF can also be useful for email awareness: a different phase of email handling.

In research that some of us have conducted [3], we have suggested that understanding temporal rhythms and social networks within email can help understand social roles, not necessarily just within email but in the workspace generally. We propose that adding social histories to PIM tools is a valuable way of tracking this information. While the specific ways of accessing and portraying that history is likely to vary between applications, it is clear that a socially-oriented database is a critical tool for storing this information.

Sadly, no current PIM tools organize information in a way that is oriented around people. In order to accommodate this task, we are developing "Nick." Nick is the functional core of SNARF: it collects email messages, sorts and aggregates message headers, and maintains an up-to-date a database of email metadata. It also provides an API to allow other applications to easy read, send, and file email. This tool can be harnessed for a variety of applications:

- Tools like SNARF and SNARF Views [6] can use the database to directly show and visualize email
- Desktop search tools can access personal histories, and so can use personal history as a relevance factor.
- Other PIM tools can both seed and retrieve information from the database. For example, a document received from one person, edited, and sent to another might generate records linking those people to the document.
- Last, researchers can gather broad, reliable, and consistent data about email use, allowing them to design more sophisticated systems.

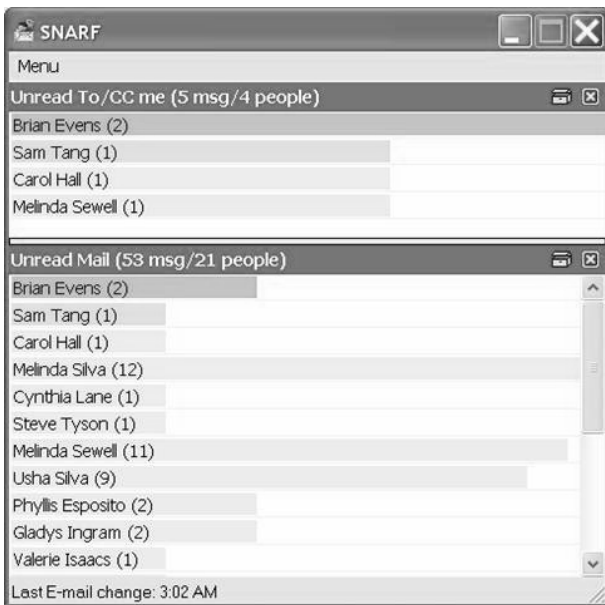


Figure 1: The SNARF Display

5. CONCLUSIONS

In conclusion, we argue in this paper that orienting design around accommodating and visualizing social metadata—that is, people—is a valuable perspective. In order to accommodate this design, systems need to find a place to store social history information. The Nick database is designed to accommodate many of these needs, and may allow designers to successfully **orient information display around people**, and **present and utilize social history**.

6. ACKNOWLEDGMENTS

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