

INSTANT MESSAGING AND PRIVACY

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ABSTRACT

We conducted in-depth interviews with experienced users of Instant Messaging (IM) systems, focusing on privacy issues. We found that IM users share three main privacy concerns: privacy from non-contacts, privacy regarding availability, and privacy regarding the content of IM communication. One important driving force behind an individual's desire for privacy in the context of IM seems to be the desire to control how one appears to others. We suggest that designers of IM systems empower users to monitor and manage the impression they project towards others through IM by providing modifiable policies and settings with suitable defaults and seamless interaction.

Keywords

Instant Messaging, IM, Privacy, Collaboration, Chat, Computer-Mediated Communication.

1. INTRODUCTION

Recent years have seen a steady rise in the use of instant messaging, at home and at work. More and more employers seem to be shedding the previously held image of IM as somewhat frivolous, and encouraging its use in daily work practices [2]. With its awareness mechanisms and lightweight interactions, IM serves as a powerful collaboration as well as social tool [1, 2, 3, 4]. At the same time, IM raises various challenging issues regarding privacy [6]. In most studies involving IM systems, privacy issues are typically left for future work, seemingly due to their nuanced and complex nature.

2. RELATED WORK

Researchers have been paying increased attention to the use of IM amongst teenagers [1] as well as adults [2, 3, 4, 7]. Even though the issue of privacy is raised in some of these studies, none of them has been specifically directed at understanding the privacy concerns experienced of IM users, and at studying the practices that users employ to address them.

3. DESCRIPTION OF STUDY

We interviewed seven frequent users of IM to understand their privacy considerations, expectations and practices while using IM, and to see whether these differed with the location and purpose of IM usage. We solicited participants via a posting to a mailing list, as well as via word of mouth. Potential participants were sent a short (5 questions) multiple-choice screening questionnaire in order to get a sense of the kinds of IM system(s) they used, the usage frequency, and the number of contacts in their list(s).

3.1 Subjects

Seven subjects participated in the study:

- a software developer in a large corporation
- a graphic designer in the technical staff of a university
- a software engineer in a small Indian consulting firm (with offices and clients in India and the U.S.)
- a doctoral student whose native language is Spanish
- a technical support person at a large corporation
- an engineer at a large corporation that handles sensitive defence contracts
- a second-year undergraduate student in Social Science

We deliberately chose individuals with diverse backgrounds involved in different types of pursuits in different types of environments, in order to compare and contrast the use of IM in a broad variety of situations. Two of the subjects (graphic designer and technical support person) were female. Subjects were in their mid-20s to early 30s, except for the undergraduate (20) and the engineer (above 50). All had been using IM for at least a year. All used IM from

multiple locations (e.g. work, home, school), and had more than 20 people in their contacts lists. The frequency of IM use varied from a few hours per month to more than 8 hours/day. Subjects participated in the study on a voluntary basis, and no compensation was provided.

3.2 Methodology

A semi-structured interview of about 1 to 1.5 hours was conducted with each subject. For the graphic designer, we did a second follow-up interview of about half an hour to probe more into some of the information provided in the first conversation. In order to get a sense of the physical environment in which the subjects use IM, we tried to conduct interviews at the place where the person used IM the most (however, three of them took place at different locations.) All interviews were conducted face-to-face, except for the subject from India who was interviewed by phone. The interviews were digitally tape recorded and then transcribed for analysis.

3.2.1 Interview Questions

We used about 20 rather broad questions as a guideline for the semi-structured, conversational interviews. The questions were meant to gather information about people's tasks and routines, the manner in which they use IM in their daily lives, and their expectations and behaviour regarding privacy – both in general and specific to IM. Questions were tailored to each subject based upon their answers to the 5-question screening questionnaire. Additional questions were asked during the interview, as deemed necessary to gather relevant information.

4. FINDINGS

Despite the diversity of the chosen subjects, they proved strikingly similar in their expectations and practices regarding privacy. (While there are quite a few differences as well, we will mostly focus on the similarities here.) In general, subjects have trouble articulating what the concept of privacy means to them. They find it much easier to discuss privacy in terms of concrete situations and examples. This is to be expected, given its highly personal, nuanced and context-dependent nature.

Subjects claim not being overly concerned with privacy when using IM. Most operate under the general assumption that they do not have much privacy when working online. Yet, as will become clear in the following discussion, quite a few of their practices suggest a definite desire and concern for privacy, despite their claim to the contrary.

Overall, we found that subjects share three main privacy concerns. These are described below.

4.1 Privacy from Non-contacts

Subjects report the desire to have a very high degree of privacy from people not on their contact lists. Non-contacts were often treated as strangers with unknown intentions. Subjects took pains to make sure that anyone not on their contact lists could not see any information about them. For instance, only one subject (undergraduate student) maintained a public profile. He also indicated that many of

his friends have profiles as well. We believe that this difference is most likely due to the fact that undergraduates are at an age and stage in life where they are actively engaged in socializing and want to “advertise” themselves.

The people on the contact list, on the other hand, are treated as trusted acquaintances. Given the greatly lowered privacy barrier for contacts as opposed to non-contacts, it is hardly surprising that all subjects were quite careful about who was added to their list. The graphic designer relied upon standardized screen-name conventions followed at her workplace, the software developer used the corporate directory which was integrated with their IM client, while the doctoral student and the software engineer reported only adding those with whom they had had extensive face-to-face relationships for some period of time.

This careful screening of contacts at the outset also translated into relatively few contacts being blocked or deleted later. Blocking occurred either when someone was added in error, or upon some significant change related to that contact. For example, the software developer mentioned blocking his ex-girlfriend after they broke up. Similarly, the doctoral student mentioned deleting contacts from his old job after he quit that job.

4.2 Privacy regarding Availability

This can also be viewed as privacy from interruption or distraction from the current task. Subjects seem to have quite different desires regarding their availability while working (from any location including their homes) as opposed to not working. (“Work” here is used in a general sense including schoolwork.) While working, subjects want to be as available as possible to co-workers for collaboration. They also pay more attention to the availability of the co-worker contacts on their list. Subjects try to keep their contacts informed of their availability via status indicators. The graphic designer leaves descriptive status messages even if she is away from her desk for only 5 minutes. The software developer turns off the “auto-idle” feature, because often he is around yet not using the computer, incorrectly creating the impression that he is away from his desk. The graphic designer also mentioned that she often guesses the location of her contacts based on changes in the picture or icon that they choose to associate with their name.

Graphic designer: *“Sometimes somebody will work from home in the morning and then come in the afternoon. But the only thing that distinguishes between locations is the different icons that people might have. They might have an icon when they're at work and an icon on their home computer. And when they log in you can tell just based on an icon.”*

Subjects report frequently employing “plausible deniability” [4] as an indication of (un)availability. They choose not to respond immediately to incoming messages if they are otherwise occupied. Similarly, a non-response to a message they initiate is taken to mean that the contact is busy and will reply at a later, more convenient time. The software engineer, however, said that he tries to send a quick “busy right now” message whenever possible.

For all subjects who have working lives, IM has allowed a limited extension of “home” into “work”. Subjects report having personal, non-work contacts in their lists at work. However, while at work, IM conversations with friends, family, and significant others are reported to be few and far between, with primary attention being devoted to work-related matters. The occasional personal conversation seems to serve the purpose of maintaining social bonds, and catching a moment of relief from the stress of work.

Interestingly, the reverse is typically not true - “work” rarely extends into “home”, unless specifically working remotely from home. Subjects make sure that work does not invade their personal lives. The software engineer almost never uses IM from home as he wants to “stay away from the computer”. The graphic designer and the software developer have separate personal IM accounts, which they use from home, while the doctoral student piggybacks on his wife’s account at home. Subjects do not have any work-related contacts in these accounts.

In general, subjects’ practices point to a desire for different levels of availability for different groups of people – such as co-workers, family, friends – based on their own location and (work) context. For instance, some of our subjects have some reservations about having their superiors on their contact lists. The doctoral student collaborates with his supervisors only via email, as he does not want to always be accessible to them via IM. This is further corroborated when subjects mention using the grouping mechanism provided by IM to selectively monitor their contact list.

Graphic designer: *“The IWTT members are right here. It’s the first thing that I see, and I can tell my team members are on.”*

Doctoral student: *“My wife logs in and only looks at the group of family members. If no one in that group is logged in she will disconnect. That’s the only group of people she cares about at that time.”*

4.3 Privacy regarding Content

Subjects mentioned being aware of the sensitivity of the contents of their IM conversations. For the most part, IM is treated similar to email or written communication. Subjects are aware of, and have accepted, the fact that IM may be monitored by system administrators, or be sniffed off the network. Yet, just as with email, subjects have a reasonable expectation that their conversations will only be read by the intended recipient(s). The undergraduate student believes that the chances of anyone grabbing his conversations are so miniscule that he is not concerned. Moreover, they expect the recipient(s) to follow the same common etiquette as for email if sharing conversations with a third party. In fact, the graphic designer’s workplace has come to an unwritten consensus about the policies to be followed for sharing saved conversations with others not part of the original conversation.

Graphic designer: *“We created rules within our group. I work with 5 people. And the rule is, anything that is said in AIM or in email, if you want to forward it on to a third party you have to check with the person first, tell them*

exactly what you would be clipping and pasting and sending. If they okay it, fine. But you cannot do that under any circumstances, no matter how benign the conversation seemed. You can’t do that unless you’ve asked first. And so we stick to that rule and have not had any problems.”

Most subjects expressed unease at the prospect of their IM conversations being saved by their contacts. However, they have resigned themselves to the fact that this is something that they can neither know about nor control. At the same time, they all cited instances in which a previously saved conversation either by them or by a contact had been useful at some later point. All seem to employ the strategy of consciously trying to avoid saying anything over IM that might be potentially harmful for them in the future.

All subjects report switching communication medium for conversations that they deem too sensitive for IM. Subjects resort to the telephone or a face-to-face conversation in such cases – either because they do not want a written record of the conversation, or because they feel that IM is too impersonal a medium, or because they feel that written communication is not the best choice for the situation, or some combination of the above reasons.

Finally, all subjects report being aware to some extent that others who walk up to their desks are able to glance at the contents of their screens. The software developer and the software engineer said that they minimized their windows whenever someone approached their desks.

Software developer: *“I’d rather have it minimized and blinking than there for everyone to see what I’m talking about.”*

The undergraduate student also minimizes windows but only if they contain a conversation about the person approaching them. The doctoral student mentioned that his conversations are in Spanish, which provides him with an added layer of privacy in an English speaking country. The graphic designer as well as the doctoral student initially denied being too concerned about others watching their screen. A bit more probing revealed, however, that the doctoral student often turns off his monitor if engaged in an in-person conversation with someone at his desk, while the graphic designer mentioned occasionally using the “Show Desktop” button to minimize all windows. She also recalled an instance at home in which she felt quite awkward when her mother was watching her screen over her shoulder.

5. DISCUSSION

The interviews seem to indicate that an important driving force behind people’s desire for privacy in the context of IM is their wish to control how they appear to others. As Palen and Dourish [5] point out, “We seek to maintain not just a personal life, but also a public face. Managing privacy means paying attention to both of these desires”. This may be seen in a person’s desire to present themselves differently by being “available” to different extent to different groups of people. Subjects’ wish to control the sharing of their one-on-one conversations (with any party not part of the original conversation) also points to their desire for being in command of the impression they project

about themselves to the third party in question. The impression that IM users want to present to someone seems dependent on the kind of relationship with the person. Providing information to trusted colleagues raises fewer privacy concerns than to superiors or unknown third parties. This is highlighted by the subjects' very strong desire for privacy from people not on their contact lists.

6. IMPLICATIONS FOR DESIGN

Based on the above discussion, we suggest that designers of IM systems pay particular attention to three major factors, to empower users to effectively manage privacy:

6.1 Defaults

Given the complex and context-dependent nature of privacy, the number of options and settings to be managed is quite large. As a result, we must provide defaults that are widely applicable across persons and situations, or provide typical profiles – such as “manager”, “student”, and “home user” – with different defaults. We found that default IM settings are seldom looked at, let alone modified. The only time subjects remember changing something is either when they first install IM, or when something concerns them enough to take action. For example, the software developer turned off pop-up notifications and sounds as these were causing him to be distracted. And, after getting a few messages from random strangers, the graphic designer figured out how to set restrictions to allow only her contacts to view her information. This underscores the importance of setting appropriate defaults at the time of installation. The values of defaults ought to be informed by detailed studies of users, their tasks and the settings in which the system operates.

6.2 Modifiable Policies

Since the notion of privacy is highly nuanced, it is impossible to devise universally applicable policies. For example, a system may have the policy of not revealing one's home phone number to anyone except one's family and personal friends. However, in case of an emergency one is unlikely to expect a rigid enforcement of such a policy. The inability to turn notifications on while in “busy” mode is an example of a policy that is too rigid. Designers should allow for user modification of default policies to provide users the control and flexibility to adjust the system as pertinent to their situation.

6.3 Interface and Interaction

Finally, a great deal of attention needs to be paid to the user interface and user interaction. Feedback should be provided in a context-sensitive, non-intrusive and seamless manner. Often, subjects were unsure about their current settings for various parameters, primarily due to very little feedback and lack of visibility. An IM system ought to give users the opportunity to inspect the various pieces of information about themselves that can be viewed by others, and also to obtain summaries and statistics about them. At the same time, subjects frequently mention “distractions”

caused by too much or inappropriately timed feedback. Interaction with the user should be designed in such a way that specifying and modifying one's status, settings and policies requires little or no time and effort. Automatically setting the status message to “Away” based on keyboard inactivity is an example.

7. CONCLUSION

IM users seem to primarily have three types of privacy concerns: privacy from non-contacts, privacy regarding availability, and privacy regarding the content of IM communication. To deal with these issues, users currently employ some combination of self-governance, carefully evolved practices (self, group, or social), mandated or mutually agreed-upon policies and guidelines, and software settings. One important driving force behind people's desire for privacy in the context of IM seems to be the desire to control how they appear to others. We suggest that designers of IM systems empower users to appropriately manage the impression they project through IM. We believe that this can be achieved by focusing on the interface, and by providing modifiable policies and settings with suitable defaults and seamless interaction.

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