
Beyond the Dyad: Understanding Sharing in Instant Messaging

Mirko Fetter, Tom Gross

Faculty of Media
Bauhaus-University Weimar
Bauhausstr. 11, 99423 Weimar
<firstname.lastname>(at)medien.
uni-weimar.de

Abstract

Instant messaging allows users to exchange presence and availability information, and to have spontaneous online conversations. We report on a study of account sharing in IM, and present distinct types of sharing as well as practices of sharing.

Author Keywords

Computer-Supported Cooperative Work; Computer-Mediated Communication; Instant Messaging; Sharing.

ACM Classification Keywords

H.5.2 [Information Interfaces and Presentation]: User Interfaces — Graphical User Interfaces, User-Centred Design; H.5.3 [Information Interfaces and Presentation]: Group and Organisation Interfaces — Computer-Supported Cooperative Work.

Introduction

Instant messaging systems allow users to exchange presence and availability information, and to have spontaneous online conversations. In general, they depart from a perspective of single users in a dyadic setting—that is, each user has a unique identity and singular presence information, and each user has a personal computer for conversations. We did a study on the actual use of IM systems. This study provides

Copyright is held by the author/owner(s).

CHI 2009, April 4–April 9, 2009, Boston, MA, USA

ACM 978-1-60558-247-4/08/04.

valuable insight into sharing practices of users concerning both the online identity with presence and availability as well as the handling of conversations.

In this paper we provide a discussion of the background on technology sharing practices. We then report on our study, and we present expected and unexpected sharing. Finally, we draw conclusions and glance at future work.

Background

For any type of software application the actual use and practice can for some users be quite different from the use and practice anticipated by the designer. Practices, but also patterns and workarounds, often evolve out of necessity due to missing functionality, barriers, or usability issues. Norman [8] writes: 'hacks and workarounds are truly revealing, both of needs and also of solutions'. This is especially true when applications that were designed for and actually used in a work context, are transitioned to other contexts such as the users' homes, without rethinking the user needs [1].

Instant messaging applications are mostly designed for single-users that communicate with other users for dyadic one-to-one communication. Example areas of practices and workarounds that relate to IM are authentication, sharing of accounts, and communication behaviour.

Authentication by username and password is from a usability perspective often inappropriate for modern computer systems that made their ways into our living rooms [2]. Consequences in the form of workarounds are documented in a study of [5]. From home interviews with 35 families authors found that most

families sharing one computer also used one single username together. This practise—for the sake of convenience—goes hand in hand with the loss of the possibility for personalisation of individual profiles.

Also Brush and Inkpen [3] studied how people share technology in domestic environments and made similar findings. The insights of their study led to the design of family accounts [4], a new user account model that is aimed for users of shared family computers. The focus of the model is mainly on providing possibilities for personalised settings, easy file sharing and the ability to quickly change those profiles. Muller and Gruen sum their findings of two studies, revealing multifarious practices around sharing email accounts with different purposes and effects [7]. These ranged from the presentation to the outside with special functions (e.g., orders@catalog-merchant.com), awareness of the activity of co-workers, up to solving problems collaboratively.

Gross et al. [6] studied the communication behaviour of IM users in a Social TV setting, and found that it goes beyond the exchange of information and also allows for the users to get a feeling of connectedness.

We found that IM is an area where different circumstances produce new usage forms around IM accounts. Although the reasons and settings for sharing IM have similar backgrounds like in the studies discussed above, we found a lot of peculiarities that are special to the shared usage of IM. In the following we will present the results of our study and discuss the findings.

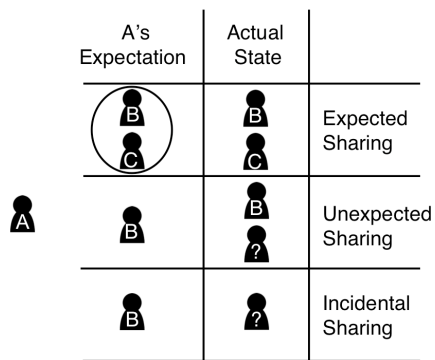


Figure 1. Three sharing types. A: communication partner of the shared account users. B and C: shared account users, where in Expected Sharing B and C have a long-term account together and are known to A; in Unexpected Sharing B is intentionally lending the account to an unknown third party; and in Incidental Sharing B is unintentionally lending the account to an unknown third party.

Instant Messaging Sharing

In order to get better insights into the actual sharing practices of IM users we conducted semi-structured interviews with 17 participants. The participants were recruited from faculty members and students of different study programs at our university, all experienced in the use of IM applications, in the age between 21 and 36. All interviews lasted between 10 and 18 minutes. All interview sessions have been digital recorded, transcribed, and coded. The interviews were conducted in German—the following quotations are translated with the intention to reproduce at best what was said and how it was said.

After a short warm up period the participants were introduced into sharing practices of communication media in general, exemplified by the use of traditional landline phones. Landline phones are commonly used by more than one person in private and work settings, and so people are experienced with practices around sharing one phone line in their families, or shared offices. We then asked if the participants had encountered practices of shared IM use and to characterise their practices: in which situations they encountered them; their role whether they were sender, recipient, or observer of communication; and what circumstances led to the sharing and how the people dealt with these situations.

In the following we discuss the findings of our interviews, focussing on situations and constellations in which sharing practices evolved. Furthermore, we give details on the problems that arose from this practices and what workarounds helped to establish successful communication.

Sharing Types

All interviewees encountered or observed situations where one IM account was shared between two or more persons. So, we got a considerable amount of results that allowed us to classify the sharing into three types: expected sharing; unexpected sharing; and incidental sharing (cf. Figure 1).

Expected Sharing are practices, where two or more users share one account continuously over a long period. The communication partners who address this shared account have either clear knowledge or some belief that this account is shared and know the group of people sharing the account. Typically, one group member at a time is actively using the account and participating in online conversations, while the others are passive during that time. The communication partners do not have ad-hoc information on the identity of the active group member.

Typically expected sharing is based on a long-term agreement amongst the owners of the shared account. Therefore, this type of sharing happens among people in close relationships, with very high trust (e.g., in families or couples). In these settings sharers typically use one computer that is accessible to all members mostly in a domestic setting. And, as the interviewees said, the loss of privacy entailed (e.g., because everybody can see the history in the applications) is only a minor concern. Users—for the sake of convenience—often share a single login for the computer and accordingly also for IM [5]. Sometimes, these practices form over time and accounts that have been used by single persons, get shared by two or more people—for example, when a couple moves in together.

The interviewees reported frequent use of expected sharing in IM by their counterparts; they did not practice it themselves. Students mostly experienced it with parents in a different city. In these cases the interviewees' parents often used one account together, in some cases even with their student child as the only contact. In other cases, two interviewees reported explicit sharing of couples they were friends with that started when the couples moved together.

Unexpected Sharing is practices, where a borrower is actively using the account of a lender. The communication partners who see this account online or initiate an online conversation do not have information on the sharing. Typically, the owner of the account is involved, and either lends the account or is even actively participating in the communication with the communication partners. These practices of IM sharing manifest only temporary and erratically.

Typically, unexpected sharing works best if the borrower and the lender have a trusted relationship and overlapping online contacts. In our study, unexpected sharing was the most common practice and reported by all interviewees. One interviewee said that the goal is to circumvent the 'hassle to log the other user out, and your self in'. Another reason is that IM passwords are often forgotten because most IM applications offer auto-login features where users do not need to remember the passwords. As one interviewee said: 'I can't memorise my username nor by password'.

Most times it was only used for quick messages that were typed in the presence of the account owner. One interviewee described a situation of unexpected sharing as 'this was just a question of effort, because it was

obvious that it was just concerning one or two things. If one would foresee, that it could be a longer conversation, one would probably log oneself in'. Among other described situations where the interviewees encountered practices of unexpected sharing were for example: a stay at a friend's house before leaving for the night out, and arranging to meet up with common friends via IM; a student who was ready for leaving the lab and already logged out of his computer and borrowed the IM account from a fellow student, to quickly inform another fellow student that he is leaving now; or as described by one interviewee 'we had a party, and the computer was on; and those who wanted, could just write somebody'.

Incidental sharing happens spontaneously and unintentionally. It is a special sub-case of unexpected sharing, where the borrower actively uses the computer of the lender, and accidentally and unknowingly also uses the account of the lender. Here, the communication partners expect the lender, not the borrower to be present. Incidental sharing is always short-term and is typically resolved by the borrowers once they notice it.

Incidental sharing was reported when a person is using a computer of another person who is logged into an IM application, and both persons unwillingly become borrower and lender. In incidental sharing the sharing most times only occurs when a message is sent to the unmeant shared account. As this type of sharing is a lapse rather than an actual practice, it is just mentioned here for the sake of completeness. In the following, we only want to address challenges and workarounds that appear in expected and unexpected sharing.

Sharing Practices

We first report on insights concerning the communication partners' awareness of availability of the individual users of a shared account, and communication partners' awareness of the respective conversation partner. Since both types of awareness are a particularly big challenge for unexpected sharing, we will start with unexpected sharing.

The first point is *awareness about the presence and availability*. For *unexpected sharing*, communication partners typically assume that the online states of their buddies apply for individual persons. The fact, that a buddy is actively sharing the account is regarded as unlikely. The communication partners have no information if additionally persons are reachable under a specific account. Communication partners can receive explicit information on additional persons in the conversation from the hosting user (e.g., 'Hey, Frank just dropped by.'). Still, in such situations it is unclear how long the additional person will be available.

In situations of *expected sharing*, the communication partners are aware of the fact that they might reach multiple persons behind one account. Usually they know the pair or group of users who are reachable with this account. Sometimes the pair or group makes this explicit through the account name (e.g., 'Christine&Marco', or 'FamilyHarrison'). In other cases especially when accounts that have initially been used individually become shared, the sharing gets clear through practise (e.g., upon a sequence of the same unexpected sharing situation, the communication partner develops expectation). However, in all cases of expected sharing the communication partner only knows the group of users sharing an account, but can

hardly tell who exactly is online and if the person he wants to reach is available. In order to overcome this, different practices and workarounds evolve. One user states that he developed awareness of the rhythms of the shared account users, so he can guess who is reachable. This interviewee said: 'I roughly know that he has to work in the mornings, but he also can have a day-off. So I am never completely sure'. Another interviewee reports, that she never starts communication with the shared account in her contact list, as she never can be sure who is online, and she is only acquainted with one person. So she lets 'the opposite side take the initiative'. In order to make sure that it is the person she knows. Generally speaking, the awareness about who is online is particularly crucial when communication is established.

The second point is the *communication partners' awareness of the respective conversation partner*. Particularly, we want to address how sender and receiver negotiate who exactly is communicating, especially when contact is established. In *unexpected sharing* there is no explicit knowledge of sharing. And, typically, in this situation the IM systems do not provide awareness about it. Therefore, different practices of users have been found. For instance, since the communication partner of a borrower performing unexpected sharing assumes that the lender is writing, the borrower identifies himself when starting a communication with his name followed by a colon (e.g., 'Frank: Hi, how are you?'). Or make it obvious in other ways; as one interviewee said: 'they write "It's me,... " and append their name'. The communication partners reportedly in the following make explicit who is addressed by starting with a trailing at-sign and a name (e.g., '@Frank: Fine, thanks.').

In *expected sharing* the communication partners are aware that they reach a group of users sharing an account, but cannot be sure whom they currently address. Therefore, a reoccurring practice was to start communication by checking which group member was online through writing the name of the group member they want to reach followed by a question mark (e.g., 'Marco?' or 'Dad?'). Also the trailing at-sign and a name—as reported for unexpected sharing—was used to establish a successful communication. When users of a shared account contacts a communication partner, the senders can also identify themselves by adding their name followed by a colon before the message. Besides these explicit identifications the interviewees also reported on other indicators. For instance, some users reported that they could identify senders from the content of the message; some users only knew one specific user of a shared account and expected this person to be the sender. The style of writing can also give a clue; one interviewee said: 'I roughly can guess from the style who is writing'; or as reported by another interviewee: 'my father types much faster than my mother, so I can tell from the answering speed'. Additionally, two interviewees pointed out that in some cases they had no need for identifying their conversation partners (e.g., when they want to inform both parents about the results of an exam).

Conclusion and Future Work

The shared use of IM applications is a common practise not reflected in the design of current IM applications. As computer-mediated communication more and more invades our daily lives and gets more and more pervasive, coming solutions for communication have to be more flexible, so that they can adapt to different situations and different social contexts.

Acknowledgment

We thank all members of the Cooperative Media Lab—esp. Eik List, Jens Opolka, and Thilo Paul-Stueve—for contributing to this study.

References

- [1] Adams, A. and Sasse, M.A. Users are Not the Enemy. Why Users Compromise Computer Security Mechanisms and How to Take Remedial Measures. *Communications of the ACM* 42, 12 (Dec. 1999). pp. 40-46.
- [2] Bardram, J.E. The Trouble with Login: On Usability and Computer Security in Ubiquitous Computing. *Personal and Ubiquitous Computing Journal* 9, 6 (Nov. 2005). pp. 357-367.
- [3] Brush, B.A.J. and Inkpen, K.M. Yours, Mine and Ours? Sharing and Use of Technology in Domestic Environments. In *UbiComp 2007*. pp. 109-126.
- [4] Egelman, S., Brush, B.A.J. and Inkpen, K.M. Family Accounts: A new Paradigm for User Accounts within the Home Environment. In *CSCW 2008*. pp. 669-678.
- [5] Frohlich, D. and Kraut, R. The Social Context of Home Computing. In Harper, R., ed. *Inside the Smart Home*. Springer, London, UK, 2003. pp. 127-162.
- [6] Gross, T., Fetter, M. and Paul-Stueve, T. Towards Advanced Social TV in a Cooperative Media Space. *International Journal of Human-Computer Interaction* 24, 2 (Feb. 2008). pp. 155-173.
- [7] Muller, M.J. and Gruen, D.M. Working Together Inside an Emailbox. In *ECSCW 2005*. pp. 103-122.
- [8] Norman, D.A. Workarounds and Hacks: The Leading Edge of Innovation. *ACM Interactions* 15, 4 (July/August 2008). pp. 47-48.