Using current SMS and mobile IM practices to inform social mobile application design

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Abstract
To inform the design of future social mobile applications, we need a better understanding of the current practices of mobile messaging today, including how small groups use existing communication systems and what needs are missing from such systems. Towards this end, we discuss our findings from an interview study assessing users' perceptions of instant messaging, location, mobility, and privacy.

Keywords
Mobile IM, SMS, instant messaging, mobile social software

ACM Classification Keywords
H5.2. Information interfaces and presentation: User Interfaces

Introduction
Instant messaging (IM) has proven itself as an effective tool useful for not only streamlining corporate communication needs [2], but also a popular social tool useful for helping families coordinate daily activities and giving people (and especially teenagers) an interactive medium for socializing and expressing themselves [1].

Most instant messaging nowadays takes place on either a desktop or laptop. Mobile instant messaging (mobile IM) on devices such as mobile phones or PDAs, however, has yet to be adopted with as much flair as its desktop/laptop counterpart. (We do not define laptop IM as "mobile IM" since usage patterns for laptop IM closely follow those of desktop IM.) This trend presents us with an opportunity to extend and re-conceptualize instant messaging to create a next-generation instant messaging (NGIM) client, in which we can provide richer communication and better coordination, for more kinds of people, in a wider range of situations, than is possible today.

Our initial work on creating a NGIM client has led us to question why current trends have fallen short of users' expectations. To this end, we investigated how people think about instant messaging, location, mobility, and privacy in order to give us a deeper understanding of how small groups utilize existing communication systems and what needs are missing from current communication systems.

Current SMS and Mobile IM Practices

We conducted thirteen interviews with mobile phones users who are active users of SMS and/or mobile IM technology. Our interviews focused on SMS and mobile IM practices as these are less understood compared to mobile telephony practices. For the purposes of our study, we defined "active" users as those who regularly send at least 7 messages a week, and receive at least that many as well. All participants also averaged hourly usage of desktop and/or laptop IM. All participants were either staff or students at a private university, ranging from 18-30 years of age. From our interviews, we uncovered several interesting trends regarding general adult social usage of these technologies; we present a few of these findings below using desktop/laptop IM as a basis for comparison.

Response Time

All participants' cell phones had some sort of notification (audio, visual, or tactile) which indicated the arrival of a new SMS/mobile IM message. All participants responded that they almost always immediately notice the notification and immediately respond by reading the SMS/mobile IM message. In contrast, participants indicated they are more likely to negotiate their response time when dealing with desktop/laptop IM messages, leading to longer delays before reading the message.

Social expectations

For desktop/laptop IM, receivers are granted "plausible deniability" in regards to their availability, such that participants indicated they hold a very loose expectation of how soon a reply should be given, if at all. On the other hand, SMS and mobile IM messages seem to hold a much stricter timetable. Almost all participants indicated a punctual 5-15 minutes response time at replying to messages they receive. They expect similar response time for messages that they send out, so much so that most of them claimed that they would follow-up with a second message or phone call, if no response was given within 2 hours.

Switching communication mediums

Switching modalities in either desktop/laptop IM or SMS/mobile IM was not common. Desktop/laptop IM conversations tended to start and end on the same device. No participants could think of a past occurrence where SMS or mobile IM conversations

started on the mobile device and were continued on desktop/laptop IM. Conversations moving from SMS/mobile IM to telephony were mostly due to SMS's 160-character limit. Conversations also seldom went from telephony to SMS/mobile IM, and were done only as references to inside jokes, and not as a continuation.

Audience

Participants regularly messaged between 5-10 people using either SMS or mobile IM. "Regularly" was defined as having daily to weekly conversations. This set of friends strongly correlated with the set of people that participants regularly messaged using desktop/laptop IM. Almost all of the SMS/mobile IM sets of friends did not correlate with face-to-face set of friends that participants had daily contact with. In fact at least 50% of the SMS/mobile IM friends were long-distance.

Message content

All participants categorized their desktop IM conversations as gossip and informal chit-chat, even those that used desktop IM during work hours. In contrast, SMS/mobile IM messages were typically categorized as a 60/40 or 70/30 split between being chit-chat and organizational in nature, with informal chit-chat in the majority. Participants responded that they tend to view SMS/mobile IM as more functional and purpose-driven than desktop/laptop IM.

Privacy concerns

All participants shared similar privacy concerns (or lack thereof) over their desktop IMs as they did their SMS and mobile IM messages. While messages in either medium can optionally be automatically saved, only one participant actively thought about that when sending SMS/mobile IM message. Other participants explicitly stated that they did not believe the messages were of much value and thus were not concerned of the possibility that conversations were automatically saved.

When asked if about a location-enhanced messaging client (either on the desktop/laptop or a mobile device), all participants showed initial hesitation in adopting this. Upon further probing, it was determined that participants were receptive to the idea of disclosing their location but only to their core set of SMS/mobile IM and desktop/laptop IM friends. Since there were a significant number of acquaintances or old buddies in both their mobile device's address book as well as their buddy list, they were not comfortable with a disclose-to-all policy, even if given a reciprocity clause. All participants raised the concern that the device must have an option to turn on and off location disclosure without interrupting other messaging features.

Conclusion

By understanding current trends in instant messaging, location, mobility, and privacy under existing communication systems, we hope to more appropriately inform future designs of social mobile applications, and in particular the design of NGIM.

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