

Renegotiating Interaction Routines: Adoption of Skype in the Workplace

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Abstract

Skype is a multimedia communication tool integrating Voice-over-IP (VoIP), Instant Messaging (IM) and video that can be used to support Real-Time-Collaboration (RTC) in the workplace. In this paper, we describe the adoption and use of Skype in dispersed teams in organizations. We show how Skype users evolve common conventions about using awareness information and modify their communication behaviour in mutual negotiation. We explain how this process of renegotiating routines for interaction during adoption is influenced by accustomed use patterns derived not only from pervasive telephony, but also IM. Our findings support Aoki & Woodruff's (2005) postulation that ambiguity is crucial for (computer-mediated) interaction and show that hybrid media stimulate hybrid forms of communication.

1 Introduction

Computer-based support of communication and collaboration in dispersed teams, including voice and video, has been studied for over a decade. However, traditional telephony has so far mainly been used as a separate communication channel for informal and formal conversations. Lately, however, emerging VoIP applications display the potential to become tools that combine traditional telephony with other collaborative functions and go beyond familiar phone and computer uses in dispersed teams. Skype, one popular example of such new VoIP applications, integrates contact management, awareness and different media (unified communication) and connects to the traditional telephone networks. Riemer & Frößler (2006) argue that unified communication is crucial for new RTC-tools and provides the foundation for more elaborate collaboration features.

In this paper, we present a field study that provides some initial insights into the adoption of Skype in the workplace. Since technological convergence does not necessarily determine convergent uses (Höflich 1999), we probe if and how Skype changes everyday routine interaction and communicative social practice (Giddens 1984). We show how Skype users have to develop conventions about how to initiate conversations, as well as to signal availability. We also show that computer-mediated communication needs ambiguity (Aoki & Woodruff

2005) and argue that the integration of different communication channels needs further attention in future design considerations for RTC-tools.

2 Skype

Skype is probably the most popular provider of PC-based VoIP with over 170 million registered users and about 8 million concurrent users online every day. Although Skype is no fully-grown RTC-tool, it provides a lightweight version with the core features contact management, awareness and multimedia, including telephony (Riemer & Frößler 2006). While the Skype-client and voice communication among Skype users are free, the company charges low fees for phone calls to and from the mobile and circuit-switched networks. The perception of free telephony largely seems to obscure the fact that Skype integrates voice into a full scale IM-client that provides multiple features for communication in addition to telephony. These include a buddylist, synchronous messaging, file transfer, audio conferences and video communication. Moreover, Skype affiliates offer various add-ons for collaboration, e. g. application sharing.

3 Methods

Our data was collected by applying ethnographic methods. We observed the adoption and use of Skype for two years in a research organization, starting in December 2004. We focused on dispersed teams that consisted of organization members and external co-workers from other organizations. We regularly took part in formal and informal Skype-supported meetings and observed conversations via Skype. During observations, Skype users were asked opportunistic questions about their experience with Skype and if problems arose in daily routine interactions. After one year we conducted 28 semi-structured interviews with 21 organization members and 7 external co-workers, who were beginning, intermediate and proficient users of Skype. The 5 beginners were interviewed again after 8 months and asked about their Skype experiences so far. We expected the adoption of Skype to be influenced by pre-existing concepts of pre-existing technologies (traditional telephone and IM), so we probed if and how communication patterns differed from traditional phone and IM.

4 Initial Results: Adoption of Skype

Diffusion in the organization was bottom-up; employees were allowed to install software for business purposes without management's permission. One common intuition about the reason for adopting VOIP is that it reduces telephony costs. However, instead of being focused on reducing telephony costs, our users were focused on the new communication functions Skype provided. They stated their main reasons for using Skype included the easy setup of voice conferences, informal communication in dispersed teams. Cost did not play a major

role in influencing adoption in the larger organization, although it was a factor in the co-operating smaller companies. Although overall differences were found between companies, use patterns were predominantly shaped by distributed teams. These teams communicated often via Skype, while face-to-face conversations were common with co-located colleagues.

While most users viewed Skype as a new, integrated communication medium, 6 of the interviewees saw Skype as a direct substitute for phone calls and did not exploit other features. These users reported being irritated by telephone-related problems in Skype that demanded extra effort. In all but one case, they returned to using the standard telephone after experiencing such difficulties. Thus, user perceptions of Skype strictly as a telephone interfered with adoption. In contrast we found that those 20 out of 21 interviewees who successfully adopted Skype used IM, even though these imposed higher learning costs.

In contrast other more complex features such as video or shared workspaces were not predictive of adoption. Video communication was not used for business purposes, because Skype users thought that audio was sufficient for collaboration. Only three proficient Skype users installed Unyte as add-on for application sharing in their workgroup, while the others wanted to first become familiar with basic Skype functions before adding new features. Proficient Skype user's stabilized interaction routines thus comprised awareness, text and voice.

Early Skype use within and between teams often led to inconsistencies arising from different conventions that had either been assumed by single Skype-users or formed over time in specific group communication. Some users treated Skype like a telephone, e.g. establishing a conversation always via voice, which annoyed conversation partners who drew on their experiences with IM and preferred to send messages to initiate a call. These messages, in turn, would not be answered by the 'phone group' who weren't expecting them. Different perceptions and assumptions also clashed about when to expect an answer to text messages. Experienced IM users used the convention that IM responses could be deferred until the recipient was ready to respond (Nardi et al. 2000). In contrast, other Skype users without prior IM experience expected to get an answer right away. Similar inconsistencies arose regarding the interpretation of awareness tags. The 'phone group' largely ignored them, while those with no prior IM experience took them to be an actual representation of real availability. In contrast, experienced IM users thought them to be ambiguous, and they made sure that they clarified actual availability before beginning a conversation.

Over time, by negotiating and learning from each other, a typical set of rules and routines evolved in terms of interpreting awareness information and using text and voice (Joisten 2007). One common routine was to always start and negotiate conversation via text (Nardi et al. 2000). Text messages were also preferred for short questions and answers. They were also (somewhat counterintuitively) used for brainstorming new ideas, because they were 'less serious and less direct'. During voice sessions, file transfer or text messaging were used in parallel to exchange documents or set up side conversations in conferences, respectively. Participants also used IM to transmit URLs, phone numbers or cut and paste texts, thus mixing voice and text conversations increasingly over time.

It was apparent that experienced Skype users preferred ambiguity in their availability awareness. They deliberately obfuscated their real availability status, e. g. by always setting Skype

to *online* or persistently not answering an IM or a phone call. Some groups explicitly negotiated special meanings of tags, e. g. that ‘away’ signalled a potential non-responsiveness, but depending on topic and urgency, messages would still be answered quickly. Skype users thus created space for *plausible deniability* and *stories* (Aoki & Woodruff 2005).

5 Conclusion and Future Work

In Skype, the presence of multiple media allows different behaviours before and during conversations. This means that in adoption, rules for the interpretation of awareness and adequate behaviour in communication have to be re-negotiated. Skype users could not directly rely on familiar interaction routines, but old telephone and IM routines still shaped new interaction patterns. These had different effects on adoption; with those relying solely on telephony models failing to adopt Skype, in contrast to those who exploited IM. Our investigation shows that multimedia might change communication and interaction dynamics over time, possibly leading to specific (media-) hybrid communication and interaction routines. Moreover, we showed how Skype users wanted and deliberately created ambiguity regarding their availability. In the future we will analyse our results with regard to the design of new hybrid media and awareness, and look at the interplay of text and voice in communication processes in more detail, exploring possible implications for media theory.

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