



Interactive or interruptive? Instant messaging at work

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ABSTRACT

The use of instant messaging (IM) technology at work is controversial, due to the interruptions it may cause and the difficulties associated with quantifying its benefits for individuals, teams and organizations. In this study, we investigate the use and impact of IM tools in the workplace. Based on theories of communication performance and social networks, we propose that while the use of IM will cause work interruption, it will also lead to improved communication quality and the establishment of trust between colleagues. These mediating variables will in turn influence group outcomes. We validate our research model with data collected through a survey of 253 working professionals. The data suggests IM can significantly contribute to communication performance in the workplace, where the benefits overwhelm the negative effects associated with work interruption. The theoretical and practical contribution and implications of the research are discussed.

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1. Introduction

Social networking tools such as instant messaging (IM), blogs and wikis are widely adopted in society. IM is characterized by the immediate receipt of messages, allowing effective and efficient communication between interlocutors. Although the recent surge of social networking tools has aroused the interest of organizations, the use of IM in the workplace is controversial. The major deterrent to IM application at work is the widespread belief that IM leads to increased interruption and decreased productivity [23,37]. Deloitte [13] indicates that social networking tools are relatively under-utilized with only 41% of 750 responding companies indicating that these tools are used in the workplace. On the other hand, a recent study [19] suggests that IM users are no more interrupted than non-users. It appears that the consequences of IM use for individual employees and organizations are both controversial and as yet unquantified. The answer to the following practical question thus remains ambiguous: *Does IM actually provide value to organizations?* Given these conflicting and incomplete research results, the main objective of this study is to address selected consequences of IM use at work, viz.: interruptions, interactivity and communication quality, in a single research model, so as to empirically investigate the value of IM usage at work.

For many years, a core aspect of the discipline of information systems (IS) has been the design of collaborative tools that facilitate communication in organizations [43] and team work [32]. Communication is an essential activity for human beings, in which social interaction

resembles a business transaction [47]. Therefore the parties involved in an exchange relationship seek, in their negotiations, to maximize their own interests. Various technologies (such as pervasive email, video conferencing and knowledge sharing forums) have been proposed to support communication in the online world so as to enhance work performance. However, it is rarely, if ever, the case that these technologies can facilitate the achievement of the same quality of social interaction that we are accustomed to in face-to-face encounters.

We argue that IM, as a popular communication tool that is widely used in daily life, has the distinctiveness of facilitating near-transparent communication among interaction partners. In principle, the same characteristic is applicable in the workplace where IM tools offer a way to address an inherent deficiency of other online computer-mediated communication (CMC) tools: the limited opportunity for team workers to signify their willingness to communicate with, as well as give instant responses to, each other, thereby developing mutual trust and social networks. Appropriate leveraging of IM tools enables interlocutors to bridge the communication gap between them and thus render teams that use IM high quality work results. However, the positive aspect of IM usage associated with its inherent interactivity is paralleled by the risk of work interruption, indicating that there is a dark side to IM use at work.

Grounded on Barnes's [4] idea of a social network, Rogers and Kincaid [45] characterized a communication network as consisting of "interconnected individuals who are linked by patterned communication flows". They described a communication network analysis that investigates "the interpersonal linkages created by the sharing of information in the interpersonal communication structure" [45], that is, the network. Past research has employed the social network analysis technique to outline social actors' linkages in a network

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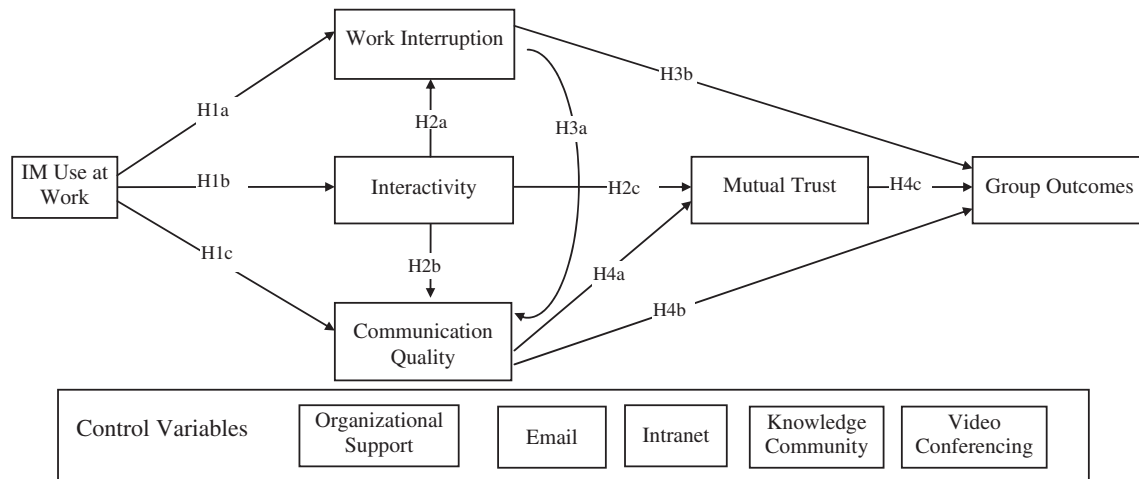


Fig. 1. Proposed research model.

[7,9,43,50]. The resulting network diagram is a powerful way of depicting the connectivity of network members, but the virtualization is inherently constrained to a limited number of actors inside the focal network. In this study, instead of using the social network analysis technique, we draw on the powerful suggestive metaphor of social network theory (SNT), which claims “social networks are based on communication and trust” [6, p. 262], to shape our conceptual model about IM, which we then verify with empirical data.

In parallel with social network research, an abundance of studies on CMC technology and media provides the current research with its theoretical foundations. Among them, two particular perspectives can be identified, viz.: the choice and the performance of technology and media. Research on CMC technology choice, such as media richness theory (MRT) [11], emphasizes using media characteristics (e.g., media richness and social presence) to predict the adoption or choice of CMC technology (i.e., adoption as the *dependent* variable). On the other hand, research on CMC technology performance, such as media synchronicity theory (MST) [14] and the CMC Interactivity Model [32], stresses how technologies influence communication and work performance (i.e., adoption as the *independent* variable). Most studies on CMC technologies have used MRT to predict media choice, but not performance. However, this study is concerned with whether and how the use of IM at work can improve group outcomes (i.e., perceived teamwork performance). Consequently we employ the second perspective of technology/media research, i.e., theories of communication performance, to quantify the major advantages and disadvantages of IM use at work, and investigate its impact on teamwork performance. Through this investigation we intend to contribute to CMC technology research because “few studies ... have examined communication or task performance” of media [14, p.577].

Following this introduction, we explain the theoretical model and related research. We argue that given the highly interactive nature of IM, work interruptions may occur which may negatively influence both communication quality and the development of trust among colleagues. However, the interactive nature of IM may positively contribute to group outcomes through shaping communication quality and trust. Following a description of the survey method and data analysis, we discuss the findings and make suggestions for future research. We conclude the paper with implications and contributions.

2. Theoretical development

In prior research on CMC, theories of communication performance, such as the CMC Interactivity Model (CMCIM) [32] and Media Synchronicity Theory (MST) [14], have been applied to measure the

impact of CMC tools on task performance. We adapt these theories to measure the significance of IM use at work on shaping group outcomes. The choice of mediators – interactivity and communication quality – is based on CMCIM [32] which proposes that they are influenced positively by CMC technologies. Meanwhile, SNT [6] claims that communication and trust form the base of a social network. We contend that IM is a powerful CMC tool that has the potential to enhance employees' social relationships at work where communication quality and mutual trust are fundamental and high quality group work that contributes to organizational success is the ultimate outcome. In addition to the positive effects of IM use at work, work interruption is a principal construct since we examine its negative influence on social networks. We control for the effects of other CMC tools on social networks, such as email, intranets and knowledge communities. Fig. 1 presents the research model. Definitions of the principal constructs are provided in Table 1.

2.1. The effects of using IM at work

Functioning primarily as a social networking tool, IM is widely used for the purpose of “being connected” [30] in both social and work environments [9]. IM allows users to maintain real-time contact with

Table 1
Principal constructs and definitions.

Principal constructs	Definitions	Source
IM Use at Work	The employee's use of IM as a work-related contact and communication tool to ask and answer questions, share files and engage in work-related socialization	[9,43]
Work Interruption	The employee's perception of disturbance from unscheduled IM interaction, or the discontinuity of current work activity because of IM interaction which is not initiated by the focal employee	[19,39]
Interactivity	The extent to which an IM user believes that the IM tool enables interlocutors to actively control interactions and message exchange as they interact with each other, and the degree to which the communication is synchronized	[25,32,46]
Communication Quality	The employee's perception of the quality of communication in terms of being timely, adequate, accurate, complete, interactive and effective	[35]
Mutual Trust	The extent to which trust is placed by the members of the focal network in each other	[29,38]
Group Outcomes	The employees' perceptions of group satisfaction, group outcome satisfaction, and outcome quality	[17]

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