

# An empirical investigation of the factors affecting the adoption of Instant Messaging in organizations

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## Abstract

Instant Messaging (IM) has become one of the most popular applications for many Internet users. As a means of communication, it has not only been influential at the personal level, but has also affected interaction between members of business organizations. Previous studies mainly focus on IM usage at the personal level, and do not investigate IM usage within organizations. This study proposes a model to conform to a scenario of IM usage within organizations based on the decomposed theory of planned behavior. The study presents an empirical investigation of the factors influencing workers within organizations to adopt IM usage. A total of 313 valid questionnaires were returned. A structural equation modeling (SEM) was applied to test the research hypothesis. The results indicate that perceived presence awareness has the greatest positive impact on the attitude of organization workers towards IM, while critical mass causes a negative effect. Perceived usefulness on the other hand had no significant effect. As for subjective norm, peers have the greatest influence while the superior's influence is not significant. In terms of perceived behavioral control, facilitating conditions are more influential than self-efficacy. The study provides implications from both a theoretical and managerial point of view.

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**Keywords:** Instant Messaging; Decomposed TPB; SEM; Perceived presence awareness

## 1. Introduction

In recent years, due to the prevalence of computers and the advancement of Internet technology, computer-mediated communication (CMC) has become more popular and started to change the way people communicate [20,21]. With the emergence of the Internet, asynchronous and synchronous communication tools, such as e-mail, newsgroups, BBS (electronic bulletin board systems), real-time chat, online interaction or conferencing, blogs, and instant messengers

have provided a variety of communication means. Instant Messaging, among all, is the communication means with the fastest growing user population. In Taiwan, the usage rate for Instant Messaging among the online population reaches as high as 87.4%, only second to the United States [37]. The usage of Instant Messaging is not only popular among home users, but also corporate users. Market analysts predicted that corporate Instant Messaging would grow from 18.3 million users worldwide in 2001 to 229 million in 2005 [23]. According to Radicati Group, a technology market research firm in the USA, IM is used in 85% of all enterprises in North America. Internationally, 20% of all enterprise users worldwide utilize IM, and this number is expected to grow to 80% by year-end 2008 [26].

IM software was introduced more than ten years ago in 1996, and its impact has extended from the personal level to the corporate level. However, previous studies of IM focus on

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personal usage [17,29,30], technology development, [13,22] or conceptual introduction [10]. Studies on IM usage in organizations is still in the preliminary stage. Whether to adopt IM application within an organization has become an issue faced by many enterprises; however few studies, especially empirical studies, have discussed this issue [6,36].

The study presents an in-depth understanding of IM usage within enterprises in Taiwan, and reveals the critical factors that effect the adaptation of IM by organizational workers. The study proposes a model to explain and predict the usage of IM of workers in organizations based on the decomposed theory of planned behavior (DTPB) [34], and relevant studies on technology acceptance [4,16,35] and Instant Messaging [6,17,22,36]. Implications and suggestions are provided for the usage of IM within enterprises.

## 2. Theoretical background

### 2.1. Instant Messaging

Faulhaber [11] defines Instant Messaging as a text-based means of near-real-time communication between customers who have registered for the service. Carmeron and Webster [6] on the other hand describe IM as a communication technology that allows employees to send and receive short text-based messages in real-time and to view associates who are also 'online' and currently available to receive messages. McClea et al. [22] label IM as the ability for one to see if a chosen friend, co-worker, or associate is connected to the Internet. If so, one is then able to exchange 'real time' messages with them. This study defines IM as a type of information technology to facilitate communication. IM permits users to edit and confirm a contact list, and allows the user to conduct text-based instant message exchange with other users on the contact list who are logged on to the service. The most popular IM services at the moment are MSN Messenger by Microsoft, Yahoo Messenger by Yahoo!, AOL Instant Messenger and ICQ owned by AOL.

From the relevant literatures on IM [6,17,22], this study summarizes the features of IM as follows:

1. Synchronicity: IM service provides near-synchronized information exchange capability. Senders and receivers of information can participate in real-time communication via IM application and save a lot of time. This is the most convenient and apparent feature of IM.
2. Presence Awareness: The feature that distinguishes IM from other communication tools such as letters, facsimiles, phone calls and e-mails is the present awareness it provides. Presence awareness means that one can know whether the corresponding person is available or not before initiating contact, and is able to know the status of the corresponding person. The status of the corresponding persons would be clearly shown in the contact list of the IM application, such as online, offline, absent, busy, and so on. Compared to other communication tools which cannot possibly acquire information regarding availability prior to sending or calling, the presence awareness of IM further facilitates communication.
3. Chosen: All the subjects in the contact list are chosen and confirmed by the user. This is advantageous for users can confirm that no unfamiliar person or spam message is included in the communication. This feature of IM provides a direct transfer of information without the complication of spam and privacy issues found in e-mail or Internet applications.
4. Interoperability: There are several providers of IM software on the market, and the software is incompatible with each other. For example, ICQ users are not able to communicate with users of MSN Messenger on the same platform. Despite the fact that Microsoft and Yahoo, to compete with other market players such as AOL and Google, are close to a pact that would allow users of their respective Instant Messaging services to exchange messages with one another, lack of interoperability between different IM software is still a major issue for IM application at the moment.

Previous studies on IM mostly focus on issues related to technology development or personal usage. For example, studies by McClea et al. [22] and Fong [13] discuss the problem of lack of interoperability between IM service providers from the technical perspective. The study by Doyle [10] explores other application possibilities of IM. The study concludes that IM could be used as a tool for direct marketing, which means that vendors could communicate directly with consumers in a real-time manner via IM. The study of Segerstad and Ljungstrand [30] targets college students and explores the feature of presence awareness of IM compared to other CMC (Computer-Mediated Communication). The results of the study show that using IM increases presence awareness. The study also finds that students often use IM for teamwork projects, coordination-related social activities, or simply for fun. The study by Ruppel and Fagan [29] was conducted upon library users and posits that users could communicate with librarians by introducing local IM systems. Although the introduction of an IM consulting system could not fully replace the traditional service desk, users could get information faster and better and in turn increase satisfaction towards the library.

Studies of IM application in organizations have emerged in the last couple of years. For example, Cameron and Webster [6] interviewed organization IM users to understand how users choose IM as communication tool and how IM is used in workplaces. The study discovers that critical mass is an important factor. The study also discovers that IM has not only replaced certain communication media, but has become another important communication channel. Huang and Yen [17] attempt to uncover the factors influencing perceived awareness of IM users through work and social activities. The study discovers that friendship development and personalized information are the important factors influencing IM application on social activities, while information richness and information volume affect IM application at workplaces. De Vos et al. [36] conducted surveys and interviews to study how IM is used in organizations. The results indicate that IM has improved communication between its users. The study also discovers several factors influencing whether users accept IM or not.

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