

Mobile Instant Messaging

Mobile Instant Messaging

Mobile Instant Messaging (MIM) is a presence enabled messaging service that aims to transpose the desktop messaging experience to the usage scenario of being on the move. While several of the core ideas of the desktop experience on one hand apply to a connected mobile device, others do not: Users usually only look at their phone's screen — presence status changes might occur under different circumstances as happens at the desktop, and several functional limits exist based on the fact that the vast majority of mobile communication devices are chosen by their users to fit into the palm of their hand. Some of the form factor and mobility related differences need to be taken into account in order to create a really adequate, powerful and yet convenient mobile experience: radio bandwidth, memory size, availability of media formats, keypad based input, screen output, CPU performance and battery power are core issues that desktop device users and even nomadic users with connected network.

Friend-to-friend networks

Instant Messaging may be done in a Friend-to-friend network, in which each node connects to the friends on the friends list. This allows for communication with friends of friends and for the building of chat rooms for instant messages with all friends on that network.

Emotions are often expressed in shorthand. E.g. lol. But a movement is currently underway to be more accurate with the emotional expression. Real time reactions such as (chortle) (snort) (guffaw) or (eye-roll) are rapidly taking the place of acronyms.

Business application

Instant messaging has proven to be similar to personal computers, e-mail, and the WWW, in that its adoption for use as a business communications medium was driven primarily by individual employees using consumer software at work, rather than by formal mandate or provisioning by corporate information technology departments. Tens of millions of the consumer IM accounts in use are being used for business purposes by employees of companies and other organizations. In response to the demand for business-grade IM and the need to ensure security and legal compliance, a new type of instant messaging, called "Enterprise Instant Messaging" ("EIM") was created when Lotus Software launched IBM Lotus Sametime in 1998. Microsoft followed suit shortly thereafter with Microsoft Exchange Instant Messaging, later created a new platform called Microsoft Office Live Communications Server, and released Office Communications Server 2007 in October 2007. Both IBM Lotus and Microsoft have introduced federation between their EIM systems and some of the public IM networks so that employees may use a single interface to both their internal EIM system and their contacts on AOL, MSN, and Yahoo!. Current leading EIM platforms include IBM Lotus Sametime, Microsoft Office Communications Server, and Jabber XCP. In addition, industry-focused EIM platforms as Reuters Messaging and Bloomberg Messaging provide enhanced IM capabilities to financial services companies.

The adoption of IM across corporate networks outside of the control of IT organizations creates risks and liabilities for companies who do not effectively manage and support IM use. Companies implement specialized IM archiving and security products and services like those from Secure Computing, Akonix, SurfControl, and ScanSafe to mitigate these risks and provide safe, secure, productive instant messaging capabilities to their employees.

Practical Use in Enterprise

The popular embrace of IM technology for sharing information has quickly led to organizations adopting IM solutions for the perceived advantages that can be brought by it. As organizations are becoming more information based (McNurlin & Sprague, 2006, p.499) the need for effective knowledge sharing, team working and collaborative environments amongst employees has become vital, especially within more geographically dispersed teams.

Mobile Instant Messaging

Typically IM conversations tend to have a certain "character", they are often short and only cover one topic. Media-switching and multitasking are common throughout, however IM might also be used between established coworkers and friends for longer, more intermittent conversation. In their report of IM use at the workplace Nardi et al. (2000) identifies the four primary functions of IM which are often cited in other reports, these primary functions are:

- Quick Questions and Clarifications
- Coordinating and scheduling tasks
- Coordinating impromptu social meetings
- Keeping in touch with friends and family

IM is perhaps best suited to "Quick Questions and Clarifications" as this is the most often mentioned attribute in other reports. A user can "respond rapidly without the overhead of telephone or FTF interaction. For example, IDC reports, "Users see IM as a medium for quick, semi-permanent 'flashes' that beg a near-immediate response" (Isaacs et al., 2002). Nardi's second and third observations are enabled in part due to the "Presence Awareness" feature of IM clients in which the user knows who is "available". This is the most relevant for colleagues who share the same physical space as each other and even paves the way for other mediums to take up the task of communication e.g. F2F or Phone. The implication is that viable communication of any sort can in some way be encouraged through IM's "Presence Awareness" feature. (Issacs et al, 2002) supports this view, "IM in business might not be the main tool for of communication, it could just be the meeting point for another type of media e.g. conference calls.

Nardi's third and fourth observations focus on the social use of IM, which have also been widely publicized in other report. That IM is used for keeping in touch with friends and arranging social events has led some employers to believe that it is used primarily for this purpose. According to (Issacs et al, 2002) a market study found that "'Fear of losing employee productivity' was the greatest concern of businesses in regards to instant messaging".

The study by (Issacs et al, 2002) goes on to suggest this fear is unfounded as it was found that on average "only 13% of conversations contained personal topics", and "only 6.4% were exclusively personal".

A study published in 2008 in the Journal of Computer Mediated Communication by Garrett and Danziger found that workers who used instant messaging on the job reported less interruption than colleagues who did not. Research showed that instant messaging was often used as a substitute for other, more disruptive forms of communication such as the telephone, e-mail, and face-to-face conversations. They found that the conversations were briefer between co-workers when using instant messaging than with the other forms of communications. Because of its unique setup, instant messaging allows users to control how and when they communicate with their coworkers. This technology gives people the ability to flag their availability or postpone responses to a more convenient time, according to one of the researchers. The study also notes that the ability to manage interruptions is most clear with the modality of text-based IM, and those benefits are less likely with VOIP- or videoconference-based IM.

Review of Products

"IM solutions can typically be categorized into two types: Enterprise Instant Messaging (EIM) and Consumer Instant Messaging (CIM). Enterprise solutions use an internal IM server, however this isn't always feasible, particularly for smaller businesses with limited budgets. The second option, using a (CIM) provides the advantage of being inexpensive to implement and has little need for investing in new hardware or server software. However, in recent years open source IM clients such as Jabber have emerged that provide free EIM grade solutions. (Wikipedia, 2008)

For corporate use encryption and conversation archiving are usually regarded as important features due to security concerns. Sometimes the use of different operating systems in organizations calls for the use of software that supports more than one platform. For example many software companies use Windows XP in administration departments but have software developers who use Linux.

Mobile Instant Messaging

Most people have had experience of using online chat and messaging over the internet whether it is with Microsoft's Windows Live Messenger, Skype or e-mail. One form of chat and messaging currently popular is Bebo. It is a non-corporate form of messaging which allows its user to create and maintain a social network. Libraries use chat applications to communicate with their customers, and Meebo, Trillian, and Morris Messenger are applications commonly used. Morris Messenger is a power based instant messenger, which uses Perl, SQL, and small Java. It accepts input from both staff and regular customers and saves important information in an SQL database built for the system.

Risks and liabilities

Although instant messaging delivers many benefits, it also carries with it certain risks and liabilities, particularly when used in workplaces. Among these risks and liabilities are:

- Security risks (e.g. IM used to infect computers with spyware, viruses, Trojans, worms)
- Compliance risks
- Inappropriate use
- Intellectual property leakage

Crackers (malicious "hacker" or black hat hacker) have consistently used IM networks as vectors for delivering phishing attempts, "poison URL's", and virus-laden file attachments from 2004 to the present, with over 1100 discrete attacks listed by the IM Security Center in 2004-2007. Hackers use two methods of delivering malicious code through IM: delivery of virus, Trojan, or spy ware within an infected file, and the use of "socially engineered" text with a web address that entices the recipient to click on a URL that connects him or her to a website that then downloads malicious code. Viruses, worms, and Trojans typically propagate by sending themselves rapidly through the infected user's buddy list. An effective attack using a poison URL may reach tens of thousands of people in minutes when each person's buddy list receives messages appearing to be from a trusted friend. The recipients click on the web address, and the entire cycle starts again. Infections may range from nuisance to criminal, and are becoming more sophisticated each year.

In addition to the malicious code threat, the use of instant messaging at work also creates a risk of non-compliance to laws and regulations governing the use of electronic communications in businesses. In the United States alone there are over 10,000 laws and regulations related to electronic messaging and records retention. The more well-known of these include the Sarbanes-Oxley Act, HIPAA, and SEC 17a-3. Clarification from the Financial Industry Regulatory Authority ("FINRA") was issued to member firms in the financial services industry in December, 2007, noting that "electronic communications", "email", and "electronic correspondence" may be used interchangeably and can include such forms of electronic messaging as instant messaging and text messaging. Changes to Federal Rules of Civil Procedure, effective December 1, 2006, created a new category for electronic records which may be requested during discovery (law) in legal proceedings. Most countries around the world also regulate the use of electronic messaging and electronic records retention in similar fashion to the United States. The most common regulations related to IM at work involve the need to produce archived business communications to satisfy government or judicial requests under law. Many instant messaging communications fall into the category of business communications that must be archived and retrievable.

Organizations of all types must protect themselves from the liability of their employees' inappropriate use of IM. The informal, immediate, and ostensibly anonymous nature of instant messaging makes it a candidate for abuse in the workplace. The topic of inappropriate IM use became front page news in October 2006 when Congressman Mark Foley resigned his seat after admitting sending offensive instant messages of a sexual nature to underage former House pages from his Congressional office PC. The Mark Foley Scandal led to media coverage and mainstream newspaper articles warning of the risks of inappropriate IM use in workplaces. In most countries, corporations have a legal responsibility to ensure harassment-free work environment for employees. The use of corporate-owned computers, networks, and software to harass an individual or spread inappropriate jokes or language creates a liability for not only the offender but also the employer. A survey by IM archiving and security provider Akonix Systems, Inc. in March 2007 showed that 31% of respondents had been harassed over IM at work. Companies now include instant messaging as an integral component of their policies on appropriate use of the World Wide Web, e-mail, and other corporate assets.

Mobile Instant Messaging

Within the company there is also the risk of employees using instant messaging to release confidential information and project details to an outside source. This issue is best controlled by a combination of written policy and technology. An organization's policies on use of IM in the workplace should be an integral part of the overall computing and network use policies, and should be published and communicated at least annually. In addition to written policy, organizations should implement "gateways" or IM security products to monitor content of inbound and outbound messages. Products from IM security providers (See section on IM security) typically allow administrators to set alerts and enforce policy (i.e. allow or block messages) based on keywords and regular expressions within instant messages.

Employees may also misuse IM to communicate on a personal level with friends and family. This is poor use of a business's time and resources, as the employee's effectiveness will most certainly decrease due to the added distractions. (Licari, J., May 2005). Businesses often use IM security products to monitor and archive IM conversations for the purpose of minimizing this type of productivity drain.

Security and archiving

In the early 2000s, a new class of IT security provider emerged to provide remedies for the risks and liabilities faced by corporations who chose to use IM for business communications. The IM security providers created new products to be installed in corporate networks for the purpose of archiving, content-scanning, and security-scanning IM traffic moving in and out of the corporation. Similar to the e-mail filtering vendors, the IM security providers focus on the risks and liabilities described above.

With rapid adoption of IM in the workplace, demand for IM security products began to grow in the mid-2000s. By 2007, the preferred platform for the purchase of security software had become the "appliance", according to IDC, who estimate that by 2008, 80% of network security products will be delivered via an appliance.

User base

Note that many of the numbers listed in this section are not directly comparable, and some are speculative. Some instant messaging systems are distributed among many different instances and thus difficult to measure in total (e.g. Jabber). While some numbers are given by the owners of a complete instant messaging system, others are provided by commercial vendors of a part of a distributed system. Some companies may be motivated to inflate their numbers in order to increase advertisement earnings or to attract partners, clients, or customers. Importantly, some numbers are reported as the number of "active" users (without a shared standard of that activity), others indicate total user accounts, while others indicate only the users logged in during an instance of peak usage.

Service

User count

Date/source

AIM

53 million active

September 2006

>100 million total

January 2006

Mobile Instant Messaging

Jabber

40-50 million total

January 2007, based on calculations of Jabber Inc

90 million total

Based on calculations of Process-One it uses jabbered as Jabber server software. If it is assumed that ejabberd has a 40% market share amongst public and private open source server deployments, there are 50 million users using open source servers. With Jabber Inc's numbers, this adds up to the 90 million numbers stated here.

eBuddy

35 million total

October 2006, including 4 million mobile users

Windows Live Messenger

294 million active worldwide

November 2007

Yahoo! Messenger

22 million total

September 2006

QQ

40.3 million Peak online (majority in China)

14 May 2008

317.9 million "Active" (majority in China)

14 May 2008

783 million total accounts "active" (majority in China)

14 May 2008

IBM Lotus Sametime

17 million total (private, in enterprises)

November 2007

ICQ

Mobile Instant Messaging

15 million active

July 2006

Skype

12 million peak online

February 2008

309 million total

April 2008

Xfire

10 million total

May 2008

MXit

7 million total (>560,000 outside of South Africa)

10 August 2007. Note that these users are part of the Jabber user base as MXit federates with the Jabber network.

Gadu-Gadu

5.6 million total

June 2006

Paltalk

3.3 million Unique visitors per month

August 2006

IMVU

1 million total

June 2007

Mail.ru Agent

1 million active (daily)

September 2006

Mobile Instant Messaging

Meebo

1 million total

October 2006

PSYC

1 million active (daily) (majority in Brazil)

February 2007. Note that these users are part of the IRC user base, messaging user base consists of a few hundred users

VZOchat

>200,000

October 2007

IM Language

Users sometimes make use of internet slang or text speaks to abbreviate common words or expressions in order to quicken conversations or to reduce keystrokes.