

Instant Messaging In The Enterprise

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IM has great promise, and new capabilities are coming to market. But familiar issues—security and interoperability—still remain to be solved.

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The roots of instant messaging (IM) go back to the bulletin board and chat systems of the 1980s. These were eclipsed by email as it achieved ubiquity in the 1990s, until 1996, when the first free Internet-based IM system, ICQ, was introduced by a small Israeli firm, Mirabilis Ltd.

Since then, the growth of IM in the consumer market has been explosive, with tens of millions of consumers using one or more of the three leading free consumer-grade IM systems: AOL's

Instant Messenger, Microsoft's MSN Messenger and Yahoo! Messenger. ICQ is still free, and also has millions of subscribers, but it's now owned by AOL.

IM is making its way from the home into daily business office use, but not without difficulties. Despite fairly brisk sales of the leading enterprise-grade IM system, IBM/Lotus Sametime, and a worldwide deployment by Reuters of Microsoft's Greenwich IM system, some business users who haven't tried IM still don't "get" the benefit of its immediacy. Some IT shops fear the exposure to viruses, malicious code and other security risks that IM brings with it. Others are waiting for standards and the ability to interoperate with other IM systems. These capabilities are expected to arrive over the course of the next year or so, which means that now is a great time for enterprise users to get better acquainted with IM.

It's Not Email

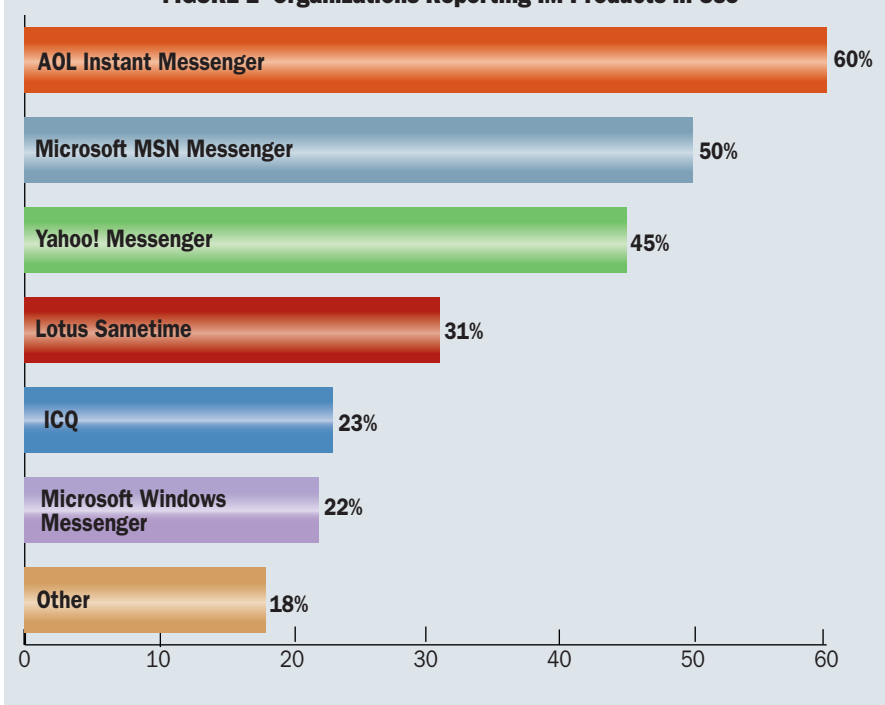
IM permits apparent real-time communication between two or more users through an IM client on each individual's desktop computer, cell phone or other device. The IM clients communicate either peer-to-peer, or via the more conventional client-server model. Although IM is similar to email in that both technologies are used primarily for text-based communication, IM has three key advantages:

■ **Real time communication:** Although email sometimes travels instantaneously, it doesn't always, and it was not designed to do so. IM was designed from the outset to be immediate and conversational.

■ **"Presence" detection:** At any given time, IM users know when other members of their predefined list of contacts (their "buddy list") are online, and their current status (available, busy, on the phone, etc.), and the device on which they are available.

■ **Immediate priority:** IM messages don't get lost as emails can in an

FIGURE 1 Organizations Reporting IM Products In Use



Third-party products can make consumer IM systems more secure

inbox. As email volumes grow, this is of increasing benefit.

Most IM users are consumers, but IM is making significant inroads into the enterprise market. In fact, in a September 2002, survey of about 200 predominantly North American enterprise IT staffers, Osterman Research found 84 percent of respondents reported some IM use within their organizations, up from 63 percent in July 2001. These are casual users installing their own, consumer-grade IM clients, since most enterprise IT shops (71 percent) haven't standardized on a single IM system. As shown in Figure 1, the top three IM consumer clients are also the most popular for casual enterprise use. Only IBM/Lotus Sametime, reported in 31 percent of organizations, is a true enterprise-grade IM system.

Our survey data also show that IT shops are becoming more aware of and more supportive of IM (Figure 2), although IT opposition to internal use of consumer-grade IM is not unfounded. Consumer-grade IM clients can create significant security risks, including users inadvertently downloading malicious code or viruses, or opening firewall holes that can allow hackers to gain access to the corporate network.

Such security concerns prompt a significant percentage of enterprises—23 percent in our September 2002 survey—to completely block user access to public IM networks. Further, we found that the larger the enterprise, the more likely it is to block IM traffic.

Better Than Blocking

While blocking IM traffic effectively eliminates

the security risks of consumer-grade IM, it denies users access to an important new business productivity tool. A better approach would be to investigate the third-party products and enterprise-grade systems on the market and evaluate their capabilities (see "Three Key IM Attributes," p. 61). Depending on how well they meet your security, auditing, logging and directory integration needs, you may want to choose either:

■ **A "hybrid" model:** Consumer-grade clients and public networks, if bolstered with appropriate security and other capabilities provided by third-party products, can provide true enterprise-grade functionality. An important advantage of this approach is that there is no need to replace the client IM infrastructure, which means that users do not need to be retrained on new IM software. Further, enterprises can take advantage of the public networks while gaining the other features that they require.

Leading providers of third-party IM products that add enterprise functionality to consumer-grade IM systems include Akonix Systems, AOL, FaceTime Communications, IM-Age Software, IMlogic and PresenceWorks, among many others.

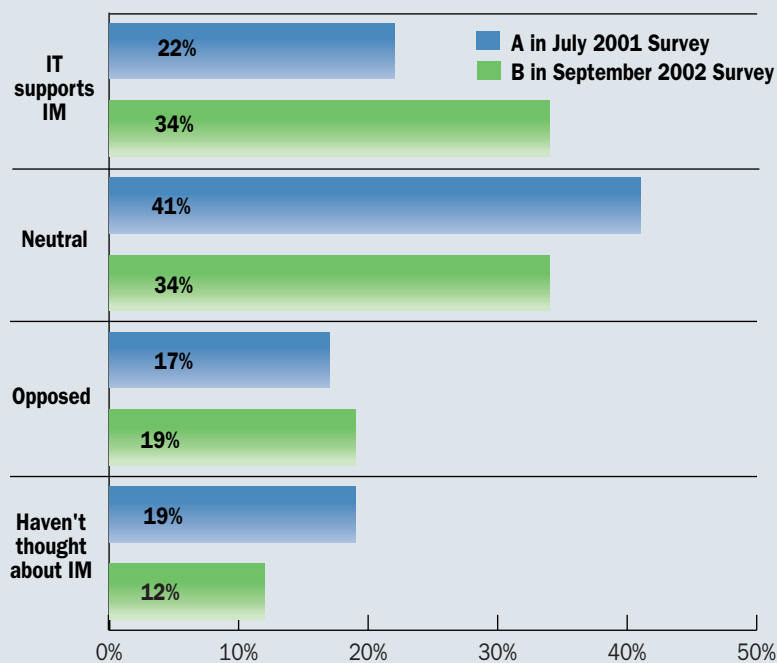
■ **A purpose-built, enterprise-grade IM infrastructure:** There are several IM systems built specifically for enterprise use that provide all the necessary security, auditing/logging and directory integration functions. Leading providers include ApplianSys, IBM/Lotus, Jabber, The Messaging Architects, Microsoft, Omnipod, Sprint, Vayusphere and WiredRed. These systems typically do not make use of consumer-grade clients or the public IM networks.

In a November 2002 survey, we found that enterprises strongly prefer the second option: 72 percent consider deploying a purpose-built enterprise-grade system the most desirable method of deploying IM in their enterprise, while only 24 percent consider the hybrid approach the most desirable. Only 9 percent consider the use of consumer-grade clients and public networks the most desirable option.

An Interoperable Future?

IM use in the enterprise will depend, in large part, on the ability of competing systems to communicate with one another. So far, the leading IM systems do not allow their users to exchange instant messages with users of a competing system. Some IM systems, such as those from Vayusphere, FaceTime and Lotus, permit communication between two or more competing IM systems. However, IM in the enterprise will not become as pervasive as email is today until standards-based interoperability is achieved among all IM systems. The closed-system model simply will not support enterprise deployments in which communication with customers, partners and other external communities using different IM systems is critical.

FIGURE 2 IT Attitudes Toward IM



Two key IETF standards will provide this interoperability—SIP (Session Initiation Protocol) and SIMPLE (Session Initiation Protocol for Instant Messaging and Presence Leveraging Extensions). While SIP defines methods for initiating, modifying and ending sessions between users in an IP network, SIMPLE is a means of

notifying IM users of other users' changes in status on a SIP-based network. These standards are gaining momentum because they are supported by a growing number of leading vendors, including AOL, IBM/Lotus and Microsoft. IBM/Lotus' Sametime and Microsoft's upcoming Greenwich product, for example, are among the enterprise-

The IETF's SIP and SIMPLE protocols will help improve IM interoperability

Three Key IM Attributes

In order to be used most effectively in the enterprise, an IM system must possess three basic attributes: security, auditing and logging capabilities, and integration with a corporate directory. Other features, as discussed below, are also important considerations, depending upon the size of the enterprise, the applications for which IM will be used and so forth.

■ **Security:** The consumer-grade IM systems, such as those of AOL, ICQ, MSN and Yahoo! present a number of security-related problems when used in an enterprise setting, including:

- No end-to-end encryption for message contents sent between users, leaving this content open to interception by third parties.

- Lack of compliance with corporate policies; for example, an IT administrator cannot restrict certain features of consumer-grade IM clients, such as file transfer privileges or the ability to view presence, to only particular users.

- Inability to authenticate users against corporate directories or other enterprise applications.

- Inability to filter downloaded files for viruses or other malicious content.

- Inability to thwart the destructive behavior of rogue protocols that can defeat firewall-based security systems.

A true enterprise-grade IM solution, therefore, must be able to encrypt IM traffic between senders, filter downloaded content and provide authentication capabilities and adherence to corporate policies. Current products that provide these capabilities include AOL's AIM Enterprise Gateway, Divine, Inc.'s MindAlign, Endeavors Technology's, Magi Enterprise and IBM/Lotus' Sametime.

■ **Auditing and Logging:** Consumer-grade IM systems don't log all IM traffic that flows on the network, meaning that IM conversations simply disappear into the ether after they are concluded. A key requirement for enterprise-grade IM systems, therefore, is that IM conversations be logged and archived, typically at the server, for later processing or retrieval.

As with email, archiving of IM traffic is becoming increasingly critical because of the need to maintain a record of conversations with customers, co-workers and others. In the financial services industry, for example, there are legal

requirements imposed by the Securities and Exchange Commission, the National Association of Securities Dealers and others to maintain a record of all communications with clients, including IM-based conversations. Other requirements, including the Health Insurance Portability and Accountability Act of 1996 (HIPAA) and a variety of federal and state statutes, are imposing an increasing burden on enterprises to maintain an archive of all internal and external communications, regardless of the medium in which they are created and transmitted.

■ **Directory Integration:** Consumer-grade IM systems do not integrate with enterprise directories, meaning that organizations cannot enforce naming conventions for their users when they use these systems. Further, as mentioned, the lack of directory integration means that an enterprise cannot restrict or enable access to particular IM features through the directory, cannot authenticate users through the directory using the same passwords they use with other corporate systems, and cannot modify access privileges through the existing directory infrastructure as is possible with corporate email systems. The ability to enforce naming conventions and to grant permissions is a key requirement for an enterprise-grade IM system.

■ **Other Features:** There are a variety of other features that are important, if not necessarily critical, for enterprise-grade IM systems, including:

- The ability for local IM traffic to be routed locally instead of across the network. For example, if two employees within the same building are communicating via IM, routing this traffic locally reduces the burden on the extended network and also provides better security because the traffic does not exit the corporate firewall.

- Because IM is a real-time application that constantly monitors the presence of everyone on the network, the infrastructure demands of IM can be more stringent than those for email. Consequently, scalability of the IM infrastructure can be an important consideration, depending on the size of the organization.

- The ability automatically to include disclaimers and other standard text in instant messages is important for many enterprises, particularly those that are providing advice or counsel, such as financial services firms or law firms □

IM won't take the place of email, but it will be pervasive in about five years

grade IM systems that either support, or soon will support, these standards.

Beyond basic interoperability among IM systems, enabling text-based chat and file transfer functions, two types of future IM applications for enterprise customers could further accelerate use of the technology:

■ **Application-human interaction:** Today, most enterprise IM involves the transmission of information from one human to another. However, as is already the case with products such as Sprint's Universal Application Messaging or Vayusphere's Instant Response Server, future IM systems will allow automated systems as information sources in an IM infrastructure.

For example, a salesperson in the field could include the company's inventory system on his or her wireless device's IM contact list, then use it to request information about the number of units of a product that are in stock. An airline reservation system could send all passengers booked on a flight an instant message about the flight's status, and provide them with options for talking with or "IMing" customer service representatives to arrange changes in their itineraries. A remote user could send an instant message to an enterprise directory, requesting the fax number of a colleague. In short, IM systems will permit humans and automated systems to interact with each other in important new ways, speeding the transfer of information to users at much lower cost than traditional methods that require the development of custom interfaces, APIs and so forth.

■ **Enhanced collaboration:** Presence detection in IM systems could be the springboard into more collaborative work environments and *ad hoc* workgroups. Users of instant messaging already can see if someone on their contact list is online. Future capabilities, already available from vendors like Internet Access Methods, will include the ability to see not only who is online and their status, but also the applications or documents they have open.

For example, if a manager working on the departmental budget needs a subordinate's input, the latter could receive an IM that would automatically open the document and allow both individuals to work on the document simultaneously. Again, IM could make this a much simpler activity than was envisioned by previous groupware software products. Many IM systems already provide conferencing and meeting capabilities that permit *ad hoc* collaboration between individuals or groups of users in order to conduct meetings, share applications, share electronic whiteboards and so forth; future products will provide much more seamless integration.

IM is currently used in some call center and other customer service organizations, and this use is expected to grow. As more people become familiar with IM and begin using it, new applications will take hold.

Conclusion

IM won't replace email, just as email didn't replace telephone calls. In the early days of email, people asked why they would want to send email when they could call or fax if the matter was urgent, and send a letter if it wasn't. Today, of course, everyone uses email regularly, but they still make phone calls and send faxes and letters. In a few years, they will also be using IM.

In fact, within about five years, we anticipate that IM will become as pervasive as email is today, with virtually 100 percent saturation in the enterprise. Because applications for IM will proliferate and will replace or enhance many existing business processes, IM will become as critical as email for many enterprises □

Companies Mentioned In This Article

- Akonix Systems (www.akonix.com)
- AOL's Instant Messenger (www.aim.com)
- ApplianSys (www.appliansys.com)
- Divine, Inc.
(http://divine.com/so/interact_new/interact-3-1.asp)
- Endeavors Technology
(www.endeavors.com)
- FaceTime Communications
(www.facetime.com)
- IBM/Lotus Sametime (www.lotus.com/products/lotussametime.nsf/wdocs/homepage)
- ICQ (www.icq.com)
- IM-Age Software (www.im-age.com)
- Imlogic (www.imlogic.com)
- InternetAccess Methods
(www.iamethods.com)
- Jabber (www.jabber.com)
- Microsoft Greenwich (www.microsoft.com/presspass/features/2002/Oct02/10-08/realtime.asp)
- Microsoft's MSN Messenger
(www.messenger.msn.com)
- Omnipod (www.omnipod.com)
- PresenceWorks (www.presenceworks.com)
- Sprint (www.sprintesolutions.com/solutions/messaging/index.jsp)
- The Messaging Architects
(www.gwtools.com)
- Vayusphere (www.vayusphere.com)
- WiredRed Software (www.wiredred.com)
- Yahoo! Messenger
(www.messenger.yahoo.com)