# BREAKING
## THE GRAY FLANNEL CEILING

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Mobile IM has an image problem,
but IT groups that dismiss it as a
consumer-focused novelty could miss out
on a serious business productivity tool

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{ BY PETER RYSAVY }

GIVEN THE HUGE PENETRATION OF MOBILE PHONES—1 billion sold globally in 2006 alone, according to Strategy Analytics—and the fact that an increasing number of knowledge workers are finding desktop instant messaging indispensable, one might reasonably conclude that mobile IM is poised to be The Next Big Thing in enterprise communications. One would be mistaken, however, according to some pundits: The Radicati Group reports only 2.3 million U.S. enterprise mobile IM accounts in 2006, compared with 62 million using desktop IM. The firm expects just 10 percent of enterprise IM accounts to be mobile by 2010.

We don't buy it. For enterprises, scorning mobile IM means leaving productivity increases on the table. This is a technology too valuable to be left to teenagers—widespread use could make some communications inefficiencies, including voicemail and phone tag, as obsolete as wired telephones. Some carriers have unified communications initiatives in the works as well. And speaking of teenagers, when Forrester Research asked 4,548 students between the ages of 12 and 21 about their No. 1 must-have mobile phone feature, IM was the top choice, nearly twice as popular as mobile e-mail. These are your future employees.
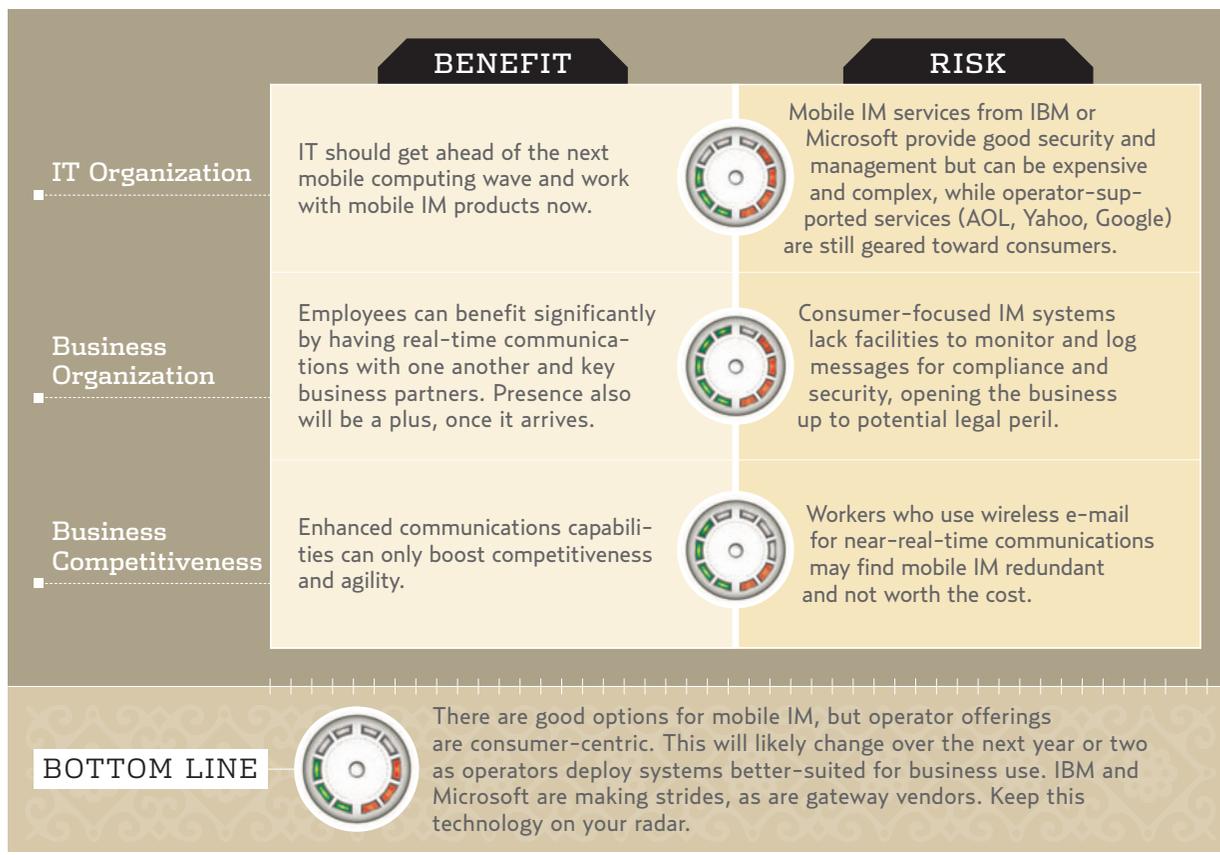
## REASONED OPPOSITION

Are there hurdles to bringing mobile IM into your enterprise? Yes. We spoke with leading IM vendors, including AOL and IBM, and uncovered complications that have inhibited widespread business use. Key vendors and operators are focused on selling to consumers, while enterprises rightly perceive difficulty in securing and managing mobile IM communications. But there are ways to address the security, compliance and management realities enterprises face.

If you can lay the groundwork now and plan on a rollout in 12 to 24 months, the picture will improve considerably thanks to cellular operators. These providers plan to host an expanding variety of enterprise-class IM services, much as they currently provide wireless e-mail systems for business use.

Longer term, operators are deploying complex IP multimedia infrastructures based on IP Multimedia Subsystem. IMS lets IT combine communications sessions, such as those for IM, voice and video, and provides access to user presence and location information. Look to operators to make IMS interfaces available for enhanced service offerings that let users seamlessly move from IM to a VoIP or interactive video session. All the companies we interviewed said they're looking at

# IMPACT ASSESSMENT: MOBILE IM

| | BENEFIT | RISK |
|---|---|---|
| **IT Organization** | IT should get ahead of the next mobile computing wave and work with mobile IM products now. | Mobile IM services from IBM or Microsoft provide good security and management but can be expensive and complex, while operator-supported services (AOL, Yahoo, Google) are still geared toward consumers. |
| **Business Organization** | Employees can benefit significantly by having real-time communications with one another and key business partners. Presence also will be a plus, once it arrives. | Consumer-focused IM systems lack facilities to monitor and log messages for compliance and security, opening the business up to potential legal peril. |
| **Business Competitiveness** | Enhanced communications capabilities can only boost competitiveness and agility. | Workers who use wireless e-mail for near-real-time communications may find mobile IM redundant and not worth the cost. |

**BOTTOM LINE**  There are good options for mobile IM, but operator offerings are consumer-centric. This will likely change over the next year or two as operators deploy systems better-suited for business use. IBM and Microsoft are making strides, as are gateway vendors. Keep this technology on your radar.

IMS, but none indicated specific development efforts, so it's unlikely we'll see IM services based on IMS before 2008—and even that may be optimistic.

## BY ANY OTHER NAME

It's a deceptively simple question: What qualifies as mobile IM? What about SMS? Short Message Service for cellular networks does involve messaging and mobile devices. However, SMS is not mobile IM because it lacks the key attributes of IM, namely presence information, buddy lists and a session orientation.

And though today's wireless e-mail systems deliver e-mail in close to real time, and wireless e-mail users often engage in back-and-forth messaging that closely resembles the instant variety, this is not mobile IM. As

Widespread use of mobile IM could make some communications inefficiencies, including phone tag, as obsolete as wired phones.

with text messaging, e-mail does not provide the recipient's presence status, nor an expectation that he will immediately see the message.

The three main categories of mobile IM available today are the extension of consumer-oriented IM services like AOL IM, Google Talk, MSN Messenger and Yahoo Messenger to mobile devices; the extension of enterprise IM systems, such as those from IBM and Microsoft, to mobile devices; and operator-hosted service offerings. We're also seeing innovative gateways that riff on Research In Motion's middleware approach. Hybrid methods, such as running IM over SMS, should be approached with caution.

Operator-hosted IM is most common in Europe and Asia. U.S. providers aren't yet offering IM services, instead seeking to promote and enable the third-party services, such as AIM and Yahoo, that are already firmly entrenched in U.S. markets.

The most common architecture for delivering mobile IM, used by most cellular operators today, implements a client on the handset that communicates with a gateway hosted in the operator network. This gateway operates as a proxy to Internet services such as AOL IM, Yahoo Messenger, MSN Messenger and Google Talk. IM service providers supply these gateways, and communications between client and gateway is based on a standard from the Open Mobile Alliance called IMPS. The Instant Messaging and Presence Service employs protocols optimized for wireless networks. This approach lets mobile users connect to the IM service, see which of their "buddies" are available, and send and receive IMs.

For consumers, this is peachy. For enterprises, there are serious limitations.

As with running consumer IM on desktops, IT needs methods to secure and manage communications that may be considered business records. Unfortunately, this requires a separate IM governance infrastructure that can't work with public IM services. Because mobile IM traffic goes to the operator gateway, then directly to the service provider, there's no way to route it to your enterprise IM gateway.

Another complication for companies looking to use consumer-grade mobile IM for business is that consumer IM clients typically are installed on consumer-oriented handsets, while clients for smartphones are hard to come by. AOL, for example, doesn't provide IM clients for Treos or Windows Mobile phones.

The third method is the only choice for companies with tight security and compliance requirements. Enterprise IM systems from the likes of IBM Lotus or Microsoft provide clients for all major smartphone platforms, and their mobile clients communicate directly with IM servers located on your network. Security capabilities are robust. For the IBM Lotus Sametime Mobile client, you can depend on the client's session encryption, or use it in combination with IBM's Lotus Mobile Connect software that provides general-purpose VPN capabilities.

Because Sametime Mobile client protocols operate over IP, you could also use other VPN clients, but check to see whether your VPN vendor supports required handheld platforms. Microsoft's Communicator Mobile product also encrypts communications. There's no need for VPN software unless you're also trying to secure other mobile applications. Microsoft and IBM IM products do not interoperate with each other.

We're also beginning to see mobile IM gateways that you can install in your network. In this case, you use the gateway vendor's clients, which communicate with

## TINY KEYS, FAST DATA

**THE USABILITY** of mobile IM revolves around keyboards and network responsiveness. Just as with wireless e-mail, most employees will prefer using phones that have keyboards. Of course, young users who've become adept at sending SMS messages on numeric keyboards can apply their skills to IM immediately. Regarding speed, with today's evolved 2G and 3G data networks, IM systems that use live data sessions are quite responsive, with messages traversing the network in seconds.

the gateway, which proxies the session to your IM server. NeuStar's Mobile Messaging Gateway and Sybase's One Bridge Messenger are two examples. See "Mobile IM Architectures," below, for a comparison of consumer-oriented mobile IM and enterprise mobile IM, with and without a gateway.

### BUYER BEWARE

IM service providers and vendors may suggest hybrid approaches for mobile IM. Unfortunately, for most companies, they're not ideal. One method is to forward IM messages to users' phones using SMS. Public IM service providers let you configure this option using a Web page, but it's an awkward approach because SMS isn't session-oriented, and you'll lose benefits such as real-time presence information.

Another possibility is to use a mobile browser to log in to your IM service, where you engage in sessions through the browser. Compared with using an IM client, this is a slow way of interacting with the service because of wireless network delays, though longer sessions don't cost more since data plans are based on data usage or on a flat rate. It may be better than no access for occasional use or when a mobile IM client is not available, but in general, steer clear.

### PRESENCE TENSE

Most desktop IM systems can determine that a user isn't at his machine, but neglected to set an away message, because the user isn't interacting with his computer. But a mobile user is often "present" even if she's not currently interacting with her mobile phone. This
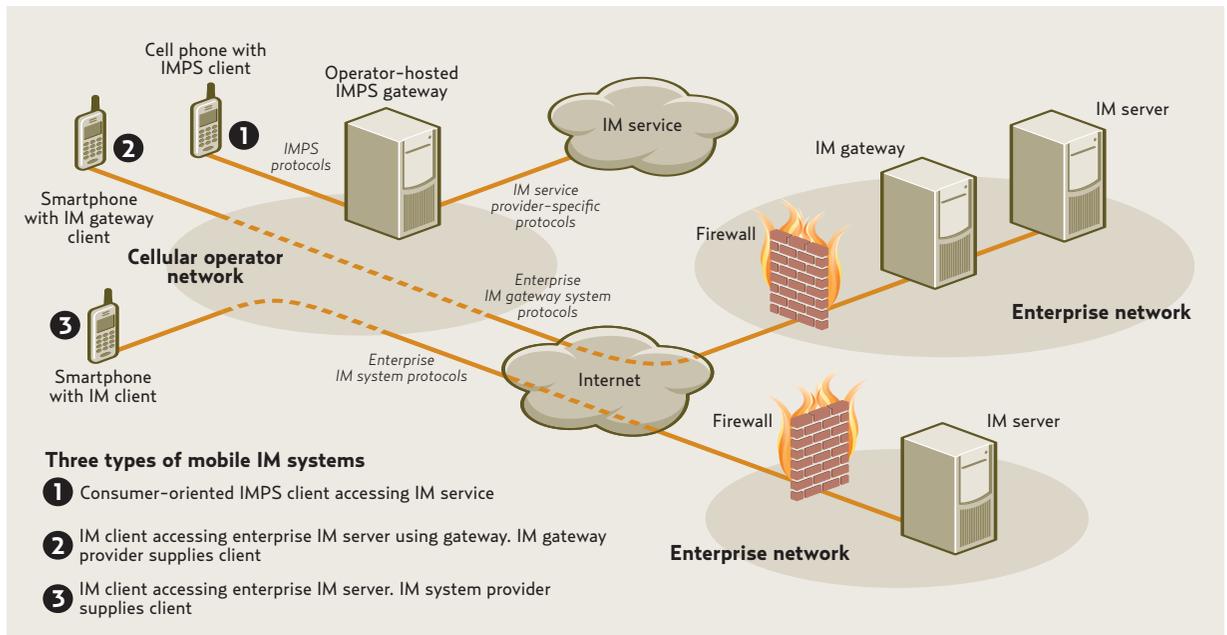
### SMARTER THAN A SMARTPHONE

**IF "MOBILE COMPUTING"** to your workforce means laptops, not smartphones, you have better IM options. With VPN remote-access, for example, you can tunnel desktop IM sessions to your enterprise network, and have these sessions managed by third-party IM management servers, such as those from Akonix Systems. The traffic flow is thus from your client, through the VPN tunnel, to your enterprise network, through your IM management server, and only then back out to the Internet to an IM service provider, such as AOL. This may seem complicated, but it's no different from how many companies route Internet access for their mobile laptop users.

is one area where we expect future innovation. Imagine if richer presence could be automated by, say, detecting whether a person is in physical proximity to the device using approaches such as near-field radio communications, a radio technology that works over very small distances. Near-field communications could let the phone communicate with some kind of badge the user wears, and if the user is out of range, the phone would know. However, automatically and reliably knowing if a person is truly "available" will likely remain a challenge.

Another aspect of presence is knowing a user's

## MOBILE IM ARCHITECTURES



**Three types of mobile IM systems**

1. Consumer-oriented IMPS client accessing IM service

2. IM client accessing enterprise IM server using gateway. IM gateway provider supplies client

3. IM client accessing enterprise IM server. IM system provider supplies client

geographic location. Driven by government mandates that location information be provided for emergency calls, location-based services are slowly becoming available for cellular networks. Despite significant privacy concerns that must be addressed by appropriate opt-in policies, IM services will soon be enhanced by showing the physical locations of users. In fact, Lotus Sametime Mobile from IBM accomplishes this in an innovative fashion by monitoring IP subnet information.

## ONE SWEET BERRY

While BlackBerry users typically engage in real-time wireless e-mail, RIM also provides impressive IM support. Downloadable clients support Yahoo, Jabber, Google, IBM Sametime, Novell GroupWise and Microsoft Live Communications Server. And these clients, rather than communicating directly to a provider's IM service, set up an encrypted tunnel to the BlackBerry Enterprise Server, which then proxies communications to the IM services. This provides a managed and secure IM session, whether using enterprise IM or a service provider system. Because communications funnel through the BES, RIM can provide a complete audit trail and secure communications between BES and client.

RIM also provides an IM service, called BlackBerry Messenger, that allows direct BlackBerry-to-Black-Berry links. With BlackBerry Messenger, communications are possible even if your BES is unavailable;

**RIM'S BLACKBERRY** provides secure IM sessions and a complete audit trail.

this can come in handy as backup connectivity for emergency situations.

If it sounds to you like RIM has covered all the bases—lots of clients, security, audit trail—we agree. But ironically, BlackBerry aficionados are more likely to be using wireless e-mail than IM.

## PRICE POINTS

All large U.S. cellular operators have comparable offerings—namely, support for access from mobile handsets to IM service providers such as AOL, ICQ, MSN and Yahoo. What's interesting, however, is service pricing: If you use the operator's IM gateway to access an IM service provider, the operator will charge per message. If you use your own IM client to communicate directly to an enterprise IM server or an IM service provider, the operator will charge based on an IP data plan. If you have a data contract for other applications, especially an unlimited plan, the direct approach should prove more economical.

To simplify pricing, the per-IM cost is typically the same as SMS, $0.15 per message. Any serious IMer will want a bucket plan. As of press time, AT&T (formerly Cingular) charges $4.99 per month for 200 messages, $19.99 for 3,000 messages. T-Mobile's monthly charges are $4.99 for 400 messages, $9.99 for 1,000 messages and $14.99 for unlimited messaging. AT&T indicated that its emphasis to date has been on consumer offerings, and that while business IM looks to be an important future application operators are

# SMS, E-MAIL AND IM COMPARED

|  | SHORT MESSAGE SERVICE | WIRELESS E-MAIL | MOBILE IM |
|---|---|---|---|
| Description | Text messages sent to/from handsets | General purpose e-mail sent to/from handsets, usually smartphones | Short interactive messages |
| Size | About 160 characters | Any size, including attachment | No size restriction per message, but generally short |
| Presence information | ○ | ○ | ● |
| Expectation of availability for session | ○ | ○ | ● |
| Wireless transport | Cellular control channels | IP packet data | Usually IP packet data, but can operate over SMS channel or in microbrowser session |
| Addressing | Mobile phone number or e-mail address | E-mail address | IM handle |
| Interoperability | Any mobile phone or e-mail address | Any e-mail address | Some interoperability across different IM systems |
| Location information | None | None | Some availability, greater availability in the future |
| Business/consumer emphasis | Consumer emphasis with some business use | Business emphasis | Consumer emphasis, but evolving to include business emphasis |

●=Yes ○=No

likely to support, no business-specific offers are yet available. Our educated guess is that this will change within a year.

## COMPARING THE PROVIDERS

We spoke with AOL, IBM, Microsoft, RIM and Sybase to find out what offerings they have today for those seeking mobile IM, and what's on their road maps. Our discussions revealed that business IM is on these providers' radar, but not all have decided what the future will look like. What is certain is that catering to business will mean channeling IM traffic through management gateways, within the enterprise or operated by third parties or the providers themselves. But for now, service providers like AOL can't deliver the level of security and management enterprises need for widespread mobile IM.

We do see glimmers, however. For example, AOL highlighted its AIM Pro client, which offers features such as encrypted communications and names based on a "user@domain.com" format. The company also stressed its close affiliation with WebEx, which offers AIM Pro service extensions, including security and management, through a software-as-a-service business model. These services are now available to laptop users with wireless-data connections, but they're not offered for handhelds. We expect this to change as more enterprises start using mobile IM.

## IBM, MICROSOFT ON THE MOVE

We were impressed by the degree of effort IBM has put into its Lotus Sametime Mobile client. Not only does the Sametime client communicate directly with a Sametime server using wireless IP services, it also operates on a wide range of devices, including Windows Mobile, BlackBerry and Nokia Symbian E Series. Palm OS as used on Palm Treos (now called Garnet OS) is not supported.

IBM told us that most Sametime customers use Lotus Notes/Domino, but Sametime provides interoperability with AOL IM, Yahoo Messenger and GoogleTalk. Not surprisingly, IBM does not support Microsoft's Live Communications Server.

For security and mobility management, you can operate Sametime Mobile over IBM's Lotus Mobile Connect mobile VPN. If you're using Lotus Mobile Connect for other mobile VPN functions, this is a good solution. Otherwise, it's a lot of infrastructure to deploy just for IM.

> ### Business instant messaging is on many providers' radar, but not all have decided what the future will look like.

One highly innovative capability Sametime Mobile has that we did not find in rival products is location awareness. The client can identify its approximate location by looking at the IP address. If any other individual using that IM server has named that location, the IP address will trigger that location name automatically. This way, IM users can see where other Sametime users are. This is particularly effective if your employees operate from a finite set of locations, especially if they're on WLANs. However, it doesn't work for cellular networks where nationwide operators assign IP addresses dynamically from a pool that covers the entire country.

Microsoft's approach is similar to IBM's. Its IM client, Communicator Mobile, communicates with the company's IM server, Microsoft Live Communications Server 2005, and provides IM interoperability with MSN, AOL and Yahoo. The company told us it will deliver a new IM server this year, Office Communications Server 2007. OCS 2007 will provide a richer presence model for reflecting user availability; improved support for multiparty IM; and integration with the Exchange calendar, VoIP and on-premises Web conferencing. The company didn't elaborate on its presence plan. With a SIP (Session Initiation Protocol) stack integrated into its forthcoming Windows Mobile 6, it's likely that Microsoft will also offer enhanced voice and IM integration.

Microsoft told us it's not necessary to run a VPN to secure mobile IM communications via OCS; rather, IT can enable a TLS (Transport Layer Security) option within the product. Microsoft makes its client avail-

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## FRIEND AT THE GATEWAY

**BUSINESSES THAT USE** public IM services but need to secure and manage their IM communications may turn to IM security products from companies such as Akonix Systems, FaceTime Communications, Secure Computing and Symantec (see our review of these appliances at *nwc.com/go/0430im*).

These devices keep archives of all IM traffic on a corporate network and can ensure compliance with IM policies, restrict communications to authorized endpoints and protect against IM-borne attacks. Security gateways also let companies comply with regulatory requirements.

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able for Windows Mobile devices only, and pointed us to third parties for clients that support other platforms, including RIM BlackBerry and NeuStar.

Bottom line for IBM and Microsoft: If you're already using their enterprise IM systems, extending these in a secure and managed fashion to mobile workers is a snap. Otherwise, you may have better luck with open gateways.

## BRIDGE TO MOBILITY

Sybase significantly expanded its mobile application support capabilities when it acquired Extended Systems and integrated Extended's technology into its Sybase iAnywhere suite, which includes wireless e-mail, mobile device management, security and database functions. The latest addition, just becoming available as we went to press, is One Bridge Messenger, an enterprise-hosted IM gateway that supports multiple services, including Lotus Sametime, Microsoft Live Communications Server and the forthcoming Office Communications Server, Google Talk, ICQ, Jabber XMPP systems, and SIP/SIMPLE systems. Clients are available for Palm OS, RIM BlackBerry, Symbian and Windows Mobile. This product will be of greatest interest to companies looking at iAnywhere for other functions, such as wireless e-mail.

Similar to Sybase's approach, NeuStar offers its Enterprise Gateway. This gateway can communicate with Live Communications Server, as well as Sametime or Jabber XMPP servers. Client support includes Windows Mobile, J2ME Java, Symbian, BREW (Binary Runtime Environment for Wireless), Palm OS and microbrowser approaches.

Finally, those using Jabber for enterprise IM can enjoy third-party support for virtually every mobile platform, including J2ME Java, Palm OS, RIM BlackBerry, Symbian and Windows Mobile.

Available gateways let you link mobile IMPS clients and XMPP IM networks, such as those used by Jabber XCP and Google Talk. The Extensible Mes-

## WHAT, US INTERACT?

**THE MOBILE IM PROTOCOL** standardization picture is largely the same as the desktop IM protocol standardization picture—getting better, but still ugly.

Mobile-specific initiatives include the IMPS protocol for communications between a handset client and an operator-hosted gateway, and an effort by the GSM Alliance. The GSMA initiative involves 15 leading mobile-phone operators looking to create interoperable IM networks that are cellular-operator hosted. This is of less interest in the United States, where operator emphasis is on enabling third-party services, but for other countries it will ensure that an IM user on one operator-hosted service will be able to communicate with users on other operator-hosted networks.

saging and Presence Protocol was standardized by the IETF for IM networks in 2004 and is being selectively adopted by the IM industry. Broad adoption is hampered by some companies using proprietary protocols, and others using SIP-based protocols. XMPP provides security provisions, though management features, such as logging, for example, are unique to specific vendor offerings.

Much as IM functions are becoming richer on the desktop, expect similar advances on mobile devices. It points to an exciting new world of communications: Our mobile IM systems may clearly spell out who is available, where, and how best to reach them. Maybe then we'll no longer need voicemail—now that would border on a divine blessing. ∎

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## MOBILE IM FEATURES: PRESENT AND FUTURE

| | DESKTOP IM SYSTEMS | CURRENT MOBILE IM SYSTEMS | MOBILE IM SYSTEMS BY END OF 2008 |
|---|:---:|:---:|:---:|
| Presence information | ● | ● | ● |
| Text chat | ● | ● | ● |
| Voice chat | ● | ○ | ● |
| Video | ● | ○ | ● |
| Enhanced presence information | ○ | ○ | ● |
| IM session can launch voice call | ○ | ○ | ● |
| Location information* | ○ | ○ | ● |
| ●=Yes ○=No  *With appropriate controls | | | |