

November 9, 2006

# Unified Communications: What You Need To Know

by Elizabeth Herrell

TECH CHOICES

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Evaluating Providers And Products For SIP-Based Business Solutions

by **Elizabeth Herrell**

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### EXECUTIVE SUMMARY

Unified communications (UC) has become the inclusive name for a converging set of voice, data, and video infrastructure services that integrate with common business applications to reduce typical communication bottlenecks. UC link communication technologies (e.g., voice) with collaboration services (e.g., email, calendaring, instant messaging, and presence) to improve information workers' ability to interact with coworkers more quickly and effortlessly. Functionality enabled by session initiation protocol (SIP) eliminates communication channel silos and provides services like presence, integrated messaging, multimodal conferencing, desktop call control, and asynchronous collaboration integration to accelerate business responsiveness. Although UC vendors offer clear visions of their product road maps, they do not always make apparent what is available today via a fully integrated, unified platform versus what remains piece-parts, to be integrated at some point in the future. This report will help IT executives, and CIOs better understand the current state of major providers and their marketing approaches.

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Forrester surveyed 10 vendor companies, including: Alcatel, Avaya, Cisco Systems, Genesys Telecommunications Laboratories, IBM, Microsoft, Mitel Networks, Nortel Networks, Oracle, and Siemens.

#### **Related Research Documents**

["Collaboration Trends 2006 To 2007"](#)  
August 16, 2006, Trends

["How To Justify IP Communication Cost"](#)  
February 28, 2006, Best Practices

["SIP The Next Frontier For Converged Applications"](#)  
August 1, 2005, Trends

## TARGET AUDIENCE

IT infrastructure and operations professional, enterprise architecture professional, chief information officer

## UNIFIED COMMUNICATIONS DRIVES BUSINESS AGILITY

Businesses now have the ability to solve business problems more quickly and eliminate communication delays that impact business productivity. With unified communications (UC), workers collaborate with colleagues anywhere to solve business problems on an immediate basis. UC solutions eliminate technology silos and integrate applications to provide richer functionality for existing desktop and communication applications. Organizations achieve tangible savings by reducing communication obstacles caused by a distributed workforce and respond more quickly to customers and time-critical situations. As organizations adopt real-time response as the norm for improving business processes, communication delays and project postponements due to the inability to reach others will no longer be an acceptable means to conduct mission-critical business functions.

## Convergence And Integration Define UC

UC link communication technologies such as voice and video with collaboration technologies like email, calendars, team workspaces, Web conferencing, and instant messaging (IM). Additionally, UC provides advanced features which include integrated messaging, multimodal conferencing, and access to mobile devices. UC provides a breakthrough in linking synchronous and asynchronous technologies, but current offerings are still somewhat limited in scope. With the variance in current products, some vendors use the term UC for individual applications that are currently only loosely connected by shared services and not yet fully integrated. Additionally, despite an open standards platform, many products lack the ability to fully interoperate due to vendors adjusting and modifying standards to meet specific performance objectives.

## Session Initiation Protocol Is An Essential Component For UC

Session initiation protocol (SIP) and related protocols, such as SIP for Instant Messaging and Presence Leveraging Extensions (SIMPLE), are major enablers in the development of applications that connect workers across multiple locations, using numerous devices with only a single address. SIP is platform- and device-independent, connecting people to people and people to applications across multiple channels and modalities. SIP-based applications link voice and data devices and allow businesses to connect people, regardless of location, in an intelligent manner quickly, without second-guessing their location. For example, telephones, pagers, PDAs, cell phones, and PCs all have different numbers and supporting services that are not connected. With UC, a single address simultaneously or sequentially sends either voice or text messages to all devices using SIP servers.<sup>1</sup> This streamlines business communications and promotes faster communication among employees, especially those who are traveling or working at distant locations.

## MULTIPLE PROVIDERS OFFER UC SOLUTIONS

Several providers now offer UC solutions, which indicates the emphasis vendors are putting on this convergence. Vendors that offer UC solutions include:

- **Communication and network equipment companies.** Vendors included in this category are Alcatel, Avaya, Cisco Systems, Genesys Telecommunications Laboratories, Mitel Networks, Nortel Networks, and Siemens. The go-to-market strategy for this group is to offer intelligence in the infrastructure or networks to deliver business performance with a full range of IP telephony features and applications such as presence, conferencing, and unified messaging. This group of vendors typically partners with Microsoft and/or IBM which provide the collaboration tools like email, calendaring, IM, and team collaboration. In addition to supporting IBM's and Microsoft's platforms, Cisco also offers its own desktop collaboration tools.
- **Leading collaboration platform vendors.** In this category, Microsoft and IBM are the primary vendors to expand business solutions that are accessed from the desktop. Both vendors incorporate new functionality in their desktop applications and provide call control features, group workspaces, video, and conferencing applications. Although both Microsoft and IBM partner for advanced IP telephony features today, Microsoft, with its recently announced partnership with Nortel, offers fully integrated solutions with Nortel's IP telephony server CS1000 PBX. Microsoft's Office Communications Server 2007 (to be released in mid-2007) will provide standalone PC to phone and phone to PC capabilities.
- **Enterprise software application vendors.** Oracle and SAP offer UC to enhance enterprise business application products. Software application vendors provide features including collaboration, conferencing, and IM to provide asynchronous and real-time connectivity within the context of their business applications, thereby increasing the business value of both the applications and the communication and collaboration features.<sup>2</sup> Information workers also want to locate and communicate with others — in other words, collaborate — directly within the context of the activity or business process in which they are involved. This means they don't want to launch separate tools to look up and chat with colleagues, participate in discussion threads, or check the status of team projects.

## Partnering Is The Norm Among Providers

No vendor demonstrates equal strength for both telephony and asynchronous collaboration communications. The result is multiple partnerships among communication providers and collaboration platform vendors. However, Forrester predicts that vendors like Microsoft and Cisco will move more quickly to add missing functionality to their product suites. As is the case with Microsoft's partnership with Nortel and Cisco's UC client offering, IBM most likely will continue to extend its partnerships with Avaya and integration with Cisco for IP telephony features and continue to direct its development efforts toward its core infrastructure and its collaboration platform (e.g., WebSphere app server and WebSphere Portal, Lotus Notes/Domino, Lotus Sametime,

and IBM Workplace Collaboration Services). IBM's new release of Sametime (Sametime 7.5) is the vendor's core platform for real-time collaboration, offering presence, click-to-talk, and conferencing features.

### Leading UC Vendors And Products

Vendors have differing marketing approaches to delivering UC solutions. Some vendors are in the development stages for UC and offer multiple products that currently are not fully integrated into a UC platform but share services across multiple technologies or are connected through middleware. Others such as Microsoft, Nortel, and Siemens offer a more integrated software solution. Despite the level of integration found in each vendor's product offering today, all vendors provide a solid foundation for supporting UC within enterprises. UC solutions from the key vendors in this space include:

- **Alcatel OmniTouch UC.** Alcatel's UC solutions are integrated with its Omni PCX Enterprise to deliver a complete suite of easy-to-use and integrated software-centric solutions, in addition to supporting other PBXs. It offers comprehensive messaging, fixed and mobile device support, and Web and video conferencing integration. Additionally, Alcatel integrates with both Lotus Notes/Domino and Microsoft Outlook/Exchange to deliver IM and asynchronous communications. Alcatel plans to provide advanced presence functionality in a future release.
- **Avaya's one-X and MultiVantage.** Avaya supports several UC products under its one-X and MultiVantage brands. It focuses on providing reliable, secure, integrated, multivendor business communications applications. It offers advanced desktop call control features and has a high degree of interoperability with other PBX and IP telephony platforms as well as mobile devices. Avaya supports both the IBM Lotus Notes/Domino and Microsoft Outlook/Exchange messaging platforms for email, calendaring and scheduling, task management, and contact management. Additionally, its products offer both Web and video conferencing integration and presence capabilities.
- **Cisco Unified (CU).** Cisco preferences many of its products under the label of CU and includes CU CallManager, Cisco Unity Unified Messaging, CU Presence Server, and CU MeetingPlace. It supports advanced desktop call controls, integrated multimedia messaging, and fixed and mobile devices. Cisco plans support for and enhancements to its presence, asynchronous collaboration, and IM capabilities in future releases. It promotes the value of a converged IP network infrastructure for delivering more effective communication options and productivity-enhancing applications to users. Cisco partners with both IBM and Microsoft for asynchronous collaboration capabilities.
- **Genesys Enterprise Telephony Software (GETS).** Genesys' UC solution is based on its Computer Telephony Integration (CTI) middleware for desktop call control and routing, which provides users with a high degree of interoperability among devices. This makes it a sound

solution for organizations that have a heterogeneous telephony environment. It currently partners with Microsoft and interoperates with Microsoft Live Communication Servers (LCS) for IM, conferencing, and presence capabilities and plans to extend support for asynchronous collaboration features and mobility in upcoming releases through partnerships with Microsoft and others.

- **IBM UC (Lotus Notes/Domino and Lotus Sametime 7.5).** IBM offers a secure, manageable, Eclipse-based platform for UC and rich collaboration, with IM and Web conferencing functions, in this latest version of Lotus Sametime. Sametime integrates calendar functions from Lotus Notes/Domino and can connect to mobile devices. IBM's partners provide UC Web, audio, and video conferencing integration, messaging integration, and advanced telephony functions. IBM has a partner ecosystem that is integrating with and adding value to Sametime, and integrating it with customer relationship management (CRM) and enterprise resource planning (ERP) applications. Sametime includes mobile clients for multiple operating systems and devices.
- **Microsoft UC.** Microsoft's UC solution is centered around LCS (and will be improved in Office Communications Server 2007, which is due to ship in mid-2007) and the Office Communicator client, and the Office Live Meeting hosted Web conferencing service. This platform provides real-time collaboration features like IM, presence, application sharing, white-boarding, voting, and Web conferencing. LCS integrates with Microsoft Outlook/Exchange for messaging and calendaring and with Microsoft SharePoint for team collaboration and portal capabilities, and with Microsoft Office to provide real-time collaboration features from within the Office applications. Microsoft has established an extensive partner ecosystem around LCS to support advanced telephony features and third-party applications. Microsoft LCS is a scalable solution with application support for CRM, ERP, or any other application via a published API interface.
- **Mitel Live Business Gateway.** As part of the Mitel Applications and Services Gateway family, the Live Business Gateway integrates the Microsoft Office LCS and Mitel applications to provide access to key business resources in the moment they are needed. Mitel offers extensive functionality for its customers who are also deploying the Microsoft LCS media server. Its solution also supports presence, messaging, and conferencing integration. Mitel's UC solution also supports enterprise mobility and extended business applications, such as call centers.
- **Nortel Multimedia Communication Server (MCS) 5100.** Nortel's UC solution with converged desktop through SIP interoperability with Nortel Communication Server (CS) 1000 offers a fully integrated desktop and mobile end user experience and includes audio, video, and Web conferencing capabilities with tight integration and feature-rich telephony. Its packaged offering is one of the more mature UC products on the market with a sizable installed base that is considered among the top three IP telephone vendors for the North American market. Nortel integrates with Microsoft Outlook/Exchange. It delivers a clear migration path for existing customers using older products to move up to this more scalable UC solution.

- **Nortel and Microsoft Innovative Communications Alliance (ICA).** Microsoft and Nortel's recent partnership combines joint marketing and product planning teams to create a more comprehensive UC solution. The first already available solution provides a common software interface between Nortel's CS1000 IP telephony server and Microsoft's Live Communications Server 2005 software. It provides an integrated business-grade voice and data UC solution that offers a fully integrated converged solution within a single suite. Plans are to also offer a single platform that will deliver complete UC solutions including business-grade telephone features, tightly integrated with Office applications, and featuring a seamless user experience via Office Communicator mobile and desktop clients, which will be supported on Nortel's application-aware network.
- **Oracle Communications and Mobility Server (OCMS) and Oracle Collaboration Suite (OCS).** The OCMS provides J2EE-based core infrastructure components for building unique SIP/SIMPLE communications services and base enabler components including call control, presence, and IM. The product's carrier-grade capabilities allow it to be deployed at both the carrier and in the enterprise. In addition, OCS solution provides a set of collaboration services targeted for the mobile workforce, including email, calendar, scheduling, task management, contacts, and team collaboration features such as Web conferencing. It leverages OCMS infrastructure for IP communication capabilities.
- **Siemens HiPath OpenScape.** Siemens offers a comprehensive software solution that is built on Microsoft's Live Communications Server. It will integrate with IBM Lotus Sametime in the 2007 time frame. As an open, middleware application, OpenScape can be integrated into various applications and customized to fit various enterprise communications requirements. Siemens supports advanced telephony features and interoperates with varied PBX and IP telephony platforms as well as numerous cell phone and mobile devices. It offers broad presence capabilities and audio, Web, and video conferencing integration. Siemens provides one of the more advanced UC solutions in the market today.

## COMPARING UC PROVIDERS AND OFFERINGS

Forrester surveyed the top 10 vendors that currently offer UC solutions to determine relative strengths and weaknesses across five primary categories: IP telephony and desktop call control, integrated messaging support, multimodal conferencing, presence awareness, and asynchronous collaboration support. Each vendor indicated whether a feature exists today or is planned during the next year or at a later date. Providers also indicated if they partner for a specific functionality or offer it directly. Vendors' go-to-market strategy is to either build functionality directly or partner in areas that are not core to their business.

## IP Telephony And Desktop Call Control

All providers offer solutions for call control and mobile device support. Communication vendors such as Cisco, Avaya, and Nortel offer comprehensive IP telephony solutions and collaboration platform vendors like IBM and Microsoft partner for these capabilities. The main capabilities that fall under IP telephony and desktop call control are (see Figure 1):

- **IP telephony.** These are traditional PBX features that are standard with leading communication providers for IP telephony servers. Basic telephony features are found with collaboration platform vendors but extensive telephony features that are suited for a business environment are still the domain of IP telephony providers such as Avaya and Cisco.
- **Desktop call control.** With desktop call control, basic telephony features can be activated by pointing and clicking on soft clients. Features include click-to-dial, click-to-conference, phone features such as hold, transfer, and disconnect, and the ability to modify. Advanced features include video calling and the ability to twin a soft client with a standard desktop set.
- **Mobility.** Mobile access supports mobile device interoperability for “find me follow me” applications and to allow users to access UC features from their mobile devices. Mobility devices include cell phones, RIM/BlackBerry, Wi-Fi phones, and dual-mode phones.
- **Interoperability capabilities.** Supports SIP to interoperate with any IP telephony or PBX system, as well as third-party client and third-party SIP integration.

## Integrated Messaging Support

Integrated messaging extends beyond basic unified messaging and also includes support for other message types and retrieval of messages from both fixed and wired devices. The main integrated messaging support capabilities that these vendors offer are (see Figure 2):

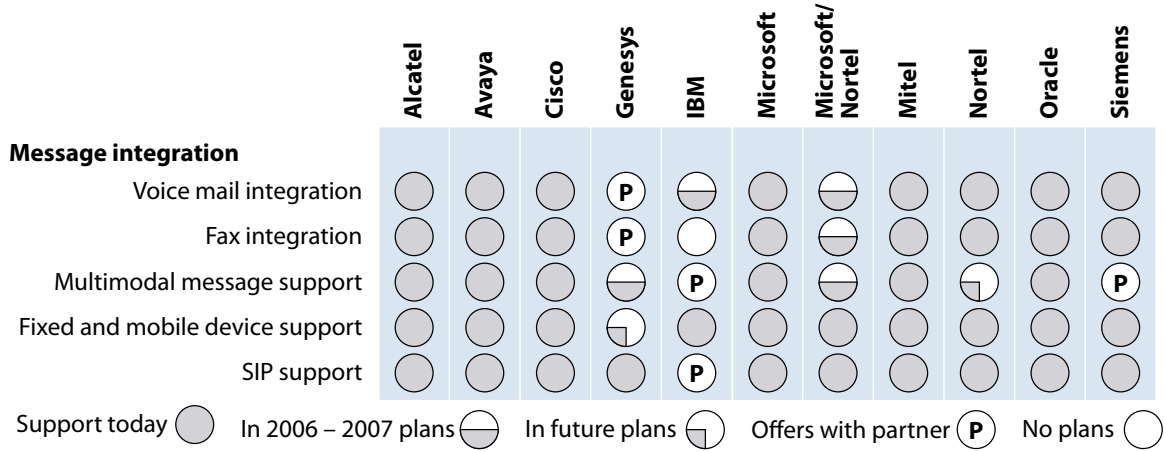
- **Unified messaging.** Unified messaging supports sending and retrieving of voice, email, and fax messages from either the telephone or email system.
- **Multimodal messaging support.** Supports multiple forms of messaging including text, IM, SMS, and voice messaging on fixed and mobile devices.
- **Fixed and mobile devices.** Provides ability to retrieve and view messages from wired and wireless devices.

**Figure 1** IP Telephony And Desktop Call Control Support

	Alcatel	Avaya	Cisco	Genesys	IBM	Microsoft	Microsoft/ Nortel	Mitel	Nortel	Oracle	Siemens
Full-featured IP telephony system	○	○	○	Ⓟ	Ⓟ	Ⓟ	○	○	○	○	○
<b>Desktop call control</b>											
Click-to-call	○	○	○	○	Ⓟ	Ⓟ	○	○	○	○	○
Click-to-conference	○	○	○	○	Ⓟ	Ⓟ	○	○	○	○	○
Support basic telephone features	○	○	○	○	Ⓟ	Ⓟ	○	○	○	○	○
Signaling media security built-in	○	○	◐	○	○	○	○	○	◐	Ⓟ	○
End user ability to modify	○	○	○	○	Ⓟ	○	○	○	○	○	○
Recorded announcement	○	○	◐	○	○	○	◐	○	○	○	○
Personal agent	○	○	○	○	◐	○	◐	◐	○	Ⓟ	○
Sequential and/or simultaneous ringing	○	○	○	◐	Ⓟ	Ⓟ	◐	○	○	○	○
Single trunk usage for converged desktop mode	○	○	○	○	Ⓟ	○	○	○	○	○	○
Call log — outgoing	○	○	○	○	Ⓟ	○	○	◐	○	○	○
Call log — incoming	○	○	○	○	Ⓟ	○	○	○	○	○	○
<b>Mobile phone support</b>											
Cell phone support	○	○	○	◐	○	○	○	○	○	○	○
RIM/BlackBerry/PDA support	○	○	○	◐	○	○	○	◐	○	○	○
Wi-Fi phone support	○	○	○	◐	○	◐	○	○	○	○	○
Secure access	○	○	○	○	○	◐	○	○	○	○	○
Dual-mode support	○	○	○	○	○	◐	○	○	○	○	○
<b>Interoperability</b>											
IP telephony systems	○	○	○	○	○	○	○	○	○	○	○
PBX systems	○	○	○	○	○	○	○	○	○	○	○
Third-party client interoperability	○	○	○	○	◐	○	○	○	○	○	○
Third-party SIP integration	○	○	○	○	○	○	○	○	○	○	○

Support today ○ In 2006 – 2007 plans ◐ In future plans ◑ Offers with partner Ⓟ No plans ○

**Figure 2** Integrated Messaging Support



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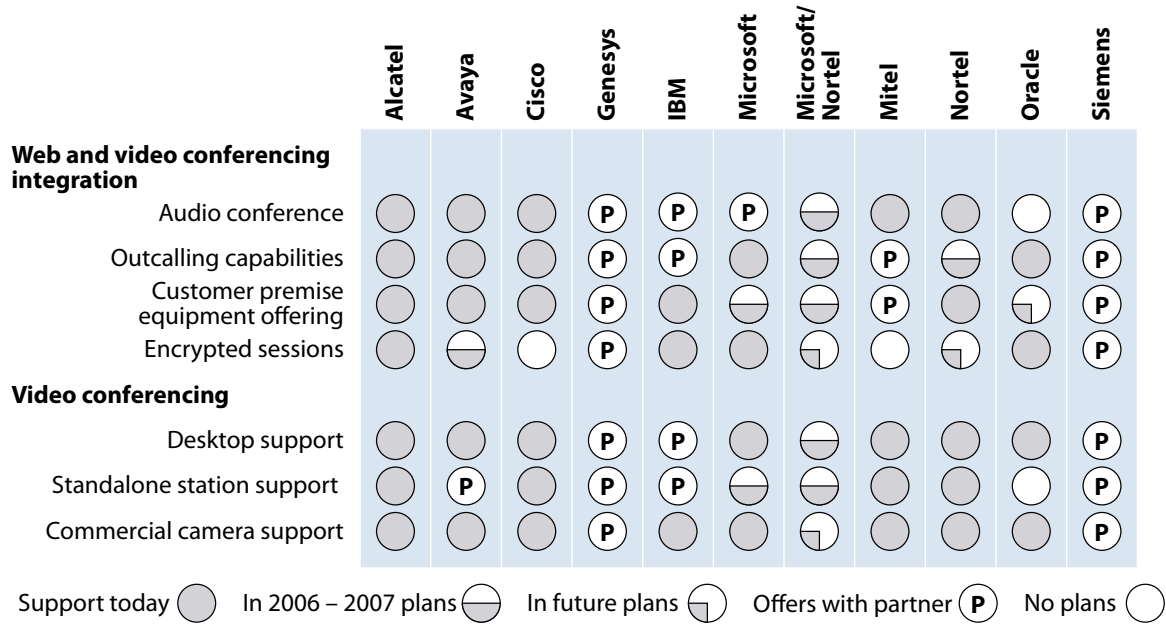
Source: Forrester Research, Inc.

### Multimodal Conferencing

Desktop access to conferencing enables callers to launch and manage a multimodal conference from their desktop, simplifying the set up and management of a conferencing session. The main multimodal conferencing support features that these products offer are (see Figure 3):

- **Web and audio conferencing.** Integrates audio and Web conferencing as a premise-based offering.
- **Video conferencing.** Provides desktop video capabilities, standalone station support, and commercial camera support.

**Figure 3** Multimodal Conferencing Support



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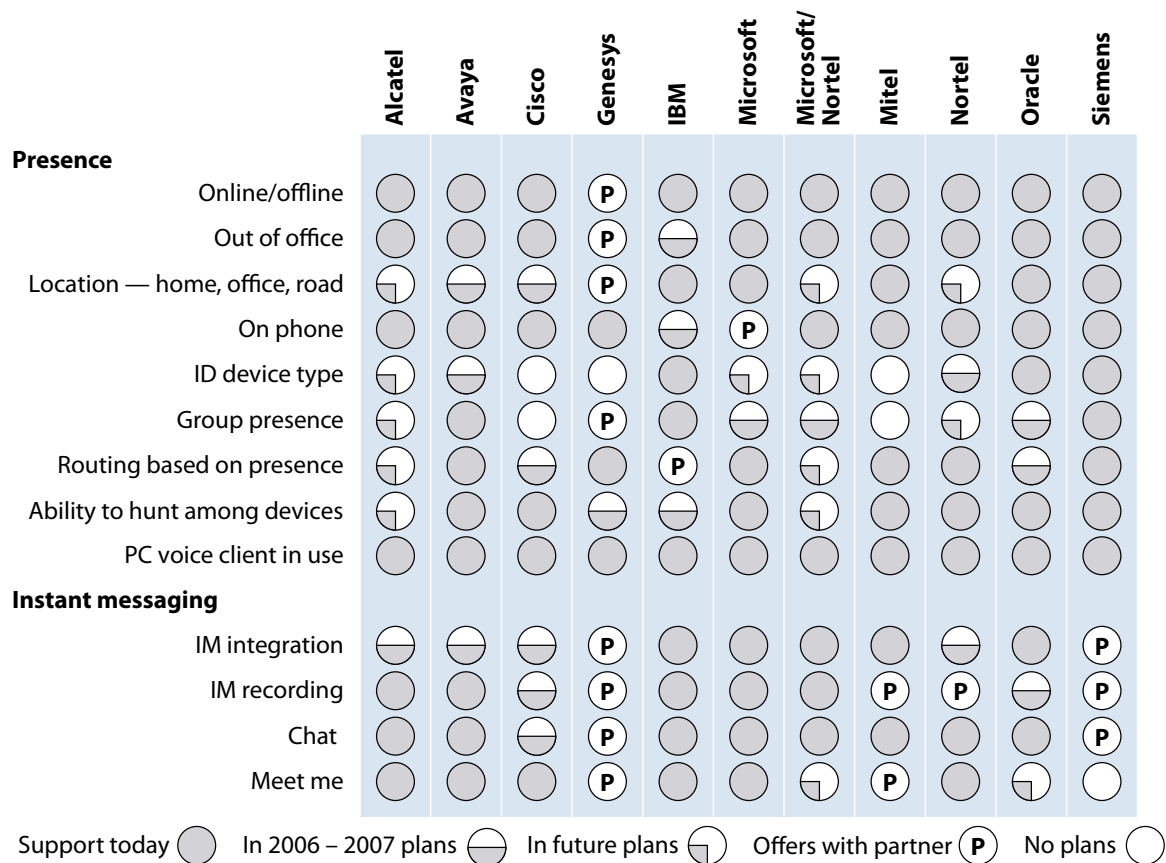
Source: Forrester Research, Inc.

**Presence Awareness**

Many consider presence awareness to be a major productivity enhancer, as it allows users to see the status of team members and quickly reach out to them in the manner most appropriate, based on their current status. These products’ main presence awareness features include (see Figure 4):

- **Basic presence capabilities.** Features indicate the status of a team member in a workgroup by indicating the worker’s current activities and availability for contact. Presence indicators display work status such as online and offline and location information (e.g., out of office, on the road, in meetings). Presence automatically searches for the most appropriate device to connect to, based on a person’s current status. When presence is synchronized with a person’s calendar and the recipient is not available, a message may automatically go the recipients’ email address or voice mail to be retrieved at a later time.
- **IM integration.** Integrates with leading IM products from Microsoft, Yahoo!, and MSN. Supports IM recording, chat sessions, and meet me capabilities.
- **Integration with conferencing services and collaboration tools.** Allows users to set up conferences from desktop by seeing team member’s status and clicking on their name to launch an audio or video conferencing session.

**Figure 4** Presence Support



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Source: Forrester Research, Inc.

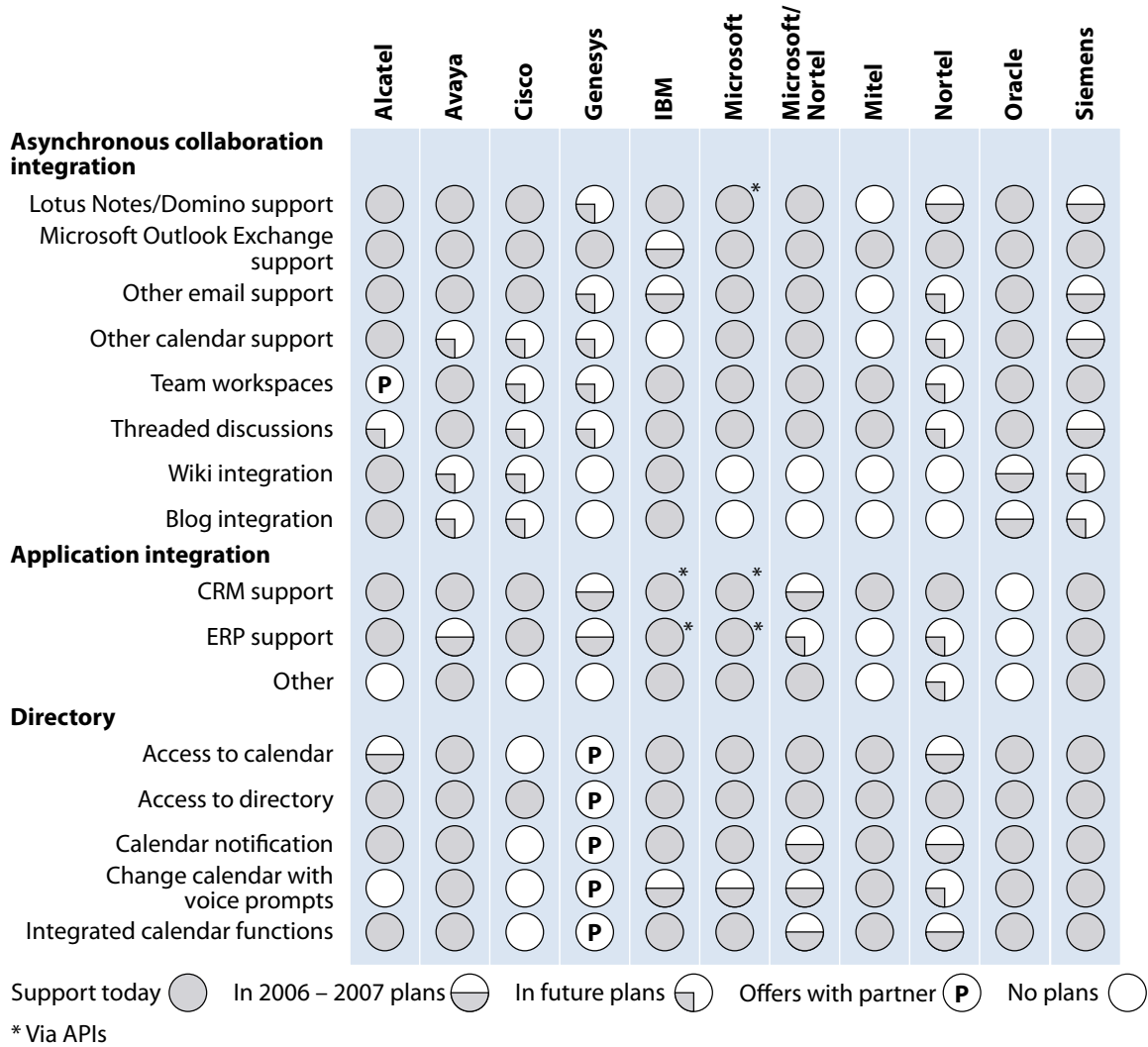
### Asynchronous Collaboration Support

Collaboration platform vendors offer a variety of asynchronous collaboration functions. Rather than duplicate these features, most UC vendors have established solid partnerships with IBM and Microsoft to provide integration with or access to these features. The main asynchronous collaboration support features that these vendors offer include (see Figure 5):

- **Email support.** Supports Lotus Notes/Domino, Microsoft Outlook/Exchange, and other major email systems.
- **Calendar support.** Provides access to calendars for such activities as scheduling conference calls and meetings. It may also include speech access to calendars via telephone.

- **Team collaboration.** Provides links to team workspace and supports threaded discussions. May also support wiki and blog integration.
- **Directory integration.** Provides voice on data access to directories and calendars and calendar notification of events.

**Figure 5** Asynchronous Collaboration And Calendar Support



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Source: Forrester Research, Inc.

## RECOMMENDATIONS

### EVALUATE REQUIREMENTS FROM BUSINESS AND OPERATIONS TO DETERMINE BEST FIT

UC provides added functionality to existing applications. A significant element of this is that it enables delivery of contextual communication and collaboration services to application users. As organizations seek to improve core business processes, UC can streamline and simplify the management of communication and collaboration tools. When getting started with UC, Forrester recommends that you:

- **Determine which group of users will benefit the most from UC.** Not everyone needs all features offered by a full UC suite — but many may benefit from the integrated functions. Look for the specific business value that UC platforms deliver within multiple processes in which people require real-time access to each other. In some cases, voice or data communications may be more important, and in others, companies may need equal access to both.
- **Identify user groups based on the need to communicate more effectively.** Remote workers and business travelers often have the most to gain by reaching others in real time to avoid project delays or make decisions. Due to the need to quickly reach others on time-sensitive matters, knowledge workers are often the first to adopt UC.
- **Build on existing IP and collaboration platform investments.** Two core technologies are converging into the foundation for UC: collaboration platforms and IP telephony. When making a UC platform vendor selection, organizations should look for opportunities to leverage existing communication and collaboration investments. For example, Microsoft users would look for vendors that integrate with its LCS server.
- **Identify ownership and support requirements.** UC brings together separate operational groups that typically do not work together (network operations, telecoms, server platform hardware, software applications, and collaboration platforms). All groups need to be involved in developing a support plan to manage this complex integration. Ownership should be clearly defined, with application owners working closely with network infrastructure providers, and scoped to avoid turf battles and reduce the impact of politics as much as possible.
- **Invest in end user training prior to launch.** Although UC simplifies how workers communicate, many will not adopt or change their current mode of working without clear guidelines on how to gain the most value out of the features.

## ENDNOTES

- <sup>1</sup> SIP is independent of media used. Multimedia types like email, IM, fixed and mobile telephones, and video can initiate sessions and make connections. See the August 1, 2005, Trends “[SIP: The Next Frontier For Converged Applications](#).”
- <sup>2</sup> To test out the importance of contextual collaboration, we asked the survey participants, “How important is it that collaboration tools are delivered to users within the context of the business process in which they are involved?” We found that 61 of the 117 respondents (52%) feel that contextual collaboration is somewhat important, and another 46 (39%) feel it is extremely important. See the March 8, 2006, Trends “[Context Is The King In The New World Of Work](#).”

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