Enterprise Computing & Networking by Zeus Kerravala

The Impact of Microsoft's Unified Communications Launch

Executive Summary

The unified communications (UC) market has been in transition for the past several years. UC has evolved from simple unified messaging and voicemail integrated into e-mail, to a market where all of a user's collaboration tools are brought together under one umbrella. UC has been the main visionary focal point for the VoIP market, led by companies such as Cisco, Avaya and Nortel. In late June, Microsoft launched its plans to enter the UC market followed by a July announcement detailing a partnership with Nortel known as the Innovative Communications Alliance (ICA).

Most organizations have headed down the path of UC by first deploying IP telephony as the underlying foundation into which all other collaborative applications will be integrated. Because of this and the fact that Cisco is the leader in user preference for IP telephony (see Exhibit 1), much of the industry has positioned Microsoft's entrance into UC as a "battle of the titans"—pitting Microsoft, the industry's desktop leader, against Cisco, the global leader in network and communications infrastructure. This Yankee Group Report achieves the following:

- Provide an overview of unified communications.
- Clarify what Microsoft announced during the past 2 months and how its desktop approach compares to Cisco's communications-based architecture.
- Provide recommendations on what enterprises should do right now when considering IP telephony and related unified communications suites.

Exhibit 1

Which Brands of IP Telephony Do You Most Prefer? Source: Yankee Group 2005 North American Economics of IP Communications Survey



This custom publication has been funded by Cisco.

© Copyright 1997-2006. Yankee Group Research, Inc. All rights reserved.

This Yankee Group Consulting Report is published for the sole use of Yankee Group clients. It may not be duplicated, reproduced or transmitted in whole or in part without the express permission of Yankee Group, 31 St. James Avenue, Boston, MA 02116. For more information, contact Yankee Group: info@yankeegroup.com; Phone: 617-956-5005. All rights reserved. All opinions and estimates herein constitute our judgment as of this date and are subject to change without notice.

Table of Contents

I.	Introduction: An Overview of Unified Communications
II.	Microsoft's Announcements
	Microsoft Office Communications Server 2007
	Live Meeting and Conferencing Applications
	Microsoft Exchange Server 2007 with Unified Messaging
	Office Communicator 2007
	Office Communicator Phone Experience and Third-Party Devices
	Innovative Communications Alliance (ICA)
III.	Cisco's Communications-Based Approach
IV.	Vendor Comparison
	Go-to-Market Differences
	Product Comparison
V.	Conclusions and Recommendations

I. Introduction: An Overview of Unified Communications

Companies have opened their walls and become extended enterprises: global organizations that are networked together and comprise a variety of constituents. Employees, partners, suppliers and customers are part of the extended enterprise and need the ability to communicate faster and more collaboratively over a variety of devices and mediums.

To enable users within the extended enterprise to communicate better, organizations have deployed several communications tools (see Exhibit 2 on next page). These tools include telephony, mobile phones, video conferencing, audio and web conferencing, e-mail, soft phones and other commonly used communications devices. Although these devices address the need for faster communications, few of them are linked together. This creates a manageability headache for the end user and prohibits the organization from reaching its full potential. To achieve their full potential, organizations require the ability to communicate and collaborate better. Competitive advantage is not about any one person or core capability. The entire extended enterprise and the ability of each of its components to communicate and collaborate with others in real time forms the basis of competitive advantage today.

UC brings all of these devices and systems together. It improves the manageability and effectiveness of the ecosystem and makes the enterprise more responsive and agile, which enables it to achieve its full potential and ultimately gain an advantage over the competition.

UC is the convergence of all forms of audio, video, web and desktop communications, built on an IP network that breaks down all distance, time and media barriers. This will enable people to communicate with each other anywhere, any time, over any device. UC consists of the following components:

- **IP network:** An IP network is required to deliver the information and communications to users. IP is the only protocol that is scalable and simple enough to make the vision of UC a reality; it will be the common network for the deployment of all communications systems.
- IP telephony/VoIP: VoIP is a component of UC, but many consider it to be the most important and core to any UC strategy. Most organizations Yankee Group has interviewed on this topic have stated that a solid, stable VoIP infrastructure is required, and then the other collaboration tools will be integrated into this architecture.
- **Desktop software:** The desktop software includes messaging software, conferencing applications (voice, video and web), soft phones, e-mail clients and other communications tools used by end users.
- **Mobility:** The concept of UC is to replicate the user experience regardless of location. This might be in an office, a hotel, an airport lounge or anywhere a user may have mobile phone service.

- Security: The security aspect of UC cannot be underestimated. Because of its distributed nature, security must be built into the design of UC.
- **Presence information:** This is the ability for users to understand another user's availability and willingness to communicate over a variety of devices. This is common today for instant messaging applications, but it will quickly be used to understand a user's status on phones, wireless devices, video conferencing and other collaborative tools.

This Yankee Group Report reviews the recent Microsoft announcements in the UC market and the impact the company will have there. We also examine the current IP telephony and communications leader, Cisco Systems, and compare how Cisco's network- and communications-centric approach contrasts with Microsoft's desktop- and serverbased solution.

Exhibit 2

Communications in the Extended Enterprise Source: Yankee Group, 2006



II. Microsoft's Announcements

On June 26, 2006, Microsoft announced the next phase in its communications strategy. The new Unified Communications Group (UCG) has been formed from the former Real-Time Collaboration (RTC) and Microsoft Exchange groups. Specifically, Microsoft announced the following as part of its strategy.

Microsoft Office Communications Server 2007

Office Communications Server (OCS) is a standardsbased SIP server that supports several real-time communications features such as presence-based VoIP call management, instant messaging capabilities, and video, audio and web conferencing.

Microsoft's initial release of OCS will have a limited set of basic PBX-like features including some call control such as call transfer, pickup and hold, and presence-based call routing features. Although Microsoft plans to make OCS a full-featured PBX, its first release will not include many telephony and survivability features; and it's unlikely to deliver the five-nines reliability most businesses expect with telephony. Microsoft plans to release OCS 2007 in the second half of 2007.

Live Meeting and Conferencing Applications

s part of its UC strategy, Microsoft will include a premises-based version of Live Meeting in OCS. Until now, Live Meeting was only available to users as a hosted service from Microsoft's acquisition of PlaceWare. Microsoft will converge web, video and audio conferencing into one product, following the lead of the IP telephony vendors.

Live Meeting is aimed at delivering these capabilities to larger corporations. Microsoft intends to address smaller businesses with its peer-to-peer-based Meeting Space, part of Windows Vista. This will cause some confusion for midsize organizations because the functionality of both products is similar.

Microsoft Exchange Server 2007 with Unified Messaging

The major change from Exchange 2003 will be the integration of voice services for unified messaging purposes. Exchange 2007 will integrate with most current IP PBX and will require a gateway for PBX integration. Voicemails will be converted into Windows Media Audio (WMA) format and then routed into the Exchange inbox.

The voice integration into Exchange 2007 will also enable users to use their IP phone to interact with traditional Exchange features. For example, users will be able to dial into Exchange and have their messages or calendar entries converted from text to speech and then read to them.

Microsoft expects to release Exchange 2007 in the first half of 2007. It's difficult to predict which of the traditional telephony features (e.g., message waiting indicators) will make it into the first version of Exchange 2007, but it's likely Microsoft will need several revisions to catch up to the traditional manufacturers.

Office Communicator 2007

This is the desktop soft phone that interoperates with OCS 2007. Microsoft has positioned Office Communicator as the only communications client a user would require. It will include the soft phone capabilities combined with instant messaging as well as web and video conferencing.

Microsoft intends to offer Office Communicator as a browser-based desktop client and also make it available on Windows Mobile.

Office Communicator Phone Experience and Third-Party Devices

In addition to the desktop Office Communicator, Microsoft will offer several Microsoft-branded or co-branded devices that will interoperate with Office Communicator. These devices will be provided by a number of manufacturers such as:

- LG-Nortel, Polycom and Thomson Telecom will provide desktop IP phones and IP video devices.
- Motorola will develop a dual-mode smart phone.
- Motorola, Plantronics, Logitech, GN Netcom, Samsung and Tatung will offer several USB-based headsets, handsets, video cameras and monitors. Additionally, this group will offer a product called Microsoft Office RoundTable, which is a room-based video-conferencing system.

The availability of these devices will vary across 2007.

Innovative Communications Alliance (ICA)

Following Microsoft's June UC announcement, on July 18, Nortel and Microsoft outlined an alliance to further enhance Microsoft's position in UC. Although the announcement provided few specifics about this alliance from a product perspective, the main themes of the alliance are as follows:

- Nortel will complement UC with functions and features that were missing from the planned release of Microsoft's UC software. These include call center applications, mission-critical telephony functions such as failover and redundancy capabilities, advanced mobility functions and infrastructure from Nortel's data portfolio.
- The companies will undertake joint research and development for future UC features and products.
- They will form a sales and marketing partnership.
- Nortel will act as the preferred systems integrator (SI) for Microsoft in this area.

The July announcement was mostly a statement of direction, but it raises many questions about the strategy Microsoft announced in June and about Nortel's own strategy and customer base. For example, what does the positioning of Nortel as Microsoft's preferred SI mean to Microsoft's other services partners? What does this mean to Nortel customers that have already invested in desktop software from Nortel? What impact does this have on Microsoft's other strategic UC partners such as Siemens, NEC, Avaya and Cisco?

Overall, the UC market is likely to be a rising tide that will lift all boats in this market. But Microsoft's approach to this market differs from the rest of the industry:

- Microsoft approaches VoIP by controlling the endpoints instead of having a centrally located call control server. This is consistent with Microsoft's desktop view of the world versus the telephony vendors' network-centric models.
- Initially, Microsoft's sales model will focus on the desktop application managers rather than the network and voice administrators. The Nortel alliance will provide Microsoft with the opportunity to sell UC to Nortel's installed base, but the majority of Microsoft's sales activity will focus on IT individuals who manage desktops and applications. Microsoft's first foray into UC will be heavily focused on integration with its own software products and will most appeal to companies that are heavily Microsoft-oriented.
- Microsoft will leverage its Microsoft Developer Network (MSDN) to tap into the huge number of software vendors that develop software for Microsoft systems. Much of UC's future value will rely on what other applications can be voice-enabled and receive presence information. The size and scale of MSDN will help drive that forward.

III. Cisco's Communications-Based Approach

The vision Cisco and the other leading telephony vendors have outlined for UC is similar to Microsoft's at a high level, but quite different at an architectural level. Cisco's approach is to first build an intelligent, converged IP data network as the foundation for IP telephony and UC. The intelligent IP network will provide many services such as security, quality of service (QoS), auto provisioning, multicast, resiliency and E911. By building voice and other UC services into the network, Cisco can more easily provide scale, extensibility and multivendor support for mobility, presence and other applications.

Historically, the majority of IT has focused on delivering end-user applications through traditional client/server-based systems that were layered on top of the network. During the past few years, both the computing and the network industries have focused on integrating more computer functionality into the network and delivering the applications as a service. The network is the only layer of the IT stack that can connect and enable the various infrastructure components transparently. By turning infrastructure components into shared services, IT can create a virtual infrastructure, driving utilization of the resources up and bringing total cost of ownership down. Cisco's communications or network-based approach (see Exhibit 3) is to create three layers that communicate with each other based on its Service-Oriented Network Architecture (SONA).

The layers are defined as follows:

- Network infrastructure layer: This is where the physical infrastructure resides. This layer includes all of the network equipment, computing hardware and clients that live across the enterprise. It will create a converged IP network foundation on which to build.
- Infrastructure services layer: This layer is an extension of the virtualization model toward which most computing vendors are working. The concept is to create several virtual shared service pools that can be resources for the applications that sit above them. Security, mobility and storage services are examples of these virtual services. Voice and collaboration services are specific to UC.
- Application and collaboration layer: All of the business and collaborative applications exist in this layer. The applications draw resources from the services layer below it. The collaboration applications such as unified messaging, presence, contact center and conferencing are the focus of the UC vendors.



Exhibit 3

For UC, the network-based approach gets its strength from the fact that each subsequent application such as web conferencing or video is just another type of media that can be integrated into the architecture. The service itself is served up from the network, eventually allowing any device to interoperate with any service. This means the infrastructure can adapt to the changing needs of the enterprise.

With its dominance in the network, Cisco has built its SONA around this concept. Cisco will build much of the UC functionality into the network, creating virtual UC services that can interoperate with any vendor's endpoints or UC software above it. Considering Cisco's strength and related market share position in networking, this strategy enables the company to provide all of the UC services and then partner with standards-based, endpoint and application vendors, or provide its own to deliver on the vision of UC.

Exhibit 4

Enterprise Purchase Plans for Converged Networks Source: Yankee Group 2006 Wiring Closet Switching Survey





The keys to Cisco's network-based approach are:

- Cisco's vision of UC is similar to that of the other telephony vendors such as Avaya and Nortel, where the UC suite is built on an IP telephony foundation.
- Cisco differs from the other telephony vendors because more of the UC functionality is built into the network rather than on the network. Each UC application is treated as another network service that is integrated into the IP fabric.
- Cisco has invested many resources into the development CallManager, giving it the same range of features and functions available on a traditional PBX. Cisco has become the market leader in IP telephony. Because many buyers consider IP telephony the foundation to build UC on, Cisco will leverage its market-leading installed base.
- Cisco's integrated voice and data approach has broad appeal to enterprise buyers. According to the Yankee Group 2006 Wiring Closet Switching Survey, 35% of organizations prefer to buy voice and data from a single vendor (see Exhibit 4). Cisco is one of the few vendors that can offer an end-to-end voice and data solution.
- Cisco will leverage its market presence and Cisco Technology Developer Program (CTDP) to create enhanced applications. Cisco lags Microsoft when it comes to the creation and maintenance of a developer community, but has shown a strong commitment to the program. Recent acquisitions of Audium and Metreos provide enhanced developer tools that significantly strengthen CTDP.

IV. Vendor Comparison

C isco and Microsoft have a similar strategy and longterm vision for UC. Both vendors highlight the cost savings and productivity improvements based on the integration of corporate communications. Microsoft is late to the game considering how long the telephony vendors have been working toward this vision, but it has jumped in with both feet. However, despite the similar marketing and messaging, there are differences in the products and go-tomarket strategies of Cisco and Microsoft.

Go-to-Market Differences

Architectural

As expected, Microsoft's approach is focused on desktops and applications. It will integrate several collaborative applications to enable UC functions on the desktop. Microsoft is playing to its strengths here because it's the market leader in desktop software and has a long history in many aspects of UC such as e-mail, office productivity tools and instant messaging. It lacks expertise in voice and the other real-time communications-related aspects of UC. The Nortel alliance will help Microsoft here, but that's unlikely to bear fruit.

Cisco's strategy is to start with an intelligent IP network and build the UC capabilities into the network. The UC features will be served up to the desktop as shared services to be used by any application or endpoint that needs access to them. Cisco has promoted the benefits of UC for a few years, but the company is relatively new to some aspects of desktop user experience compared to Microsoft.

However, the two approaches are complementary. These two companies have a strong partnership that can provide enterprises with a degree of choice in the deployment of UC.

Availability

All of the products announced from Microsoft won't be available until mid- to late- 2007. To deploy UC, corporations will need to upgrade Exchange and install OCS and Live Communications Server (LCS). Much of the desktop software will only be available on Windows Vista. The initial version of OCS will have very limited PBX functionality. The Nortel alliance will address many of the gaps, but that's more of a long-term initiative so companies shouldn't expect a full-featured PBX for many years. It took companies such as Cisco years to fill in the feature gaps when developing an IP PBX, and Microsoft will have a similar experience as its product matures. An additional concern regarding Microsoft is that historical trending indicates the first versions of OCS and other products won't offer the same quality users expect from telephony-based products. Microsoft normally gets new products right, but only after releasing two or three service packs.

For Cisco, the maturity of all currently available products varies. Its CallManager IP PBX is several years old and well seasoned, but its transition to Linux was a recent move. Also, most desktop products such as its presence manager, unified messaging client and soft phone are several revisions into their maturity cycle, and their reliability level is much higher now than in their initial releases.

Third-Party Developer Support

Microsoft has a huge installed base of application developers and desktop managers. Microsoft will leverage its developer community (MSDN) to have third-party vendors create enhanced applications that can be integrated into OCS and the desktop software. Microsoft will have an early advantage in the industry here.

Cisco put its Cisco Technology Developer Program in place to drive more third-party software support across all Cisco products. The program is not nearly as mature as MSDN, but Cisco historically has been able to attract third-party support due to its market presence. There are several product overlaps between Cisco and Microsoft. Exhibit 5 shows a list of all the products available from both.

Below we compare the areas of overlap between the two vendors and significant product differentiation.

Call Control

Call control is an area where Cisco and Microsoft differ from each other and also from the traditional IP-enabled PBXs. With Cisco's CallManager, the server acts as the registry, the SIP proxy and the telephony feature server. Once the call is signaled and set up, the voice or video media stream is peer-to-peer. Some traditional IP-enabled PBXs stream the media through the PBX continually, which restricts the kinds of applications and topologies where the solution can be deployed.

With Microsoft, it's likely that OCS will function as the SIP proxy and the Exchange server will function as the registry. Currently, the telephony features in OCS are limited to just a handful of traditional features. The rest of the telephony features will most likely come from the alliance with Nortel; however, it's unknown when the features will be available. The Exchange server and OCS will be involved in the call setup and initiation, but the media stream will be peer-to-peer, similar to Cisco's approach.

A possible point of differentiation between CallManager and OCS is that CallManager maintains the state of the calls in progress to support mid-call features such as barge, shared line and boss/administrative functions. The other purpose of maintaining state is to facilitate interaction between various types of SIP- and non-SIP-based endpoints. There is currently no vendor capable of maintaining state in pure peer-to-peer models with no centralized call server, and Microsoft has not stated how it will handle this in future releases.

Clients

The main difference between Microsoft and Cisco in this area is that Microsoft Office Communicator (MOC) is a PCoriented tool. It enables peer-to-peer VoIP calls to work natively, but any kind of third-party call control requires a gateway. Also, Cisco Unified Personal Communicator (CUPC) supports voice, video, voicemail and document sharing, although most of these features either don't exist in MOC (voicemail) or require plug-ins to work (Live Meeting).

In short, CUPC is a more mature product, while MOC represents where the industry was 2 to 3 years ago. Microsoft will eventually catch up, but it's likely to remain highly PC-oriented while Cisco and the telephony vendors remain communications-oriented. Additionally, CUPC supports Macintosh computers as well as Windows. Although Microsoft has the majority of desktop clients, the variety of devices that will require a presence client will continue to grow, and support for the different operating systems will become increasingly important.

Exhibit 5

Product	Microsoft	Cisco
Desktop Clients	Microsoft Office Communicator (MOC)	Cisco Unified Personal Communicator (CUPC)
Presence Server	Live Communications Server (LCS)	Cisco Unified Presence Server (CUPS)
Conferencing Application	Live Meeting	MeetingPlace, Telepresence, MeetingPlace Express (MPE)
Unified Messaging	Exchange 2007	Unity, Unity Connection
Contact Center	None	IP Contact Center (IPCC), IP Contact Center Express (IPCCE)
E-Mail Server	Exchange 2007	None
Call Control	Office Communications Server (OCS)	CallManager, CallManager Express
IP Phones	Third party	Broad range of low- to high- end phones, wired and wireless, third party
Application Development	Speech Application Language Tags (SALT), .NET	Recent acquisitions of Audium and Metreos

Microsoft and Cisco Product Comparison Source: Yankee Group, 2006

Presence Server

Cisco and Microsoft have a similar vision for presence. Users will have the ability to set the status and monitor the presence status of others through a single desktop client.

Again, Microsoft will take a desktop application approach to this industry. LCS integrates presence into the Office suite of productivity applications. This means users can see when another user is editing a Word document, for example. However, Microsoft still doesn't support full voice integration, requiring SIP proxies and gateways for the added features.

Cisco's approach is more network- and communicationsfocused, and provides presence information to Cisco devices and applications such as Cisco IP phones, desktop cameras and messaging features.

Ultimately, users won't want to use multiple presence managers for multivendor support. Cisco has federated its presence information with IBM for integration into the Sametime messenger. To date, Microsoft has federated with the public IM vendors Yahoo!, AOL and MSN, but has not federated with any corporate vendors. The lack of federation from Microsoft means that, in a multivendor environment, users won't have bidirectional presence functionality. For example, the MOC client will see the presence information of third-party devices from vendors that share presence info, such as a Cisco IP phone; but because Microsoft doesn't federate, CUPC won't see the status of an MOC client. The idea behind presence is to show the status of all devices, not just that of one vendor.

Conferencing Applications

As in other aspects of UC, Microsoft and Cisco have a similar vision for conferencing: web, audio and video conferencing integrated into one product. Historically, Microsoft has been strong in the web conferencing area through the hosted service that is part of the PlaceWare acquisition. Microsoft is looking to make this an in-house-deployed software product, similar to where the telephony vendors are today, but it will take 1 to 2 years to complete. Today, Microsoft has some historical strength with web conferencing, but it offers limited voice support through service providers and non-video capabilities.

Cisco's conferencing applications are driven from its MeetingPlace server and are tightly integrated with Cisco IP telephony products, but they also work with many thirdparty IP PBXs. MeetingPlace is a full-featured web, audio and video conferencing system that integrates with multiple vendors. Cisco has a lead over Microsoft in the area of conferencing capabilities, and it's likely to keep that lead until Microsoft delivers Live Meeting as an in-house software application.

Unified Messaging

Unified messaging products have been available for many years as part of the product suites offered by telephony vendors, but the penetration rate is only about 10%. By making unified messaging native in Exchange 2007, Microsoft will help the market grow from the small installed base it currently has. Exchange 2007 integration is at the core of Microsoft's strategy, and many users eventually will stop using phone-based voicemail in favor of unified messaging. However, we offer two points of caution to enterprises:

 Microsoft is not planning on making its unified messaging functionality backward-compatible.
Organizations will need to upgrade to Exchange 2007 to get these features. • Exchange 2007 will only run on Intel's EM64T Xeon processor or AMD64 Opteron processors. There will not be 32-bit processor support for Exchange 2007, meaning most organizations will need to upgrade their hardware when they deploy it.

Cisco's unified messaging strategy is to offer it through partnerships with support for both Exchange and Domino, and to ship more than 5 million seats to customers. Microsoft will continue to build more features into Exchange, while Cisco will continue down the multivendor path.

Overall, from a product perspective, the main differences between Cisco and Microsoft can be summarized in two points:

- **Product maturity:** Although Microsoft has many resources and many plans to move into UC, it's new to this area. Cisco has sold millions of IP phones and desktop software clients; Microsoft has sold none. Microsoft will eventually make up ground to the point where its products are comparable; but with telephony-and voice-related applications, experience matters. Cisco found that out several years ago when it entered the voice market, and Microsoft will go through the normal growing pains as well.
- Focus: Microsoft will focus on making UC a desktop issue; Cisco will deliver it from the network. Microsoft's advantages are its developer support and its knowledge of user workflow and desktop experience. Cisco excels in building networks and integrating features, such as voice and UC, for a service-based delivery model.

V. Conclusions and Recommendations

Unified communications has finally reached the point where the products are mature enough and feature-rich enough that companies can use it to enable new business processes and reach new levels of productivity. Organizations that have deployed IP telephony should use that as a foundation on which to layer UC-related applications. Microsoft's entry into this market will also drive a level of independent software vendor (ISV) interaction into this market that will further help it along. However, the application story is still a few years away. Our recommendations for enterprises depends on the status of IP telephony in the organization and who their primary vendors are:

- Companies that have a pressing need for or are in the process of deploying IP telephony and some UC functionality should not wait for Microsoft. At best, Microsoft will release its products in mid-2007—and its track record indicates it could take longer than that. Also, once Microsoft releases the products, software quality isn't a given. Therefore, many of the features organizations are looking for may not be available or may not function properly.
- Cisco-oriented customers should continue down the road of deploying UC from Cisco, but look to augment the implementation with the Microsoft components that complement the Cisco implementation best.
- Organizations that are heavily Microsoft-oriented and have not begun to evaluate IP telephony or UC can take some time and evaluate the Microsoft products as they are released. However, organizations that wait risk falling behind their competitors. Many organizations have seen significant TCO savings and productivity gains from IP telephony, conferencing and other UC-related tools. Many companies have used the savings from IP telephony to fund other strategic IT initiatives as well, driving further value.

Ultimately, this is not a Cisco *or* Microsoft decision. It's more a decision about where to use each vendor. Both are committed to interoperability, as evidenced by the joint announcement between Cisco and Microsoft in March. The partnership announced interoperability between Cisco's UC and Microsoft LCS/MOC. Users will get the benefits of some presence federation such as CUPS to LCS and the ability for MOC to access some Cisco services such as click-to-call. Therefore, customers that standardize on Outlook and MOC can use Cisco's UC, and vice versa. This type of partnership enables organizations to leverage the strengths of each vendor for the best possible solution.

[©] Copyright 1997-2006. Yankee Group Research, Inc. All rights reserved.

Yankee Group

Yankee Group has research and sales staff located in North America, Europe, the Middle East, Africa, Latin America and Asia-Pacific. For more information, please contact one of the sales offices listed below.

Corporate Headquarters

31 St. James Avenue
BOSTON, MASSACHUSETTS 02116-4114
T 617.956.5000
F 617.956.5005
info@yankeegroup.com

EMEA

55 Russell Square **LONDON** WC1B 4HP **UNITED KINGDOM** T 44.20.7307.1050 F 44.20.7323.3747

euroinfo@yankeegroup.com

North America

200-260 Terence Matthews Crescent OTTAWA, ONTARIO K2M 2C7 CANADA T 613.591.0087 F 613.591.0035 canadainfo@yankeegroup.com

Decision Services

Yankee Group Decision Service annual memberships offer clients access to research and one-to-one expert guidance.

Decision Services represent our best value for clients. The services help our members understand industry, regulatory, competitive and market-demand influences, as well as opportunities and risks to their current strategies.

Membership includes an invaluable in-person strategy session with Yankee Group analysts, direct access to a team of analysts, research reports, forecasts, DecisionNotes and regular Online Decision Forums on relevant topics.

We offer Decision Services on almost 30 selected topics in Telecommunications; Wireless/Mobile Communications; Consumers, Media & Entertainment; and Information Technology Hardware, Software & Services.

Decision Instruments

Yankee Group offers a full portfolio of technology and market forecasts, trackers, surveys, and total cost of ownership (TCO), return on investment (ROI), selection and migration tools. Decision instruments provide our clients the data required to compare, evaluate or justify strategic and tactical decisions—a hands-on perspective of yesterday, today and tomorrow—shaped and delivered through original research, in-depth market knowledge and the unparalleled insight of a Yankee Group analyst.

Trackers

Trackers enable accurate, up-to-date tactical comparison and strategic analysis of industry-specific metrics. This detailed and highly segmented tool provides discrete proprietary and performance data, as well as blended metrics interpreted and normalized by Yankee Group analysts.

Surveys

Surveys take the pulse of current attitudes, preferences and practices across the marketplace, including supply, delivery and demand. These powerful tools enable clients to understand their target customers, technology demand and shifting market dynamics.

Forecasts

Forecasts provide a basis for sound business planning. These market indicators are a distillation of continuing Yankee Group research, interpreted by our analysts and delivered from the pragmatic stance our clients have trusted for decades.

Signature Events

Yankee Group's signature events provide a real-time opportunity to connect with the technologies, companies and visionaries that are transforming Telecommunications; Wireless/Mobile Communications; Consumers, Media & Entertainment; and Information Technology Hardware, Software & Services.

Our exclusive interactive forums are the ideal setting for Yankee Group analysts and other industry leaders to discuss and define the future of conversable technologies, business models and strategies.

Consulting Services

Yankee Group's integrated model blends quantitative research, qualitative analysis and consulting. This approach maximizes the value of our solution and the return on our clients' consulting investment.

Each consulting project defines and follows research objectives, methodology, desired deliverables and project schedule. Many Yankee Group clients combine Decision Service memberships with a custom-consulting project, enabling them to augment our ongoing research with proprietary studies.

Thousands of clients across the globe have engaged Yankee Group for consulting services in order to hone their corporate strategies and maximize overall return.

www.yankeegroup.com

Yankee Group believes the statements contained in this publication are based on accurate and reliable information. However, because our information is provided from various sources, including third parties, we cannot warrant that this publication is complete and error-free. Yankee Group disclaims all implied warranties, including, without limitation, warranties of merchantability or fitness for a particular purpose. Yankee Group shall have no liability for any direct, incidental, special, or consequential damages or lost profits. This publication was prepared by Yankee Group for use by our clients.