

Boost Business Processes with IP Communications

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2004

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Business Value Drives VoIP and IP-Telephony Layering

Enterprises must view IP telephony and voice over IP projects as functional layers composed of different vendors, stakeholders, technologies and evolution rates, which together deliver complete business value.

Key Issue

What network technologies, procurement and management practices will provide competitive advantage to enterprises?

Strategic Planning Assumption

By 2005, 80 percent of enterprise IP telephony deployments will use functional layers as the basis for technical architecture and business case justification (0.8 probability).

Note 1

Definitions

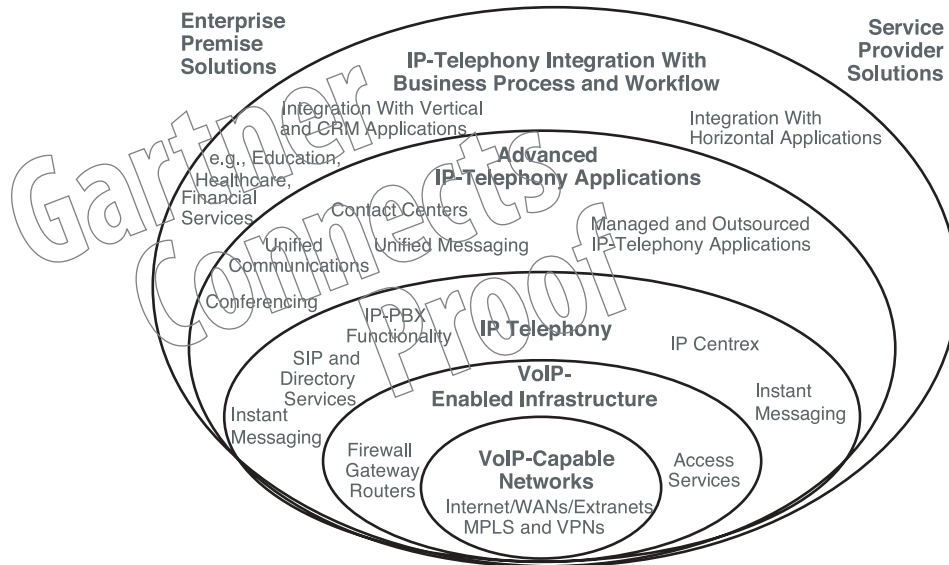
Voice Over Internet Protocol (VoIP): The use of TCP/IP infrastructure and Internet-based standards to transport live voice and video traffic. VoIP is an infrastructure-focused term.

IP Telephony: Telephony platforms and applications, such as IP private branch exchanges (PBXs), that are designed to provide voice and video services over VoIP infrastructure. IP telephony is an application-focused term.

Enterprise architects and managers must explicitly define the end-to-end functional layers of their enterprise voice over IP (VoIP) infrastructure and IP-telephony application architecture; this will clarify the tasks of integration and cost justification (see Note 1). Figure 1 depicts the five major functional layers in an enterprise deployment. The lower layers provide the enabling network and VoIP infrastructure, while the upper layers show the IP-telephony applications and the enabled business processes. These layers clarify the technical aspects, because the products, vendors and replacement cycle for each layer differ. The project management tasks are also clarified, because the departments and stakeholders involved in

implementing each layer are usually different. Functional layering also clarifies the business justification for the deployments; although each area is often budgeted from different departments and the costs of VoIP deployments frequently focus on specific components in the lower layers, the largest value of the technology is frequently found in higher-level IP-telephony and business applications. Defining all of the layers enables the cost of each layer to be justified within the broader context of overall business value. Defining these layers also enables more flexibility in how service providers and enterprise business solutions are related. Figure 1 indicates enterprise premise solutions on the left and service provider solutions on the right.

VoIP and IP-Telephony Functional Layers



CRM = customer relationship management
MPLS = Multiprotocol Label Switching
PBX = private branch exchange
SIP = Session Initiation Protocol
VoIP = voice over Internet Protocol
VPN = virtual private network
WAN = wide-area network

Source: Gartner Research

Here, we provide an overview of the five functional layers that comprise a complete VoIP implementation. Each layer provides a different type of required functionality. If these layers are viewed in isolation, the reliability and quality of the end result is at risk: The true value, costs and risks of the deployment are not accurately defined. For instance, defining VoIP-capable gateways and routers is required to ensure quality of service. Yet, it is difficult to justify these changes to the gateways and routers without referencing the applications that will use them. Similarly, enterprises seeking to deploy an IP private branch exchange (PBX) must consider all of the underlying requirements and costs. The

costs of deploying an IP PBX far exceed the simple cost of replacing the PBX: The infrastructure and underlying TCP/IP network connectivity must also be considered. Additionally, once an IP PBX is in place, other changes to enterprises applications and workflows may be enabled. Again, these should be considered part of the long-term plan. Because of this, enterprise planners must understand the synergistic, dependent relationship between the lower and upper layers of the architecture. The lower layers are difficult to justify without referencing the upper-layer applications, but once in place, these lower VoIP infrastructure layers can be leveraged by multiple IP telephony applications.

VoIP-Capable Networks: This layer of functionality enables wide-area network (WAN) connectivity between locations or enterprises, and is offered through asynchronous transfer mode, frame relay or, increasingly, through multiprotocol label switching (MPLS) and virtual private networks. In larger enterprises, governments and public institutions, this layer of functionality is provided by internal services. In other types of enterprises, it is obtained from network operators. Most operators offer multiple classes and types of service, but only some of these offer the quality suitable for VoIP.

VoIP-Enabled Infrastructure: The components at this level of functionality provide enterprise-specific infrastructure to enable and secure voice traffic over enterprise local-area networks (LANs). This layer does not provide the telephony itself. Components include gateways, routers and firewalls. Data and voice functions usually share the same infrastructure. However, VoIP demands additional requirements in key areas such as quality of service, availability, reliability, performance and business continuity. Power may also be required at this layer for many VoIP devices.

IP Telephony: This area provides basic telephony and voice switching functionality, including traffic management, call setup and tear-down, call control and reporting. Currently, the focus in this area includes IP PBXs, hybrid IP/circuit-switched PBXs, SIP phones and softphones.

Advanced IP-Telephony Applications: This level introduces the value-added telephony applications that build on base IP telephony/ IP-PBX capabilities. The most common IP-telephony applications are contact center functions, unified communications and

conferencing. Most of these applications leverage two unique capabilities of TCP/IP. The first is the ability to operate in a distributed environment that allows physically distributed sites, devices and resources to be operated as a single integrated environment. For instance, applications may enable virtual contact centers or remote access to real-time and messaging information. A second critical capability is the use of common protocols across different channels and applications, because it enables greater integration between applications and greater access to multiple channels. For instance, SIP can be used to set up communication sessions for voice and instant messaging (IM); the same application can also access messages, directories and calendars.

IP-Telephony Integration With Business Processes and Workflows: Broader IP-telephony initiatives often involve changes to business processes that will enable this new technology to be properly leveraged. These changes can include rules, roles, procedures and structures that are related to the communication and exchange among people and between the environment and the people. The specific changes differ between enterprises and industries. For instance, in higher education, the IP-telephony initiative may involve modifying the phone services provided to students. The new approach might employ a softphone, which is integrated with IM, unified messaging, presence and “find me, follow me” services. Students and faculty then have a complete communication setup anywhere they can plug into the campus LAN. In the retail and healthcare segments, an IP-telephony initiative may involve regional offices receiving personalized local phone and self-service coverage, which is managed and operated at a central corporate location. In the

financial services segment, IP-telephony initiatives may involve changes to the way that contact centers route phone and Web interactions to different locations for load balancing, and to better match client needs with agent skills. In all of these examples, VoIP and IP-telephony initiatives require changes at the business level to succeed, and the value of the underlying infrastructure changes are only fully realized if corresponding organizational changes are made.

Figure 1 depicts the differences between premise-based solutions (shown on the left) and those offered by service providers and network operators (shown on the right). At the lower layers, enterprises can develop their own VoIP-enabled infrastructure or they can purchase this as access services from their carriers. Similarly, at the IP-telephony layer, while an enterprise would consider deploying an IP-PBX on-site, the service provider could offer similar functionality via IP Centrex. At the advanced, IP-telephony application layer, service providers offer a range of hosted and managed solutions as alternatives to premise systems. The use of layers clarifies how and where these service provider functions can be used, as well as the responsibilities of the parties involved.

When grouped together, these layers provide the enterprise planner with a more-accurate understanding of costs and risks. For instance, a call center implementation will require high throughput, high-bandwidth WANs between their sites. This initial investment may be leveraged for toll bypass immediately. However, the long-term value to the enterprise is the ability to have multiple physical call center sites transparently networked as a single logical center with application integration across the sites.

Bottom Line: Enterprise voice over IP infrastructure, such as routers and gateways, are often defined and justified independent of IP-telephony initiatives; for example, an IP-private branch exchange deployment. However, this kind of disconnected approach leads to inaccurate planning and significant risks. These initiatives should be considered together to better understand the total costs, actual risks and true value. VoIP initiatives frequently focus on modifying the lower layers, such as routers and gateways. This enables functionality such as toll bypass. Similarly, IP-telephony initiatives, such as IP-PBX deployments, are frequently considered without accounting for the costs of voice enabling the underlying TCP/IP networks. For many enterprises, the largest potential value is found in how VoIP and IP telephony together will enable different, more productive business processes. Enterprises must view their VoIP and IP-telephony architectures in terms of functional layers, understanding that, although the layers have different sets of vendors, are based on different technologies, have different internal stakeholders and will evolve at different rates, all are required to deliver full business value.

Source: Gartner Strategy, Trends & Tactics Research Note, DF-20-2477, 16 July 2003

Acronym Key

IM	instant messaging
LAN	local-area network
MPLS	multiprotocol label switching
PBX	private branch exchange
VoIP	voice over IP
WAN	wide-area network

VoIP Helps Enterprises Leverage Unified Communications

The value of voice over IP architectures will increasingly be in their ability to integrate voice with other communications options more easily than circuit-switched alternatives.

Key Issue

During the five-year planning period, which voice applications and technologies will enterprises use to successfully build their voice services?

What migration strategies should enterprises use to migrate from circuit switched to packet voice technologies?

Strategic Planning Assumption

By year-end 2006, the highest value of VoIP architectures will lie in their ability to allow multiple software applications to leverage common voice infrastructure components (0.7 probability).

By year-end 2005, 25 percent of enterprises will have incorporated components and methods designed to support unified communications (0.7 probability).

Human communications are central to business processes. The pressure on enterprises to improve the speed and efficiency of their business processes is enormous. For example, a truck repair company obtains tangible benefits for its customers by dispatching remote repair mechanics rapidly to breakdown sites, or a healthcare provider achieves competitive advantage in responding to contracts by rapidly identifying the best matching therapist available in a region. A great deal of investment has been made to improve individual worker productivity and to make the system-to-system communications efficient. However, little has been offered to improve process that are human communications-intensive.

Communications-intensive workflows and work processes are ubiquitous; every vertical enterprise — and nearly every function within it — has a multitude of such human communication processes.

These communication functions are accomplished using separate, incompatible communication silos. For example, e-mail uses a completely separate network and device than do most live phone calls. Paging and instant messaging (IM) often represent other silos. Successful unified communications solutions will need to integrate a wide range of communication options with business processes and workflows.

Unified communication (UC) systems support enterprise workflows and business processes. As these UC solutions mature, their focus will shift. The initial focus for these products has been to provide a “gateway” function; this enables more of the current channels and devices to work with more of the corporate resources. As communication protocols open, communications will increasingly become an “any to any” environment, and the UC products will

focus on contact management and control functions, include routing and filtering of contacts, as well as on escalation and notification. These system decisions will be made based on presence information and personal profile information that may be stored locally or on a separate application server, such as an IM server or a personal information manager.

Reporting and analysis will become increasingly important. As this occurs, integration support with business processes and with workflow applications will increasingly play the central role in defining UC implementations. Solutions are emerging that provide consistent ways to support these enterprise requirements. The vendors listed in Note 1 provide UC products that integrate real-time voice, IM and unified messaging. More information on these types of systems and vendors is available in "Unified Communications MQ Selection Criteria for 2003" and "Unified Communications Magic Quadrant 1H03."

Voice over IP (VoIP) provides new methods for integrating voice communications with applications. To integrate applications in a circuit-switched telephony environment, applications must be tightly coupled with the underlying telephony infrastructure. There are several ways of accomplishing this. The first method is to include the functionality as software within the PBX. The second option is to link the application with the switch via computer-telephony integration (CTI). The third option is to have a separate platform with its own ports, as is common in many interactive voice response platforms. However, these often require CTI to enable call transfer. Because all three of these options are expensive, only a limited number of applications can be supported. In a VoIP environment, on the other hand, applications can directly control the TCP/IP protocols,

acting as the communication end point, and they can interact with the soft switch at a distance using protocols such as Session Initiation Protocol. Because of this, VoIP integrates more easily with applications than do circuit switched environments. By 2006, the highest value of VoIP architectures will lie in their ability to enable comprehensive communication management, and in their ability to allow multiple software applications to leverage common voice infrastructure (0.7 probability).

Combine UC and VoIP to achieve real-time enterprise objectives. The longer-term goal of standards-based UC is to reduce barriers to integrating communication functions with applications. Although, initially, most vendor solutions will require proprietary integrations, over time the market will evolve toward increasingly open approaches and solutions that offer more choices and lower costs. Live voice communications will remain a critical and central part of most business processes. To succeed, UC must integrate live voice, as well as the other channels, with a wide range of applications. By incorporating VoIP and UC into their plans, enterprises will be better able to integrate all of the communications needed to support their processes.

VoIP and UC architectures and products are at an early stage and have limitations. They have not been widely deployed, have limited ability to scale and often use proprietary extensions to open standards. Potential, longer-term benefits for enterprises are apparent, especially in the commonly performed work processes that experience delays due to human communications. Enterprises should review their work processes to identify where delays exist and consider how these

emerging technologies can be of assistance. Adoption of UC technologies will start among early adopters in 2004. By year-end 2005, 25 percent of enterprises will have incorporated components and methods designed to support UC (0.7 probability). However, these UC deployments will not all be linked to VoIP implementations. Midsize Type A enterprises — those that are technology-driven, use new technology strategies to gain a competitive edge, and are willing to risk using immature technology or ideas to gain this edge — will start to incorporate combined UC-VoIP solutions in this time frame. Enterprises with a more-moderate adoption profile will adopt the UC methods, but delay the VoIP aspect of the implementations until they follow the PBX replacement plans.

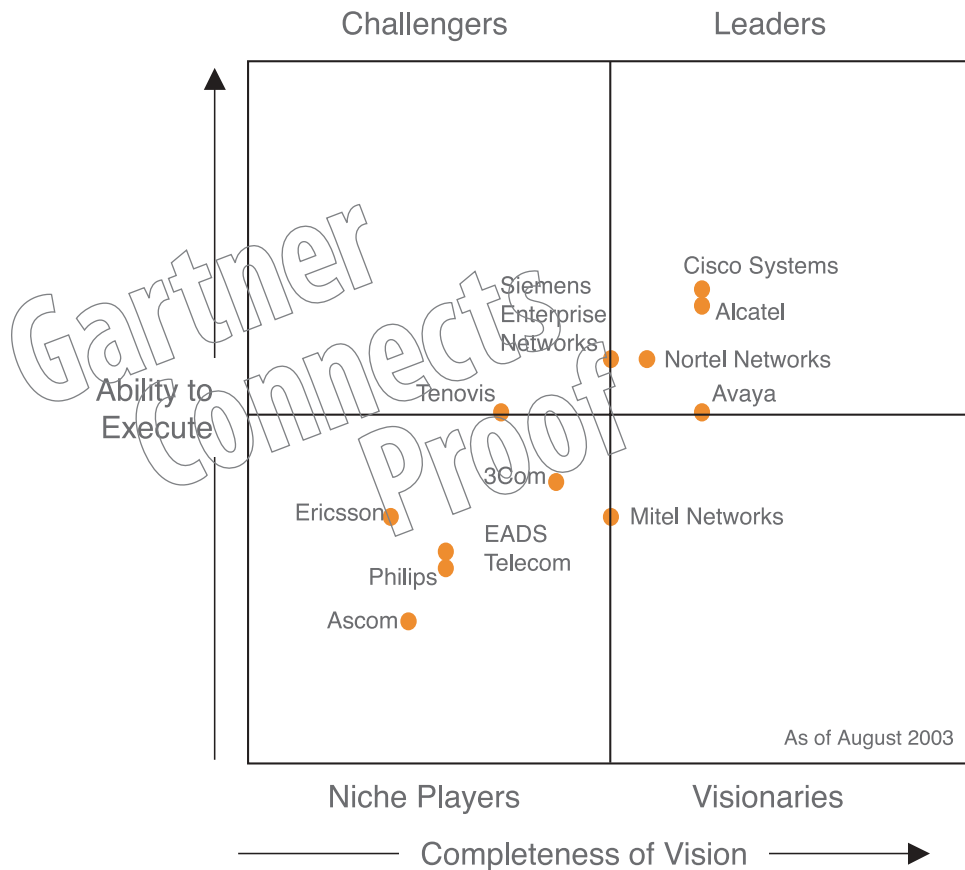
Bottom Line: As enterprises seek to gain a competitive edge by speeding their work processes, they should review their unified communications (UC) and voice over IP (VoIP) initiatives. The UC solutions will provide tools to optimize those processes involving human interaction, while VoIP and Internet Protocol telephony applications will provide enterprises with new and easier ways to integrate processes that require live voice.

Source: Gartner Strategy, Trends & Tactics
Research Note, SPA-19-4468, 12 March 2003

Acronym Key

CTI	computer-telephony integration
IM	instant messaging
UC	unified communications
VoIP	voice over IP

Magic Quadrant for Corporate Telephony in EMEA, 2003



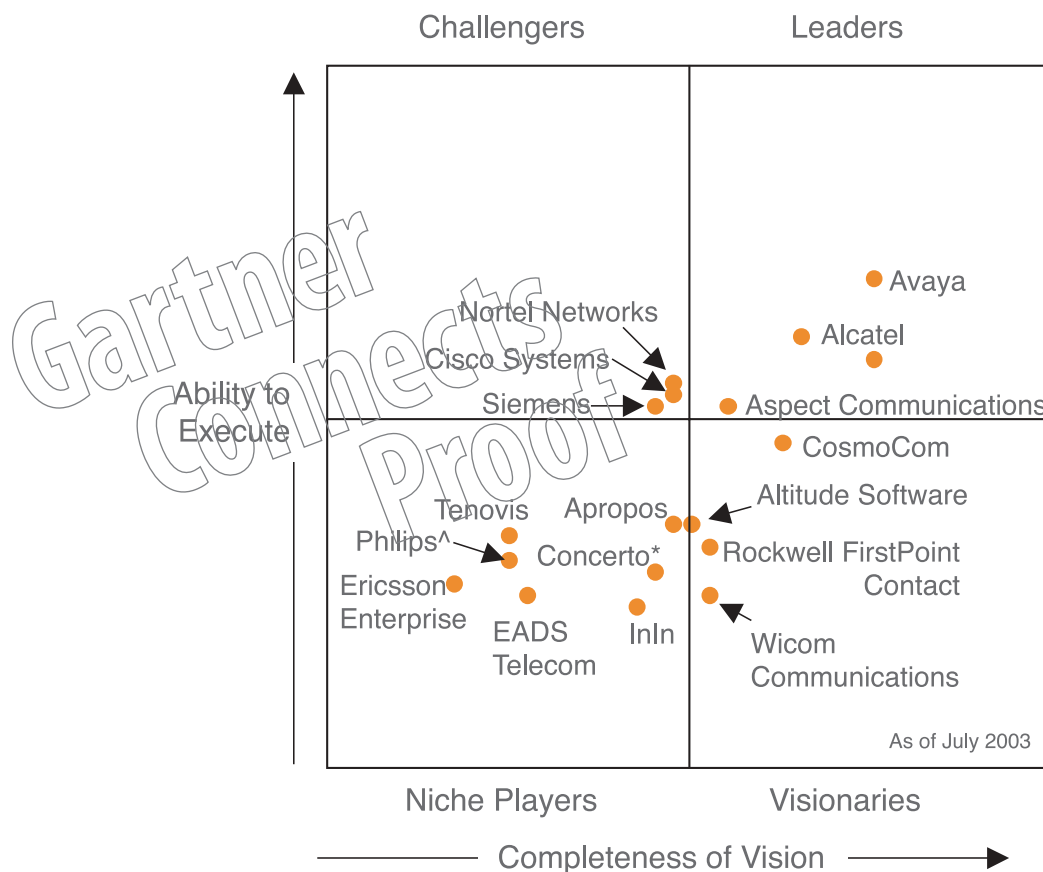
Extract from Gartner Market Analysis Research Note, M-20-6754, 2 September 2003:

Alcatel continues to execute well in the EMEA markets. The development of service providers is essential to competing against Cisco and to winning greater market share from incumbent telephony providers. Alcatel was quick to develop SIP for its OmniPCX Enterprise and eCommunication Center to deliver unified communications solutions. The company has signed with systems integrators like IBM, Logical Networks and Getronics, as well as network service providers. This multivendor strategy is essential to complementing NextiraOne, which is developing into a multivendor channel. Companies should expect Alcatel to extend its managed services propositions through service provider channels.

To view the full report visit: www.mediaproducts.gartner.com/reprints/alcatel_issue2/m_20_6754.html

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Contact Center Infrastructure Magic Quadrant for EMEA, 2003



[^]Philips: Philips Business Communications

^{*}Concerto: Concerto Software

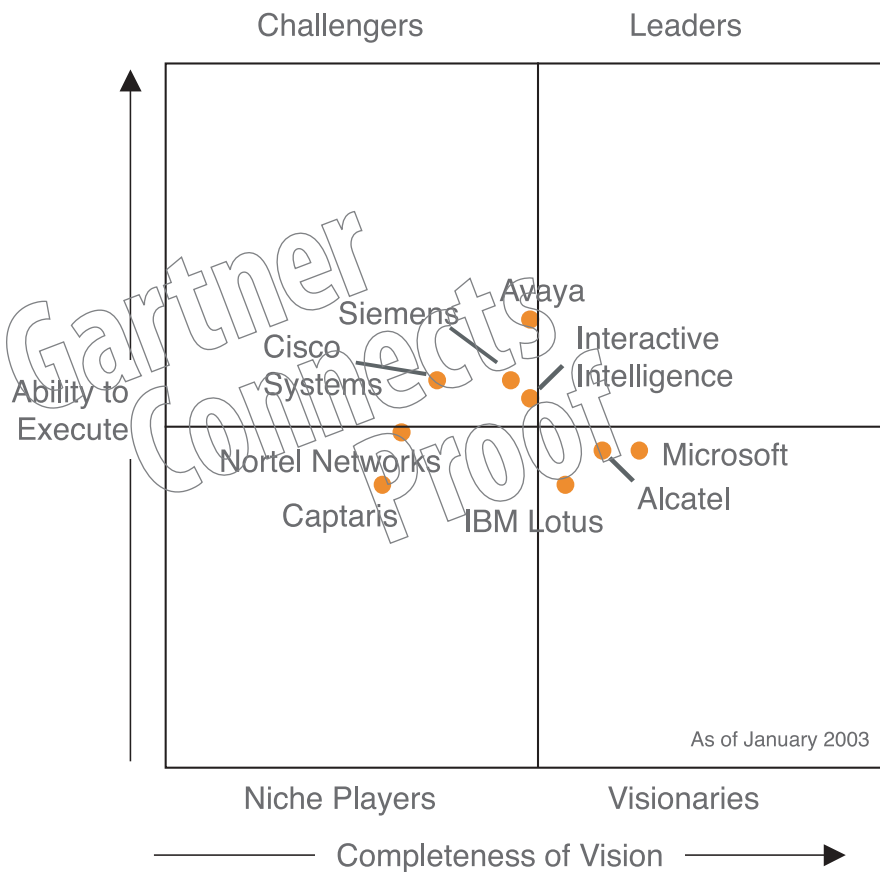
Extract from Gartner Market Analysis Research Note, M-20-1903, 16 July 2003:

Alcatel strengthened its position by integrating Genesys with OmniPCX Enterprise to create a high-end, multichannel contact center solution. It still supplies and supports its products across Europe through its former services organization, NextiraOne. Alcatel now has a wide enough portfolio to compete with Avaya, but has not sold into as many multinational corporate accounts. To improve its position in the Leaders segment, Alcatel needs to develop its reputation as a “business partner” in key markets like the United Kingdom, Germany, Italy and the Nordic region. It also needs to enhance its operational relationships with external service providers (ESPs) such as Accenture.

To view the full report visit: www.mediaproducts.gartner.com/reprints/alcatel_issue2/m_20_1903.html

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Unified Communications Magic Quadrant 1H03



Extract from Gartner Market Analysis Research Note, M-19-2411, 3 February 2003:

The Alcatel e-Communications Center* user model is built around four services: the Message service provides voice mail, fax and e-mail (Domino/Exchange). Phone services supports “real-time” phone functions. The Assistant service provides call screening and “find-me, follow-me” services. The Teamwork service allows data and IM interactions. These four services share a set of common Java 2 Platform, Enterprise Edition modules, including personal information managers, single logon and directories. While initially targeting the OmniPCX 4400 switch, the e-Communications Center plans to leverage the Genesys Tserver CTI interface for integration with third-party switches, the Genesys Voice Portal for common VoiceXMLenabled speech recognition support and the Genesys channels to North American markets. The e-Communications Center also supports multiple interfaces and options for business processes integration. To move to the Leaders quadrant, Alcatel will have to demonstrate that it can effectively deliver on its vision for UC and gain market acceptance.

*Re-branded January 2004 to: Alcatel OmniTouch Unified Communication

To view the full report visit: www.mediaproducts.gartner.com/reprints/alcatel_issue2/m_19_2411.html

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Alcatel Unified Communication Solution

Introduction

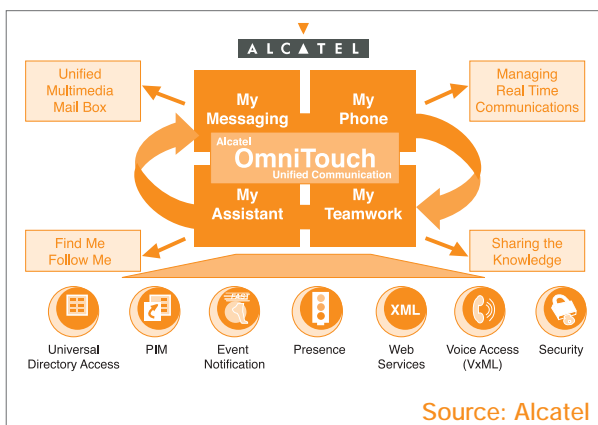
The present worldwide competitive business climate means that enterprises must cultivate successful relationships and interactions with customers, suppliers and employees. Changing client needs and effective people to people relationships can only be achieved by implementing major changes to communication systems and deploying new communication applications. Unified communication is a set of applications that handle real time and non real-time, personal and groupware communications.

1. Alcatel OmniTouch Unified Communication

1.1. A Suite for All Seasons

Alcatel OmniTouch Unified Communication is an enterprise software suite of IP-based Unified Communication applications for Enterprises designed for improving relationships, interactions and communications. It delivers personal and workgroup communication applications within a business context, for business process continuity.

Alcatel OmniTouch Unified Communication comprises four mutual interaction application groups:



My Messaging:

This is a true VXML unified messaging application for Microsoft Exchange™, IBM Lotus Domino™ and any

IMAP4 email server. Using existing mail services, it is an ideal solution for handling non-real-time communication tools with a single multimedia mailbox.

My Phone:

A PC telephony application that supports a Web client coupled with Microsoft Exchange/Outlook™ and Lotus Domino/Notes™. An excellent tool for improving real-time communication flow with all types of associated devices: analog, digital, mobile phones and multimedia PC (VoIP).

My Assistant:

This web and VXML personal assistant application defines the way call are routed and screened. It is coupled with Microsoft Exchange/Outlook™ and Lotus Domino/Notes™. An ideal tool for mobile workers and road warriors, helping them to stay in touch with their business environment.

My Teamwork:

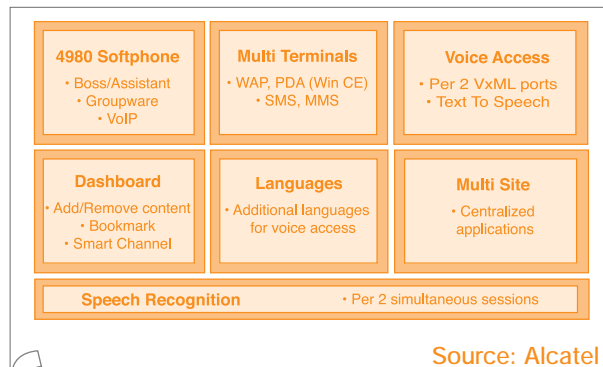
This is a set of Web conferencing applications offering audio conferencing, data sharing and Instant Messaging services allowing a group of users to share information and knowledge.

These 4 applications are powered by an Interaction Engine hosting 8 common and “transversal” services such as:

- Universal Directory Access (LDAP, Active Directory, Personal contacts, PBX directory..)
- PIM (Integration with Microsoft Outlook™ and Lotus Notes™)
- Event notifications (SMS, email...)
- SIP Presence (User presence)
- Web Services (for integration with other Business applications)
- VxML Voice access (most services provided by the 4 applications are accessible by voice using VxML 2.0 interface)
- Security (A common authentication engine and connectors with authentication servers).

Combined with these 4 applications, OmniTouch Unified Communication also comprises 7 application enhancers (options).

- **4980 Softphone.** A user option of My Phone application, to transform a PC into an a powerful phone set of the OmniPCX communication server.
- **Multi Terminals.** A system option for accessing applications on any device (Wireless PDA...)
- **Voice Access.** A system option to access applications by voice using VxML.

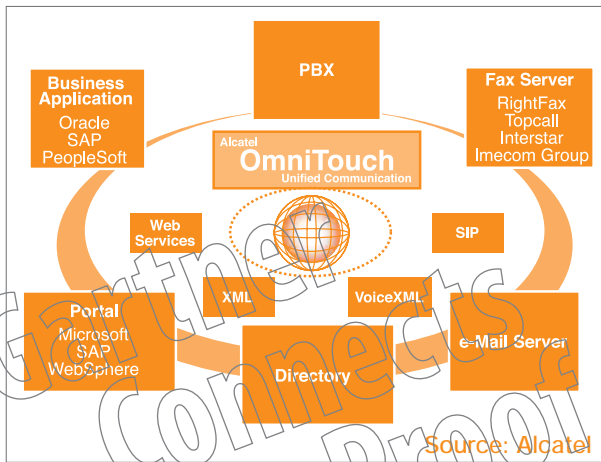


- **Dashboard.** A user option, that enables a personalized working environment (Web home page) on any device
- **Languages.** A system option allowing the use of several languages for voice access
- **Speech recognition.** A system option that permits spoken, key words for the navigation in the voice menus.
- **Multi Site:** A system option that enables the use of a centralized e-communication center for several sites.

1.2. Committed to Internet standards

This software suite implements a SOA (Service Oriented Architecture) and is based on the latest Internet standards and technologies, including Java (J2EE), XML/SOAP and Web Services, VxML, SIP, RTP and RTSP, making it compatible with present and future IP multimedia networks.

These new technologies, particularly XML/SOAP and Web Services simplify and minimize the cost of this integration and maximize the interoperability with existing corporate resources and business applications (mail servers, Communication servers, CRM, ERP, SCM, Portals, directories, for example).



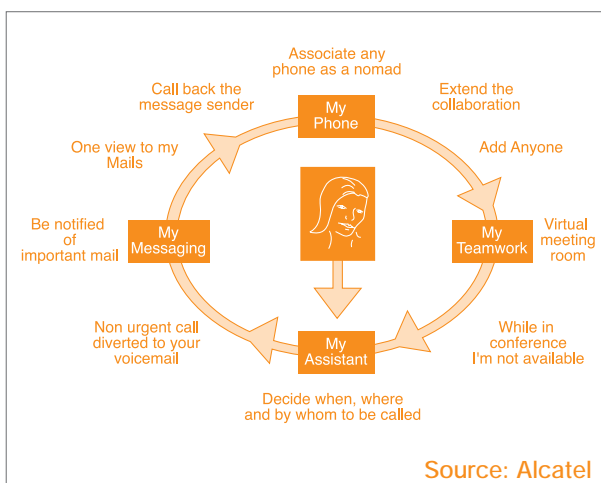
1.3. Key advantages of the Alcatel solution

- Homogeneous software suite built on a single interaction engine

This leads to a single system with single installation, administration and maintenance web tools for all the applications and a balanced user interface and identity.

- Applications with mutual interaction

Each application complements and interacts with all the others. This gives more services seamlessly as shown in the diagram below:



- Integration with business applications

Directories, Portal, fax servers, mail servers (Exchange™, Domino™), xRM, PIMs (Outlook™, OWA™, Notes™, iNotes™...)

- Access to services anywhere, any time on any device

Users can choose their own interface as the solution imposes no constraints. The options include: Web, mobile phone, wireless PDA, Outlook™, Lotus Notes™, Outlook Web Access™, iNotes™, or any kind of phone for voice access.

- Universal Directory Access (UDA)

All the applications can access to standard corporate directories as well as a communication server, directory and Outlook™ Personal contacts and Notes™ address book

- Some of the unique functions and services

— VXML Unified Messaging and Automated Attendant application.

— Web interface: no software installation. VoIP softphone.

— Web and VxML Call routing and screening services.

— Web conferencing with presence management.

— Native IP and SIP integration with OmniPCX Enterprise.

1.4. Key benefits for Enterprises

Alcatel OmniTouch Unified Communication brings the following benefits:

End users

- Improves personal efficiency, productivity and responsiveness
- Improves the communication flow
- User friendly tools that are easy to personalize

CIO/IT managers

- Cuts telco expenses
- Uses existing IT infrastructure and applications
- Easier integration with existing business applications
- Minimizes TCO (low training and integration costs, single administration...)
- Future proof

Business line managers

- Ultimate solution for highly mobile forces
- Increases teamwork efficiency
- Increases sales by boosting efficiency
- Does more with less (more productive hours)
- Guarantees business process continuity

2. Conclusion

Applications such as ERP, or supply chain, will require increasingly powerful applications such as Unified Communications to route real-time enquiries to the best contact through the available channel. It provides improved treatment of the thousands of exceptions slowing down business processes.

Web services, the catalyst for most innovation in the software industry, will simplify the integration. Unified Communication applications will also improve the productivity of mobile workforce.

Alcatel IP Telephony and Unified Communication Suites have been designed to standards that ensure business continuity, protect investment and maximize Return On Investment:

- IP, or dual IP TDM platform based on open standards
- J2EE, XML/SOAP to simplify the integration

Alcatel unique position in Gartner Magic Quadrants (IP Telephony, contact center and unified communication) illustrates its commitment to provide a best of breed application suite that ensures business process continuity through real-time multi-media communication, delivering context awareness with any interaction.

Alcatel IP Telephony, Unified Communication and Interaction Management have been designed to integrate and unleash their power to further differentiate Alcatel value proposition.

Source: Alcatel

Interview with Gartner Analyst Steve Blood

In this interview, Steve Blood, Research Director at Gartner, talks about the Web services market and the development of unified communications. His research area focuses on enterprise communications, tracking primary vendors, channels and service providers for the EMEA market.

Q. What is the definition of Web services?

A. Web services represent the minimum set of elements that are necessary to do distributed computing. They began life as Web-based XML protocols, though they've developed beyond that now. They employ one or more of a bunch of three technologies that are known by pretty ungainly acronyms. There's SOAP, which stands for Simple Object Access Protocol. There's WSDL, which is Web Services Description Language. And the other one, which is not so widely used, is UDDI, which stands for Universal Description Discovery and Integration language. These are the three types of technology that are used to deliver Web services. You do not have to use all of them. You can use one or more. Certainly SOAP is the one that is used most widely, and the underlying foundation for that is still XML.

Q. What are the benefits of Web services?

A. We can look at the generic benefits that everyone talks about, and then we can look specifically at a case study, based on the experience of one of our clients, a manufacturing company. Because we are using more standardized, reusable components, the development time for e-business projects comes right down, from months to weeks. Most companies find there are more levels of openness within Web services, and that projects supported by Web services can be implemented much faster. That has two implications — a reduction in the overall cost of IT systems integration and the ability to get a business up and running faster. In many cases, just the ability to sell more, faster, will outweigh the cost of systems integration, so there is a double benefit.

Low integration costs are achieved primarily through the use of SOAP and WSDL.

We did a case study on a Swedish manufacturer, which demonstrated all the generic benefits of Web services. But this company also found it could cut the internal human resources needed by 60 to 80 percent, when it was developing composite applications to support the fusion of end-to-end processes linking it to its partners. That represented a significant saving. The company found there were fewer internal and external custom-coding requirements. The re-use of existing code, which is a key Web service benefit, allows this manufacturer and its partners to license more services from third party vendors.

Improving business agility has been the key business value gained from implementing Web services. This is because a larger number of business services and even entire business processes can be easily outsourced to other companies.

Q. What is the state of the Web services market?

A. It is fair to say that the whole concept of Web services is partly hype. The Swedish manufacturer I was talking about is really an example of an early adopter, the sort of business we call Type A. But in general, there is more hype in the industry than there is actual demand from enterprises right now. The three phases of Web services adoption are, firstly, internal applications, then developing to trusted external parties and finally extending to the open market. Initially, companies will adopt Web services for internal applications, where they are



Steve Blood is a Research Director in Gartner Research.

Mr Blood has over 15 years' experience in the IT industry. Before joining Gartner, he was product marketing manager at Rockwell Electronic Commerce. Before that, he worked in the United Kingdom telecommunications industry in product management, sales and technical support roles for BT, Mercury Communications and NTL.

most appropriate for integration between business applications and communications. Gartner believes that by 2006, as vendors deliver new capabilities, more than 70 percent of new applications will use Web services in some part of their architecture.

So the use of Web services for internal applications started to become more established in 2003. From 2005, we expect enterprises will actively adopt Web services for their internal applications. Web services will be used in integrating supply chain, enterprise resource planning (ERP) and business process fusion projects.

By the middle of 2005, most companies will adopt Web services as a standard to connect to external parties — trusted partners and suppliers with whom they have strategic relationships

In terms of connecting to the open market, we think this will only start to become established in 2005.

Q. How will Web services affect the evolution of communications?

A. Here we are talking about exposing some of the functions and features of communications, like call transfer, conference, caller display, as Web services, to integrate business applications with communications more tightly and cost effectively. We can draw a parallel with the computer-telephony integration market. Using traditional telephony, which is very much proprietary, we have had to use CTI servers — middleware that enables integration to take place — and they are costly. It's at least \$2,000 per user for the software and at least as much again to integrate the systems and applications, and that is just too expensive to apply enterprise-wide. But the call center is only a small part of the total organization. As

communications architecture develops to Internet standards, it becomes easier to integrate telephony with business applications. Then we can share CTI-like capabilities across the whole of the enterprise, without the prohibitive cost of CTI servers.

Communications is becoming more important in terms of resolving both internal and external process issues. Business process functions will become more tightly integrated with the back office, as well as, say, field service technicians and sales people. Certainly, there is an opportunity for Web services to make quite an impact on the road warriors and mobile enterprises.

Q. How will those communications Web services boost business processes?

A. We need to look at how communications can have a positive effect on business processes. It is easy to say that seamless business processes would enable everything from initial demand stimulation through to fulfillment and service to be achieved automatically, without any user interaction at all. An example of an automated business process is amazon.com, where there is no human intervention. Demand stimulation and ordering take place on line, order progress is tracked automatically and goods are dispatched within days, sometimes hours. This is an example of a finely tuned seamless process.

But, in most organizations, this does not happen. What get in the way are the things we call "process exceptions". These are all the events that might cause a process to stop. Perhaps a sales person has ordered the wrong item, maybe through miskeying. Or maybe something that has been ordered is not available. Vendors like SAP readily recognize the importance of these process exceptions and have developed their own integration platforms to support

business activity monitoring, or BAM. A key function of BAM is notification of alerts, and these can take a number of different forms — delivery through wireless access protocol to mobiles, or through HTTP for e-mail, or played as an XML voice script over a telephone. These are very basic event notifications, but they can be greatly improved by tighter integration with unified communications applications.

Companies like Categoric Software, Tibco Software and Vital Images (Vtrea) are all third-party vendors of business activity monitoring middleware that does a similar job of alerting the enterprise users to process exceptions. But there's little or no intelligence in the method of notification. Suppose an event notification is wrapped up in an XML voice script and played to a cellular phone, but the person is on holiday and the phone is switched off. What then? The process stops and waits for a response. What's needed here is a common interface that will make decisions about the most appropriate medium for contacting these people, and what to do if they are unavailable to respond.

Rather than develop BAM middleware, vendors could present alerts to a communications vendor that will use presence detection to locate the user, employ routing to choose the right communication tool, and then deliver the event alert so that immediate action can be taken to resolve it. Categoric, Tibco and Vital Images are examples of event management middleware vendors whose products filter events by using rules to extract information from messages. They analyze events from many sources and make sure only one message is sent, rather than several messages from different applications. In many cases, these applications maintain databases, but more importantly, they generate outgoing alerts that are presented to human agents, the "BAM consumers".

That's really the key thing here, the link where the outgoing alert is presented to humans. This is where unified communications comes in, as a vital component for business activity monitoring. Unified communications is much more adept at defining what is the most appropriate communication medium to use. It will combine presence detection, the directory and individual routing rules to determine what is the right type of content to send to a particular individual.

Q. What are the prerequisites for unified communications applications?

A. For any platform to be successful, it must respect the Web services environment, and standards such as J2EE, SIP, XML and VXML. We've already said that enterprises will start adopting mainstream Web services from 2005. Any vendor in the communications environment that says it can help you resolve some of your exception reporting or event notifications in real time is going to be asked "How are you going to integrate this with my applications?"

Unified communications platforms can add value by choosing the best medium to deliver an alert. For example, a worker logged on through an IP telephone may also have a cellular phone switched on. Notification of the event needs to be presented to the individual. It would be easy just to present it over the cellular phone, but that would cost more than passing the call through to the IP telephone application. Unified communications determines the best communication medium to use and helps people take more control over the routing of those alerts.

Certainly, this is an area where the business value of IP telephony becomes more apparent. By using the XML-based display that most IP telephony vendors have developed for their IP communications

platforms, the user can respond to an alert without the need to power up the PC. The use of XML-based applications means that alert response using the IP telephone is simply an extension of the existing Web-based process. There is no additional integration effort required to extend this capability to an IP handset.

This kind of event management role is the domain of unified communications platforms, and it is where their real strengths lie.

Q. What are the benefits for end users of a communications suite which provides PC telephony, unified messaging, and collaboration and routing software?

A. It is convenient to be presented with voice mails, e-mails and faxes in a single Outlook window. It is also convenient to be able to define personal routing for telephone calls, so you can decide whether the calls are routed to your home, mobile or office phone. As well as the element of convenience, other benefits could be time savings and an improvement in efficiency.

But the difficulty is that these “soft” benefits do not add up to a business case. CFOs will only invest where you can point to a tangible return on investment. There has to be an ROI argument based on improving business processes. The link between managing events or process exceptions and integrating them with the communications platform represents the best opportunity for building an ROI model.

There are similarities here with the call center market, where, for example, Siebel software is deployed to agents' desktops. This enables users to be more efficient in the way they handle calls. Studies have shown that the duration of telephone calls can be cut by 20 minutes per day. The analogy is drawn with the

benefits that unified messaging collaboration and routing will bring to users.

But the real benefit of deploying something like Siebel software is the underlying CRM initiative deployed by the enterprise to increase revenue. Agents may be able to cross-sell or up-sell to another product, which ultimately delivers more revenue to the top line. That is similar to the way unified communications platforms can impact business processes. Introducing improvements that only affect the efficiency of the individual is difficult to justify. But if you can improve business processes and even speed up the production line, you can make a significant impact on the way the whole business operates.

Q. What is the return on investment for unified communications?

A. To build a return on investment model for unified communications, companies need to be able to show how deploying more intelligent communications to handle process exceptions and events can speed up the resolution of those issues. We are talking here about reducing the time to resolve process exceptions from weeks down to days, from days down to hours, from hours down to minutes.

Each of these steps has a cost implication for the business which needs to be measured. Metrics are vital to a business justification. Enterprises need to be able to measure the speed of responses to alerts before and after the implementation of enhanced communications applications. Each of the process exceptions can then be costed and the saving to the business can be calculated. This is the key driver that will justify the deployment of unified and IP communications in the future.

Source: Gartner

About Alcatel

Alcatel provides end-to-end communications solutions, enabling carriers, service providers and enterprises to deliver content to any type of user, anywhere in the world. Leveraging its long-term leadership in telecommunications network equipment as well as its expertise in applications and network services, Alcatel enables its customers to focus on optimizing their service offerings and revenue streams. With sales of EURO 16.5 billion in 2002, Alcatel operates in more than 130 countries. For more information, visit Alcatel on the Internet: <http://www.alcatel.com>

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