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Extend the Value of Microsoft Office Applications with Avaya Unified Communications

A step-by-step guide for IT leaders on the considerations, options and benefits of unifying communications

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Introduction

The mantra of any-time-and-anywhere communications is now being united with any way.

To realize the value of unified communications, most enterprises will have to integrate new communications solutions within existing infrastructures. Because some legacy systems will not offer a clear onramp to unified communications, an organization will want to evaluate vendors based on their abilities to minimize disruption by leveraging existing infrastructure and user experience, as well as their ability to help weigh the business, technical and product considerations that would yield the right solution to meet the organization's needs.

In doing so, enterprises will want to assess the breadth of integration options and the depth of integration. Options should encompass all communications applications that can be unified: telephony, messaging, mobility, presence and conferencing. A full complement of features will ensure those of critical importance to your organization can be readily deployed.

Avaya and Microsoft have leveraged their considerable individual technologies and platforms and roadmaps to create a combined vision to make real-time and non-real-time collaboration a reality for enterprises. Integrating the powerful communications applications from Avaya with the market-leading Microsoft software, sever, mobile, and line of business applications, results in unity of communications. This unity removes the barriers of time, geography, isolated applications, messaging formats, communication modes, and choice of device. Information and communications are then liberated from virtually any access limitation. The mantra of anytime-and-anywhere communications is now being united with any way.

Learn how enterprises can now increase productivity in measurable ways by allowing:

- "click-to-communicate" from familiar desktop interfaces;
- integrate in-house audio and Web conferencing to reduce expense and make meetings more effective;
- integrate e-mail, voice mail and calendars into a single client;
- reduce total cost of ownership on server management;
- extend functionality to mobile and remote workers;
- Also learn when and how to make integration decisions as well as the unique capabilities afforded by the powerful combination of Avaya/Microsoft.

The reality meeting the vision: How Avaya and Microsoft are unifying communications

The 3 most important unified communications attributes reported by customers are:

- Reliability and Security
- Seamless User Experience
- Convergence of Real and Non real time applications.

Avaya and Microsoft are leveraging Avaya Intelligent Communications solutions across Microsoft platforms, server tools, and applications to create a seamless communications environment. Such an environment will be of measurable benefit to the enterprise, to the individual within the enterprise, and ultimately to its custom-

ers. Combined applications increase productivity, are enterprise-ready by being reliable, scaleable and comprehensive, and connect instant messaging and telephony in existing Windows and Exchange environments.

Avaya Unified Communications delivers convergence of real-time and non-real-time business communication applications such as telephony, conferencing, e-mail, voice mail, instant messaging, video, and collaboration across a variety of interfaces, whether those are PC- or Web-based clients, telephones and mobile devices, or speech. Avaya provides integrated, multi-vendor business communications applications, systems and services reliably and securely. The result is a superior, seamless user experience across all enterprise communication solutions regardless of location, network or device.

Avaya's objective is to help its customers realize maximum value through a reliable and wholly integrated voice, application and desktop experience. Avaya's communications technology has been included into a number of Microsoft's desktop applications, some of which are illustrated below:

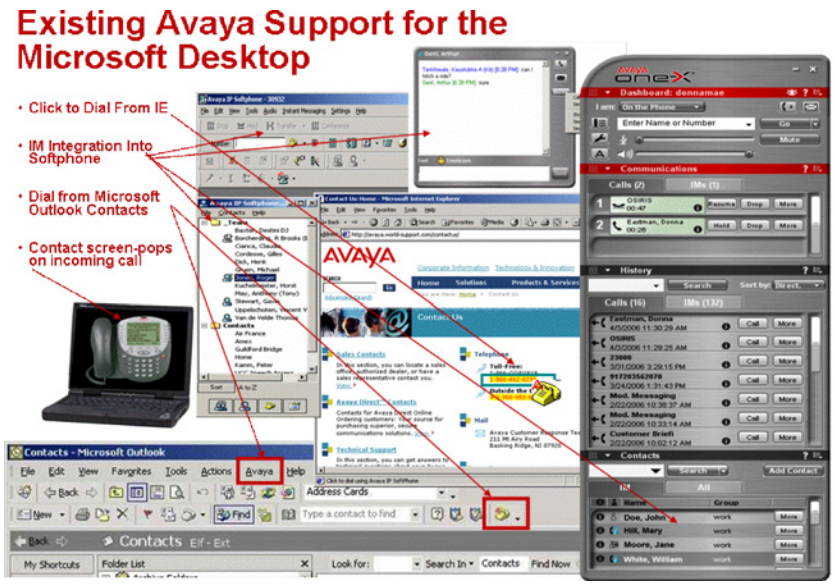


Figure 1

The Avaya/Microsoft partnership results in combining expertise and converging applications to deliver communications control. By providing the real-time context of presence along with instantaneous action through SIP, wasted efforts to communicate are eliminated.

Business Benefits of Unified Communications

Users drowning in messages—voice, e-mail, fax—and trying to manage them using multiple messaging interfaces will find the integrated approach of Avaya and Microsoft extremely liberating. Users needing to reach out and connect real-time will find their ability to do so greatly enhanced.

To help create **business value** for an enterprise, employees must be able to effectively communicate and be responsive to customers. Employees need to collaborate with other members of their teams, hierarchical chains of command and partners. They need to be able to quickly scan all voice mail, e-mail and fax messages in their Office Outlook mailbox, sorting them by date, sender or urgency with the "arrange by" function. When voice messages and faxes are filed with e-mail messages, users stay more organized and dramatically reduce the time they spend managing their messages. Users can see their voice messages at a glance, and no longer have to manage them in a sequential manner giving them greater opportunity to focus on priorities. What's more, their ability to act on priorities by knowing who is available and being able to communicate with them regardless of communication mode or device is extremely beneficial.

By helping employees communicate, share, interact, influence, direct and arrive at decisions, business collaboration becomes a core element of the value chain. Key characteristics for successful business collaboration include:

- The ability to **remain connected and maximize availability**
- The tools to **participate in multiple teams and create impromptu conferences** and meetings
- Easy and multimedia **access to the flow of information**
- The ability to **seamlessly shift between different communication modes and media**

From theory to practice seamlessly: a unified communications scenario

Liberating the worker to communicate effectively and responsively means allowing them to reach out when they need to, to whomever and to whatever they need to, from whichever device they are currently using. For truly unified communications, the individual must be able to move from desktop to destination without missing a beat. For example:

- Mike checks his **e-mail *and* voice messages in his Outlook inbox**.
- Needing to respond quickly to a message from Kelly, he notes that Kelly's "presence" status in Outlook has just changed from being on the phone to being online.
- Noting her availability, Mike **initiates an instant messaging (IM) session**.
- It quickly becomes apparent that a live conversation would be more expedient, so Mike **"clicks-to-call"** from Outlook to automatically set up a phone call with Kelly. (While setting up the call, the system **automatically detects** that both Mike and Kelly's endpoints support video and **initiates video simultaneous with the audio**.)
- Someone wanders into Mike's office, briefly interrupting. Mike places the call with Kelly on hold. (Since communications are unified, **both the audio and video are placed on hold**, and then opened when Mike takes the call off hold a moment later.)
- Needing to check with a consultant, Mike **initiates a conference call without placing Kelly on hold** (unlike a typical conference set-up that places people on hold.)
- With everyone together, Mike presses a button to **record the conversation, which will be left as a voice message in his voice mailbox**.
- With the discussion gaining momentum, Mike realizes that he has to leave the office for an important customer meeting. He **transfers the call to his mobile device while the call is in progress without losing touch of the conversation**.
- Mike's office has poor cellular coverage, but **Mike continues the call using the internal WiFi network**. (Even if he had cellular coverage, using internal WiFi saves him from consuming minutes in his cell phone plan.)
- As Mike gets further from campus, he's given a warning that the WiFi signal is getting weak. He **switches to the cellular network while the call is in progress**.
- Having just ended his call with Kelly and the consultant, Mike receives a call from the customer with whom he is scheduled to meet. (The customer dialed Mike's single business number, and Mike's **mobile phone simultaneously rang with his office desk phone**.)
- Before the customer heads for their meeting, he urgently needs to speak with Mike's systems engineer. Mike **uses the mobile client on his cell phone to transfer the call**.
- Now in his car, Mike uses **speech access eyes-free and hands-free to check his calendar** for his afternoon meetings and return a couple of calls. He then searches for the promised message from the systems engineer, finds the e-mail **and listens to it along with the attached Microsoft Word document**...all done on a single call.
- Mike arrives at his meeting, having moved the agenda forward by a full 15 minutes by communicating between participants enroute.

How to successfully implement Avaya Unified Communications in Microsoft environments—Integration options and considerations

As organizations consider their unified communications implementation strategy, they should seek to become well versed in the considerations and options available in a Microsoft/Avaya Unified Communications integrated solution. The following provides a guide of the key environmental, business and technical considerations and the current options for integration.

The Avaya initiative with Microsoft to jointly develop integrated platforms for communication-enabling business applications gives enterprises considerable flexibility and power to embrace the convergence trend.

Step 1: Embrace the convergence trend

Enterprise Communications historically has been architected out with separate domains for voice and data communications, requiring separate networks, systems and applications. Now, the dominant trend is to consolidate and integrate these elements into a single environment. With the rise of IP networking, a strong wave of convergence has followed that has built a common IP network infrastructure, leveraging a single network for the transport of diverse voice, data and video information.

The most visible examples of these kinds of integrated applications have been the emergence of multi-media messaging and contact centers In addition, real-time communications now allow mobile and remote workers to communicate from anywhere over any network. Control of voice communications is now being integrated with familiar desktop interfaces to provide a seamless experience and greater control for all types of communications. Enterprises that have successfully combined the multiple methods of communications into integrated mailboxes, portals, and service support workflows, have not only increased communications choices for those seeking to connect but have improved the efficiency and responsiveness of those being contacted.

The next wave of integration that is emerging is the integration of communications into core enterprise applications and business processes. Avaya has characterized this wave as the move to Intelligent Communications, which enhances business processes by communications–enabling applications and business processes.

The timing and pace of development in the migration to Intelligent Communications are likely to be determined by the cooperation of the applications developers and the leaders in enterprise communications like Avaya. An important basis for inter-company cooperation involves the role of standards-based versus the use of proprietary technologies and development initiatives. Open systems and standards are preferable in the long term because of the inherent efficiencies and, when used effectively, can make the integration of multiple applications simpler.

Depending upon how an enterprise is structured, convergence must also occur among the IT professionals in the organization: those who recommend and deploy business applications and those who recommend and deploy telephony applications. Both have a vested interest in the benefits accruing to the organization: institutionally, advantages include business agility, competitive differentiation, process improvement, customer loyalty, and employee retention. From a practical standpoint, both experts will collaborate to deliver unified communications throughout the organization to boost productivity, drive down cost, foster greater collaboration and simplify the individual's ability to communicate effectively.

The Avaya initiative with Microsoft to jointly develop integrated platforms for communication-enabling business applications gives enterprises considerable flexibility and power to embrace the convergence trend.

Step 2: Integrate telephony into workflow

Why integrate telephony?

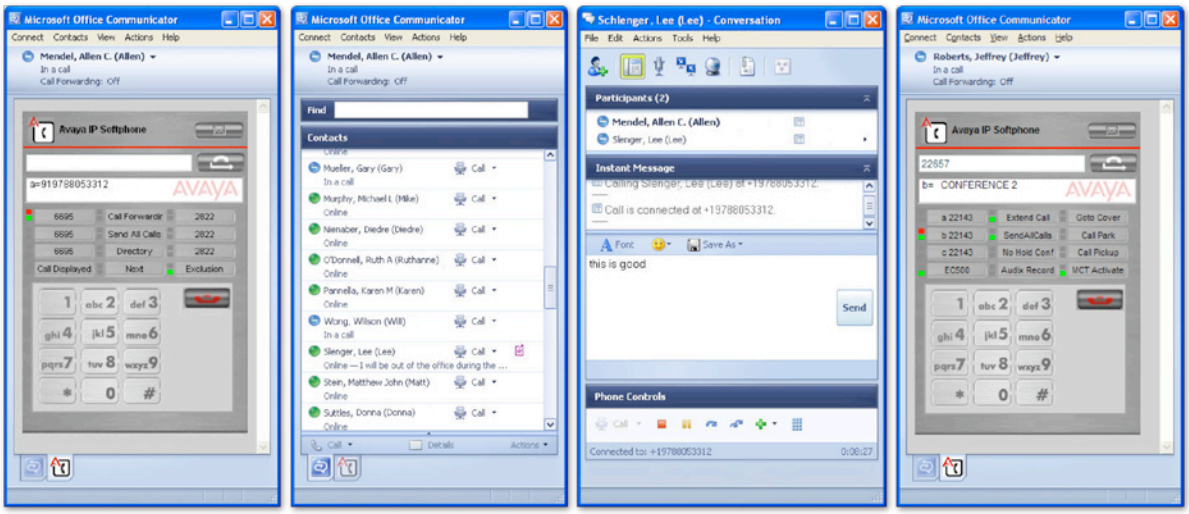
The ability to focus on the task-at-hand is a luxury in short supply in many enterprises and among millions of knowledge workers. The increased pace of work life and the need for speed-to-market have made it imperative that solid productivity enhancements such as unified communications become integrated. Integrated telephony empowers individuals to better initiate and, indeed, control their communications by giving them information on who, what, when, where and how they can communicate.

"Presence" is changing how people communicate. Presence means knowing that when you click-to-communicate (and much more)—you will connect with the person you most need to reach.

Integrating telephony on the desktop allows you to:

- Locate available colleagues faster: gives you the foreknowledge to know if you can reach the individual you seek at any given moment
- Easily shift modes of communication: rather than iterative IM or e-mail exchanges, you escalate to a real-time call instantly
- Eliminate moving from application to application
- Eliminate punching numbers on a keypad; never misdial again
- Allows you to shift from the PC or desk phone to a mobile device, or from a mobile device to the desktop while a call is in progress

To integrate telephony with Office Communicator, Avaya offers two approaches to meet different sets of user needs and IT topologies. It enables Microsoft Office Communicator to achieve call control and telephony presence information, via click-to-call from Microsoft Smart Tags, internet Explorer and Office applications, within an Avaya communications environment.



One integration model, shown in Figure 2, is server-based and utilizes CSTA (Computer Supported Telephony Applications) over SIP communication links to enable Avaya call control functions to be exercised through Microsoft's Live Communications Server 2005 (LCS). Avaya Application Enablement Services (AES) act as a gateway between the Live Communication Server and Avaya Communication Manager. This configuration does not require software to be deployed to end user PCs. It supports basic telephony features such as:

- Make a call
- Answer a call
- Disconnect a call
- Hold
- Conference
- Transfer
- Generate DTMF (Dual Tone Multi Frequency) tones

AES provides off-hook presence status to show availability for setting up a call with another party within the Avaya system.

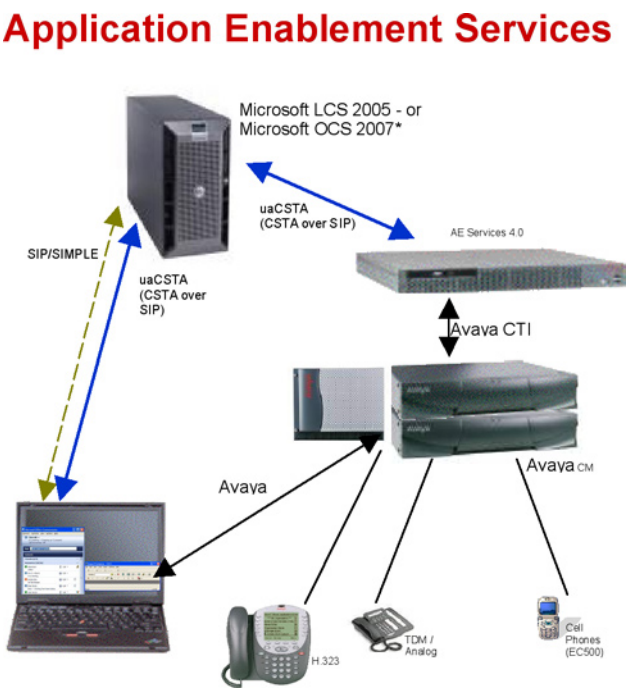


Figure 2

*Future availability

The second integration method, shown in Figure 3, uses IP Softphone integrated with MOC and LCS directly from the user's PC. It supports the same capabilities as noted above and provides additional functions to meet advanced needs.

- **Avaya Tab within Microsoft Office Communicator:** A tab is created from which the user has access to advanced call control features such as Extension to Cellular, one-touch record, transfer to messaging, whisper paging, call park/call pickup, and many more.

- **Click-to-call from Microsoft Internet Explorer:** Avaya software scans an HTML page being viewed with Internet Explorer to identify phone numbers. It highlights the number so the user knows that it is active. When the user places the mouse over the number they can click-to-call to initiate the call and open a MOC conversation window.

- **Outlook Contacts integration:** When an inbound call arrives, if the call line/name ID matches a phone number of a contact in Outlook, an alert will be created indicating the caller's name and number; the user can opt to have the full contact record open automatically.

- **Video integration:** Desktop video can be integrated with telephony. The user can identify an individual's availability with presence, place a call as usual, and then add video with a single click. Video windows can be automatically be triggered by voice calls, and functions such as hold and transfer operate both on voice and video in synchronicity.

    - Video integration managed through Avaya Communication Manager allows callers to use one phone number for both voice and video, thereby assuring convenient access to high quality person-to-person or group video conferencing. A unified dial plan shares the same address book for all voice and video endpoints (eliminating the need to know the IP address for video).

    - Leveraging Avaya Communication Manager as the gatekeeper, bandwidth is managed over the WAN to prevent saturation by video, balancing usage for consistent performance of other applications, which in turn, reduces infrastructure requirements. Further, Communication Manager allows for privilege-based prioritization to extend bandwidth to specific users or conference rooms.

    - Leveraging a single IP infrastructure with Avaya Communication Manager and Avaya IP Softphone allows an organization to add video capability without adding infrastructure.

- **Call Logs:** A listing of calls that indicates the type of call (incoming or outgoing, with or without video, missed calls), name, number, date, time, duration, and the ability to record notes. The user can sort the log and dial numbers directly from the log.

- **LDAP integration:** look up names and contact information in a variety of corporate directories.

- **Operating modes for remote users:**

    - PC-Only: Call control and voice is delivered via the PC. Ideal for remote users in a hotel, a location with Internet-only or where it is not practical to use the telephone line (for example, a home with only one line). Voice is sent to the PC using voice-over-IP (VoIP).

    - Dual-Connect: Call control is delivered via the PC, while voice is sent to a designated telephone. Ideal for remote users to receive toll quality voice when a telephone line is available. When an inbound call arrives, Avaya Communication Manager redirects the call to the designated telephone. When placing an outbound call, Avaya Communication Manager first calls the user, and then places the outbound call.

- Enterprise Identity: No matter which operating mode is used, all calls made or received appear to be coming from or to the business extension associated with the user.

Figure 3

*Future availability

Both methods of integrating with Office Communicator provide click-to-call, call control, and integrated telephony/IM presence. The server-based solution is ideal for wide-scale deployments of users that require basic telephony functions; it is completely centralized and there is no software to be implemented on end-user PCs. The client-based model is ideal for those who make use of powerful telephony features provided by Avaya Communication Manager. Some organizations may choose to deploy both solutions: the server-based model for the masses and the client-based model for users with mobile or remote needs, and for those that require the advanced telephony functions.

Avaya is also working to enable Microsoft Office Communicator to act as a softphone within an Avaya communications environment, and creating an Avaya Softphone plug-in module for Office Communicator.

Step 3: Unify All Messaging

Another consideration in integrating Avaya and Microsoft environments involves the selection of message stores and the ways they will be accessed. Unified messaging, the act of uniting disparate message stores and providing output to familiar applications and software, can take different forms as an enterprise network evolves. Requirements run the gamut from an enterprise simply looking to consolidate servers for improved cost control and administrative simplicity to an enterprise looking to extend control and simplicity to the desktop—providing desktop access to e-mail, voice mail and fax messages on a single graphical user interface.

Avaya allows an enterprise to move to a unified messaging solution while introducing minimal disruption for users. Avaya Modular Messaging supports the AUDIX, Aria, and Serenade telephone user interfaces. Thus,

users can move to unified messaging to gain the benefits of using Outlook to manage messages on the desktop, while maintaining the use of familiar touch-tone interfaces to access messages when they are away from their PCs. In the multi-location enterprise, Modular Messaging is designed to introduce unified messaging while it co-exists in a broader voice mail network. Modular Messaging can be networked to other messaging systems using standards such as SMTP/MIME, VPIM V2, and AMIS; and Avaya networking protocols such as Octel Analog Networking, or AUDIX, Aria or Serenade Digital Networking.

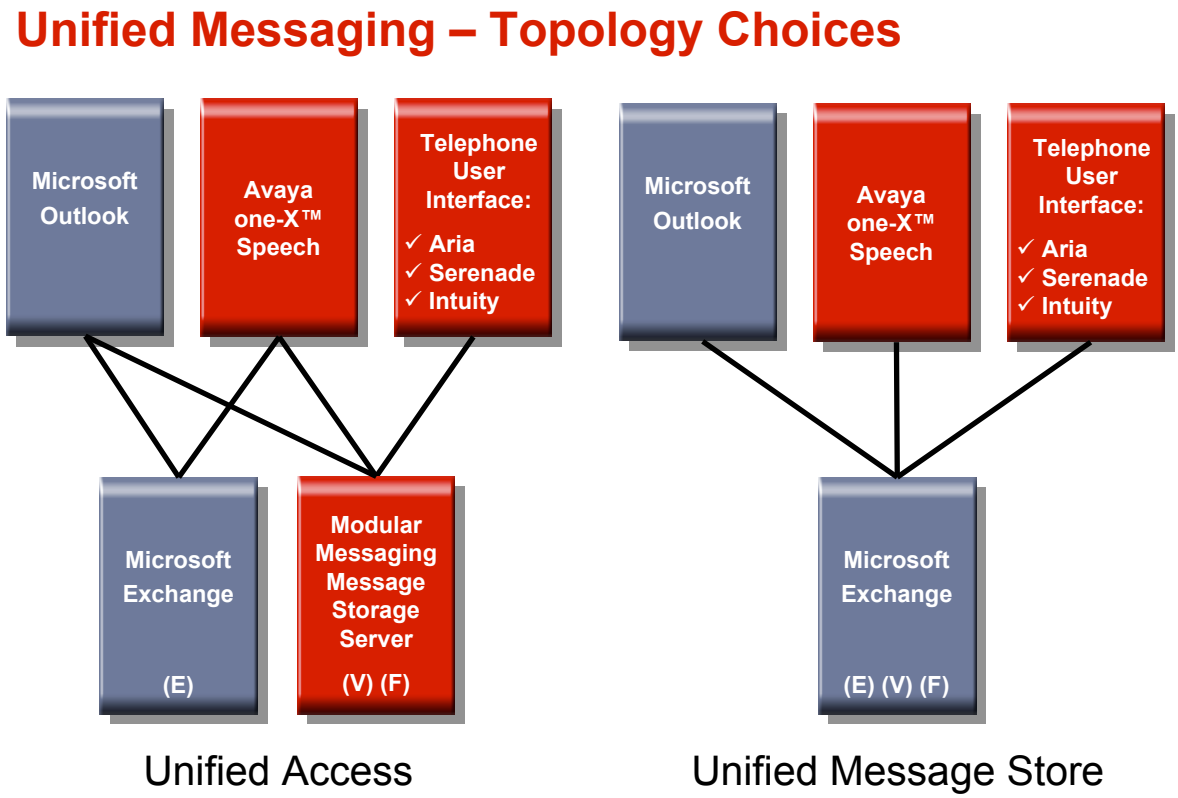


Figure 4

There are two models of messaging unification to be considered, as depicted in Figure 4: unified access and unified message store.

The unified access approach allows Outlook to be used to access e-mail messages from Exchange while simultaneously accessing voice messages from the Avaya Modular Messaging Message Storage Server. Architecturally, Avaya provides add-ins for Microsoft Outlook for either Avaya Modular Messaging Message Storage Server (MM-MSS) or Microsoft Exchange (MM-Exchange). Users can also access Subscriber Options directly as an Outlook add-in or as a Web-based application to administer their mailboxes. Note that, the telephone user interface (TUI) does not provide e-mail-reading for messages stored in Exchange, though mobile users can access both e-mail and voice messages via speech commands using one-X Speech.

In the unified message store approach, the end-user desktop functionality is similar to unified access, in that Outlook is used to access e-mail and voice mail. However, Exchange is used to store e-mail, and voice and fax messages. With a unified message store, the TUI provides Dual Tone Multi-Frequency (DTMF) access to all messages stored in the user's inbox on the message store. This means that the TUI can provide access to voice mail along with e-mail-reading (via text-to-speech technology) of messages stored in the corporate e-mail system.

Enterprises that opt for the unified message store approach realize the savings that can accrue from having a single messaging architecture. A unified message store reduces IT expense by establishing a single solution to operate and maintain: directories, message store, back-up procedures, administration, and servers. In addition, a single, unified message store solution leverages the investment, operations, and business practices associated with Microsoft Exchange.

Some organizations, considering unified messaging for their users, resist the idea of allowing access to voice mail messages from Outlook because of corporate governance and security concerns. On the one hand, there is a desire to empower users to access voice messages through Outlook so they can sort and manage their voice messages in a way similar to the management of e-mail. On the other hand, some enterprises are concerned about the ease with which company confidential voice messages can enter the e-mail and Internet domain. The mingling of voice messages, e-mail messages and network folders may introduce requirements for archiving and tracking beyond that which is desired or necessary.

The Modular Messaging Restricted Outlook Client is an optional client that addresses these problems. Users can use Outlook to access voice messages stored on the Modular Messaging Message Storage Server, which is kept separate from Exchange, thus providing unification at the desktop. This version restricts certain capabilities that are available with the unrestricted client. Messages can't be moved or copied to other Exchange or personal folders, and can't be exported to the PC. Message playback is by way of the telephone or by streaming the content to the PC. No permanent copy of the message is left on the PC. Instead of allowing messages to be addressed to any Internet recipient or even your enterprise e-mail address, messages can only be addressed to local and networked voice mail subscribers of the system. When the restricted client is used, a message is permanently deleted when the user deletes the message; unlike the unrestricted client in which the deleted message is moved to the deleted items folder. Hence, enterprises that are concerned about the storage, portability and distribution of voice messages as a result of moving to a unified messaging solution, can minimize these issues by using the Modular Messaging Restricted Outlook Client.

Moving to a unified message store for e-mail and voice mail is typically a change in messaging architecture and topology for enterprises. As such, there are a number of business and technical considerations that need to be addressed, including:

Network and environment assessment

- The messaging requirements of a unified message store increase the utilization of the e-mail server, mailboxes and system administration. The CPU utilization and memory requirements of e-mail servers need to be able to support the additional processing requirements for the voice mail application. This includes allocating storage space for voice messages; Avaya can help to calculate the impact that voice messages will have on a current e-mail store so that incremental space can be granted.

- With a unified message store solution, all of the communications for the application run on the enterprise's network. Thus, the occupancy of the IP network needs to be assessed to determine if it can support the additional load, and to provide the responsiveness for the real-time aspects of the solution. This includes evaluating the proximity of the e-mail message store to the PBX or communication servers.

- Since the unified solution leverages the enterprise's infrastructure, the release level of e-mail, how it is configured, operating systems, what is being used for directory authentication, and other hardware, software, and operating system elements that will be involved in the overall architecture and its topology need to be running reliably and in harmony.

Corporate governance procedures and requirements

- For customers that want to retain copies of all messages, including voice mail, a unified message store is an ideal solution. For enterprises that want to retain e-mail but not voice mail, either their archiving applications must be able to filter out the voice messages or they should select the MM-MSS to keep the voice mail store separate from e-mail.

Avaya is unrivaled in its ability to "mobilize" the workforce, even as it unifies their communications.

Rollout and migration plans

- If the objective is to rollout unified messaging to communities of users there are two options: 1) Implement MM-Exchange for a sub-set of users, and have that system co-exist with traditional messaging via voice mail networking until such time as all users have been moved to the system with the unified message store, or 2) Implement MM-MSS for all users, and selectively implement desktop messaging via Outlook Add-Ins.

The Avaya/Microsoft alliance brings a strong combination of end-user and IT benefits that create a compelling case for unified messaging as a key part of an enterprise's total unified communications integration strategy.

Step 4: Extend unity to mobile users

Avaya is unrivaled in its ability to "mobilize" the workforce, even as it unifies their communications.

Affording the workforce mobility is one of the most important productivity enhancements for many organizations. But, if functionality is jeopardized for mobile workers, productivity gains are compromised. With its unified communications solutions, Avaya extends the same functionality to the mobile user.

Extension to Cellular allows the user to transfer a call to a mobile device or from the mobile device to the IP Softphone or desk phone while the call is in progress, making the change of locations seamless. A call may have started by clicking on a name in the Office Communicator buddy list, but that call can be shifted to the mobile device to provide portability of the call. It also saves money should a call come in on a mobile phone while the individual is at his/her desk: the call can be shifted to the desk phone to avoid consuming cellular minutes.

Extension to Cellular provides simultaneous ringing of the business phone and the mobile phone. Thus, one never has to miss a call when on the go. When a customer is trying to reach an employee in the office, it will ring on his/her business line and mobile phone so the call is answered whether he/she is working remotely or on the road.

Avaya one-X Mobile extends the capabilities of a business line to the mobile device. A call from a mobile phone will first call Avaya Communication Manager and then dial out from there. Thus, enterprises can take advantage of Avaya Communication Manager reporting, least-cost routing and features such as hold, conference, transfer, park, call forward, send all calls, etc. The mobile phone thereby becomes a full-featured device—from virtually anywhere.

When the user places a call using one-X Mobile, his identity is matched to the enterprise business line, so the call recipient will recognize the call line/name ID consistent with the business line. Eliminate the need to dispense multiple reach numbers to business contacts. The simplicity of a single phone number cannot be overstated—for both workers and those trying to reach them. And the enterprise with a highly mobile workforce still maintains the relationship with the customer by owning the single number.

Avaya one-X Speech provides eyes-free, hands-free, speaker-independent access to Microsoft Exchange for e-mail, calendar, contacts, voice mail, tasks and reminders. The user calls the speech server, which is connected to Avaya Communication Manager or other third-party PBXs. It is integrated to Exchange for access to e-mail, calendar, and voice mail if using Exchange as the message store for voice messages. It is integrated to a corporate LDAP directory, which could be Microsoft or some other directory. It is integrated with the voice mail store if it is separate from Exchange. Avaya one-X speech can be integrated with a heterogeneous mix of up to 50 voice messaging systems including Modular Messaging, Intuity AUDIX, Octel 250/350 (Aria), and Octel 200/300 (Serenade).

Avaya IP Softphone for Windows Mobile 5, Pocket PC and other Windows-based devices is an IP telephone client for WiFi-networks. Users can utilize their PDAs or specialized hand-held devices—such as Symbol M50 or M70 devices—to have built-in telephony. It provides transparent access to real-time voice communications and productivity-enhancing Avaya Communication Manager features such as multiple call appearances, transfer and multi-party conference—all in the convenience of a handheld device.

When working remotely, IP Softphone can be used as the end point that Office Communicator is using, whether integration with Avaya Communication Manager is by way of server-based model with Application Enablement Services, or the client-based model directly from IP Softphone. The remote configuration can be optimized to provide the highest voice quality based on the type of network and communication resources to which the individual has access. There are two core elements to communicating with IP Softphone: Audio (speaking and listening): taking place either through the PC or through a telephone; and Command and Control: initiating, managing, and terminating communications using the desktop interface or the buttons on a telephone.

Three modes of operation are available for the Avaya IP Softphone:

The **Shared Mode** is only used when working at the desk phone where an extension resides.

- All speaking and listening is done through the desk phone attached to Avaya Communication Manager
- When a call is initiated from MOC or IP Softphone, a desk phone goes off hook and dials the number and conversely when a call is initiated from a desk phone, it will be indicated as such within IP Softphone
- As features are used on the clients to manage the call (e.g. hold, conference) it will be indicated as such on the desk phone and conversely as features on the desk phone are used to manage the call it will be indicated as such on the clients
- A call can be terminated by hanging up the desk phone or dropping the call from the clients

The **PC-Only** is ideal when working in a hotel room or home office with cable or DSL.

- All speaking and listening is done through the PC multi-media capabilities
- All call control is performed through the clients

The **Dual-Connect** is designed for the remote worker with access to a telephone for toll quality voice.

- All speaking and listening is done through any telephone designated by the user. This could be a home phone, home office, virtual office, mobile phone, etc.
- All call control is performed through the clients

- The user instructs Communication Manager where to route all calls when he first logs into the IP Softphone
- Inbound Calls
    - When a call arrives for the extension, the Avaya Communication Manager reroutes the call to the designated number
    - The designated phone will ring normally and the clients will provide a visual and audio indication of the incoming call
    - The user need only answer the telephone as he would for any other call
    - Once the call is in progress, the call is managed (e.g. hold, conference, transfer, etc.) using the clients
    - The user can terminate the call just by hanging up, or dropping the call from the client
- Outbound Calls
    - The user uses any of the techniques within Office Communicator or IP Softphone to originate a call (enter a number, click on a contact, etc.)
    - Avaya Communication Manager first places a call to the user at the telephone designated by the user
    - Once the call has been answered, the Avaya Communication Manager then places the outbound portion of the call
    - Once the call is in progress, the user can manage the call (e.g. hold, conference, transfer, etc.) using the clients
    - The user can terminate the call just by hanging up, or dropping the call from the clients

Note that the inbound call originators or outbound call recipients receive no information regarding the number or location of the user beyond the extension number associated with the user

See sidebar for more benefits of single number simplicity.

One-Number Simplicity: Avaya
One person, one number, one organization

Flexible management, even while roaming. Avaya IP Softphone for Windows Mobile 5 allows the extension to be managed on a PDA over the WiFi network as the user roams the office or campus environment.

Remote/virtual workers reachable at their usual numbers. The user of IP Softphone (integrated with MOC) working at a remote or virtual location (for example, a home office, a client office or hotel room) can answer a call directed to their business number from wherever they are—eliminating the need to publish separate mobile or virtual numbers.

Multi-tasking calls for multiple simultaneous calls. Avaya Communication Manager allows for multiple line appearances to be associated with an extension. This allows for multiple independent calls, originated or received at the business extension, which can be managed simultaneously. For instance, one can receive and answer a call while on a call already in progress, then place both appearances on hold while another outbound call is placed. One number simplicity is available on the Avaya hard phones, IP Softphone, and the Avaya tab within MOC.

Caller ID a constant. What about the mobile number showing an ID on outbound calls? Calls made from the IP Softphone, no matter where and which operational mode is being used, will appear to be coming from the business line. Likewise, calls made from one-X Mobile and one-X Speech. Extension to Cellular maps the cell phone to the business extension.

One mailbox eliminates cost, recaptures time. By directing all calls to the business line, the user can eliminate the need for a voice mailbox on their cell phone, saving the cost from the mobile provider. More important, they now only have a single mailbox to check. Also, when the user gets a voice message, they can be more responsive because they can forward it to a colleague for action or information, and can access all messages in the Outlook interface.

One number for all calls, one mailbox for all messages. Voice and fax messages also can be received on the same number, as can TTY calls. In turn, these are deposited in the same mailbox (and made available through Microsoft Outlook). If a caller reaches a voice mail box, he/she can be given the option to request a notification message be sent, all as part of a single call flow. There is no need for the caller to try a second number.

Conclusion

Avaya has brought an integrated and reliable voice, application and desktop experience to the market in cooperation with Microsoft.

Avaya has been at the forefront of convergence by architecting the network over an IP infrastructure that handles both voice and data. Avaya solutions—while at the vanguard of technology for the enterprise—are first and foremost designed to be practical: to streamline operations, cut costs and make the worker more productive among many other benefits. Nowhere is that more apparent than with Unified Communications.

Enterprises can now increase productivity in measurable ways by allowing "click-to-communicate" from familiar desktop interfaces; integrate in-house audio and Web conferencing to reduce expense and make meetings more effective; integrate e-mail, voice mail and calendars into a single client; reduce total cost of ownership on server management; extend functionality to mobile and remote workers.

Avaya is equally committed to work with other key applications providers to incorporate communications-enabling capabilities into its applications. By taking a similar standards-based development approach with other players to offer competitive choices for the market, Avaya leverages its large enterprise and small business experience and industrial strength communications for the benefit of its customers, regardless of their choice of desktop applications.

The partnership between Avaya and Microsoft is just one of the examples of Avaya leadership in offering Intelligent Communications.

About Avaya

Avaya enables businesses to achieve superior results by designing, building and managing their communications infrastructure and solutions. For over one million businesses worldwide, including more than 90 percent of the FORTUNE 500®, Avaya embedded solutions help businesses enhance value, improve productivity and create competitive advantage by allowing people to be more productive and create more intelligent processes that satisfy customers.

For businesses large and small, Avaya is a world leader in secure, reliable IP telephony systems, communications applications and full life-cycle services. Driving the convergence of embedded voice and data communications with business applications, Avaya is distinguished by its combination of comprehensive, world-class products and services. Avaya helps customers across the globe leverage existing and new networks to achieve superior business results.

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