adomo

An Open Approach to Advanced Voice Applications for Cisco CallManager

In the world of the datacenter, we have come to expect a level of system and application interoperability that allows us to flexibly deploy best-in-class hardware and software to solve our business problems. Companies choose servers, networking equipment, and applications independently of one another, knowing they can be deployed with minimal effort. Enterprise applications are able to:

1. provide flexibility by running on off-the-shelf systems from various vendors

2. leverage common protocols and shared infrastructure to make development and management more efficient

3. interoperate through standards built on .NET and Web services

Yet the world of telephony has always been different. Legacy telephony vendors historically locked customers into buying the PBX, phones, and even applications (like voicemail, call center tools, or IVR) all from that one vendor. One of the great promises of IP telephony, and the standards around it like SIP, is that you can now separate these elements. You are free to choose the most appropriate PBX for each site, the right endpoints depending on each user's needs, and the best applications based on their own merits, knowing they can run across your VoIP environment. Some solutions even work with your legacy PBXs as well.

The concepts of shared infrastructure, interfaces and protocols drove much of Cisco's success in data networking. And this is the vision Cisco CallManager can now bring to the telephony side of operations. By deploying open telephony applications along with CallManager, VoIP teams – with members from both IT and telecom – can transform your telephony architecture from a world of siloed services to one of shared infrastructure and resources. At the same time, you gain the complete flexibility to migrate to VoIP site by site, on your own schedule, all without compromising user capabilities.

This paper highlights an open approach to IP telephony applications that, running alongside CallManager, has the power to change how your business communicates, inside and out. It is these "next-generation" open applications, and not the phones or the PBX, that will deliver the business value that converged networks promise. New functionality under the umbrella of Unified Communications allows users to work with voice messages as easily as email and to work remotely as easily as locally. Speech interfaces can save time and mask complexity. As a perfect complement to your Cisco VoIP rollout, these new end-user capabilities make your organization more productive, more responsive, and ultimately more competitive.

OPEN ARCHITECTURE – THE NORM IN THE DATA WORLD

The evolution of open systems, common operating environments, and reliable standards changed the way enterprises built and deployed business applications. A dramatic change from the times of proprietary mainframes and dedicated application development, we now take for granted the ability to deploy a range of best-of-breed applications across a rack of blade servers running multiple virtual operating systems, and make them appear to end-users as a holistic system.

The teams implementing Cisco IP-PBXs understand data networking and appreciate what it has done for business. These teams have an opportunity to now bring this strength into play on the telephony side. By deploying open IP telephony applications alongside CallManager, these teams can transform the organization's telephony architecture from a world of siloed services to one of open access to shared resources. The result is much higher value to users with lower overhead for IT. This is where CallManager's real value will become highly visible through the entire organization.

PROPRIETARY LEGACY TELEPHONY ARCHITECTURES

The architecture of past telephony solutions stands in sharp contrast to that of the data world. As you look across your company — if it is like most organizations — you'll find that the phones on users' desks are made by the company that manufactured the PBX. With few exceptions, this was the way telephony systems were deployed from the 1970's through the 1990's.

In many cases, the telephony applications for voicemail, automated attendants, and caller menus were also provided by this same vendor. However, some organizations, desiring to deploy best-in-class functionality for their telephony applications in a way that gave them flexibility to purchase systems from multiple vendors — and in a way that provided leverage of their internal expertise and infrastructure — separated the applications decision from the phone switch. The success of companies like Octel, Active Voice, and VMX were a clear indication of the value these "switch-independent" applications brought to customers. While an open telephony architecture brings the ability to buy phones and IP-PBXs independently, from any vendor, deploying enterprise-level voice applications that function seamlessly across all vendor systems is an even greater benefit when realized.

OPEN ARCHITECTURE FOR VOICE – SHARED INTERFACES AND INFRASTRUCTURE

Voice architectures are opening up, and VoIP teams have a chance to lead their organizations into the world of open IP telephony. Deploying Cisco CallManager is a great first step, but it is critical to get beyond delivering new phones and a new PBX for your enterprise to harvest the real gains of IP telephony.

Telephony architectures are opened when applications share both interfaces and infrastructure. Your workforce shouldn't have to use multiple interfaces to retrieve messages simply because those messages are of different "types." Your IT staff shouldn't have to enter and maintain the same user information in multiple databases, simply because discrete telephony applications need that information. Users are more productive when they have access to messaging functions from a common UI, instead of being forced to use a dedicated UI for each function. And with applications that leverage a common infrastructure, IT can get beyond the tremendous cumulative burden of routine maintenance. The benefits of shared interfaces and shared infrastructure deliver greater cost savings, but it is the applications that drive the greatest value in any IP telephony rollout.

VOICE APPLICATIONS DRIVE IP TELEPHONY BENEFITS

Initially, many organizations approach Voice over IP as a way to save money by bypassing toll charges for long distance calls or by eliminating redundant networks for voice and data. However, as those same organizations begin to upgrade data networking equipment and bandwidth in order to adequately carry voice calls, it becomes clear that these savings will take many years to pay for the project. So, the question turns to delivering the business value of VoIP.

The answer to that question lies not in the cost savings, but in the fundamental business benefits that open telephony architecture applications can provide. Giving a user a new phone, connected to a new IP-PBX, without giving the user new applications that streamline the way he or she works every day, changes nothing. But by delivering voice messages directly to users' mobile devices we can increase organizational responsiveness (and therefore customer satisfaction), and by finding users wherever they are using their preferred method of contact, we can avoid the productivity loss of phone tag, giving users more productive hours in every week. It is these business benefits that deliver on the ROI promise of VoIP, but how you choose to deploy open telephony architecture applications can impact the speed and degree of benefit your organization will realize.

ADOMO FOR CALLMANAGER – AN OPEN APPLICATIONS MODEL

Adomo offers a suite of IP telephony applications that brings an open architecture to a company's telephony environment. These applications share interfaces and infrastructure – which, as our data experience has taught us, increases user value while simultaneously reducing IT burdens. Instead of introducing new client interfaces, the Adomo applications embed into the common interfaces already open on the user's desktop and mobile devices. And instead of requiring their own infrastructure which must be managed, they leverage the one you already have in place.

Single Messaging Inbox – Less is More

With Adomo Voice Messaging, users see their voice messages in the email inbox they already have open on their desktops with Microsoft Outlook. The solution requires no client application or plug-in of its own. There is no separate account for users to check, no separate window to open, no additional steps to receive voice messages. Users can now see their voice messages anywhere they see their email inbox, including on wireless devices set up to sync with Microsoft Exchange. They can play the message directly on their PC or wireless device without having to dial in to any system. Remote workers no longer have to blindly dial in to a voicemail system simply to check whether they have a voice message, saving significant time and improving employee productivity. And users never again have to waste time wading sequentially through voice messages; they now see who each voice message is from and can prioritize their responses accordingly. They can also search for voice messages by caller name or by date, the same way they search for email messages. As with email messages, they can save their voice messages to folders and archive them for later use.

Adomo Voice Messaging is a complete departure from the old telephony paradigm. It aggregates two messaging channels – voicemail and email – into one, by simply delivering the voice message as a new message type within your existing messaging framework. Furthermore, Adomo requires no infrastructure of its own. For user data, a new voicemail services tab appears in Microsoft Active Directory – without requiring any schema changes – and taps into the user information you already store and manage there. A 100-office company that previously supported 101 directories – one for each of its separate voicemail systems and one global direc-

tory for email – can now eliminate 100 directories. With Adomo, a single global directory now supports both email and voicemail across the enterprise. Instead of message storage attached to each voicemail system, voice message files are simply saved in the existing Exchange message store. All the administration and maintenance activities the IT team already has underway to support the email messaging infrastructure now also supports voice messaging.

Integrated Speech Recognition Delivers Even More Value

With Adomo, speech applications such as name addressing, automated attendant, corporate directory, mobile access to contacts, and caller menu systems all run on the same appliance platform. There is no additional hardware required to support speech and no complex integration with your messaging system to tie them together. The savings build further when you take into account the fact that there is no need to maintain these separate systems with regular patches, upgrades, and backups. A fully integrated speech engine brings the power of voice to your applications, without any additional resources on your side.

Speech-enabled Automated Attendant and Caller Applications

For outside callers (which include your own workforce as well as customers and partners), having to use a telephone keypad to spell someone's name is a slow, error-prone process. With Adomo, callers have the option to simply speak a name or department and be quickly connected. The user information needed by this auto attendant application is the same user information you already store and manage in Active Directory. The auto attendant application can therefore be configured with a click – there are no separate databases to build and maintain and there is nothing to integrate or configure. Moves, adds, and changes, which would normally need to be done in multiple applications, are all accomplished with one change, using the same tools you use for user management, dramatically reducing system administration requirements.

Caller menu applications, for frequently accessed information like directions, contact information, office hours, etc., can be easily programmed for single digit access or speech-based selection. This significantly reduces the load on receptionists and administrators while providing a high level of customer satisfaction and preserving the ability to reach a human assistant at any time.

Speech-enabled Corporate Directory – Never look up another number

For employees, looking up the extension of another user in order to call them or to forward a voice message is a time-consuming process. Struggling to access a corporate electronic or paper directory is a thing of the past, which further drives improved employee productivity. With Adomo, users forward voice messages via voicemail to other users simply by saying their name, or via email utilizing speech-based message addressing access to their contacts and distribution lists. They can also select delivery options by simply speaking their selections.

Find Me / Follow Me – One Number Access to Employees

Most employees have a work phone number; many also carry a cell phone, and some have a pager number. In today's telecommuting environment, certain individuals may work out of a home office, either occasionally or on a daily basis. And many customer-facing positions or key management/technical roles may also benefit from off-hours access at home in critical situations. Employees have to keep track of these different numbers for their colleagues and guess at the best number to use when they need to reach someone. Customers and business partners suffer the same difficulty, compounded by the fact that employees may not want to share private mobile or home numbers. Adomo removes this burden and gives callers single number access. Based on your personal profile, the system "follows" you to your current active number and can be set to try other available numbers on behalf of the caller. The application, of course, uses the data already stored in Active Directory and Exchange, so users are never burdened with having to create and maintain lists of co-workers and other potential callers for whom they want the feature activated. Schedule and screening options give users control over who reaches them, on what numbers, and according to individual time-of-day and day-of-week rules.

Get Notified While Mobile and Handle Messages Quicker

In addition to seeing voicemails in their email inbox, users can select multiple notifications, including message waiting notification on their desktop phones and text message (SMS) alerts on their mobile phones. Unlike the traditional message waiting light, the SMS includes caller ID information and the name of the calling party if it is in your system, making prioritization easier. Making use of diverse interfaces to provide notification helps users ensure that a message doesn't sit undiscovered. Users are more effective in that they are alerted immediately to messages and can determine the sender with a glance.

For those highly mobile users carrying an email-capable Smartphone or wireless PDA, advanced capabilities go even farther. Since voicemail messages are now email messages in Exchange, the existing synchronization process delivers them straight to the user's device. Users see who each message is from and can play them directly without dialing in. If the message would best be handled by someone other than yourself, simply forward it via email.

THE RIGHT PLATFORM ARCHITECTURE

### Cleanest Integration with Microsoft Exchange and Active Directory

While other systems are built to run in standalone modes, and then integrate and synchronize on an ongoing basis with Exchange and Active Directory, Adomo Voice Messaging was designed from the ground up to work seamlessly in Microsoft environments. There is nothing to synchronize. Messages are stored directly in Exchange and user data is maintained in Active Directory. This eliminates the major integration tasks required of other systems and allows Adomo to deploy with no Active Directory schema changes or client software installation, which significantly reduces your IT department's administrative and overhead duties, secures the Exchange environment from outside disruptions and irreversible changes, and ensures rapid implementation processes.

Fastest Solution to Deploy for CallManager

The Adomo system comes configured to work seamlessly with Cisco CallManager. Combined with its pre-built integration with Exchange and Active Directory, as well as the dedicated single image software environment, the Adomo solution is up and running fast. Typical installation is three to four hours, compared to multiple days for most unified messaging products. This not only saves you money, but reduces the risk of problems caused by complex integration and configuration required by many vendors.

Switch-independent – VoIP or TDM technology, From Any Vendor

While you've made your choice to go with Cisco CallManager for your current VoIP project, there are several reasons why the flexibility to work with other IP-PBXs — or even older TDM-based phone systems — may still make sense. In the future, you may want to deploy small office solutions or very large PBXs for a consolidated site, using another SIP-compatible vendor. Or perhaps your company will acquire a firm with existing phone systems from another provider, which will not be replaced in the immediate future. Or, if like most large companies, you are looking at a multi-year rollout before all of your sites have moved to VoIP, you may be facing the difficult proposition of maintaining multiple voice messaging environments unless you standardize on a platform that can work across everything you have. The PBX-agnostic Adomo Voice Messaging system gives you the flexibility to handle all these situations with ease.
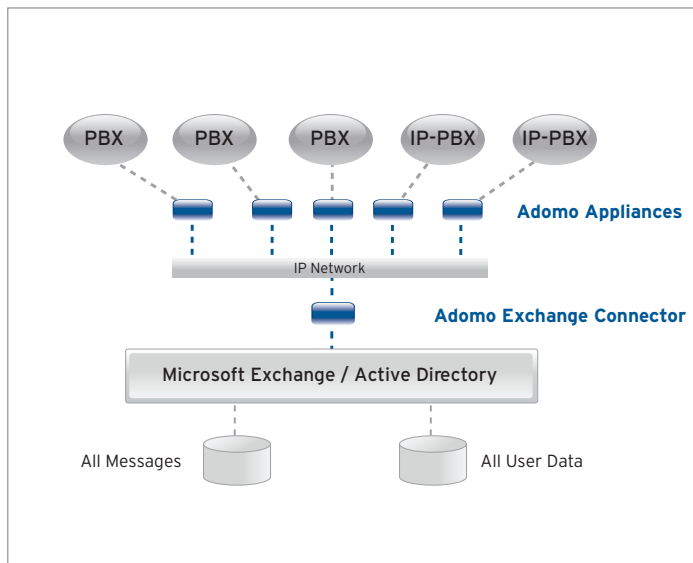
ADOMO VOICE MESSAGING ARCHITECTURE

Reduce Maintenance Further with Hardened Appliance Platform

Many of today's messaging and unified communications systems are built on PC-based servers. As a result, IT teams have to build these machines, installing a host of components such as operating systems, databases, application software, anti-virus software, and telephony and other hardware interface cards with their respective drivers. Then the IT team has to maintain these servers and worry about operating system service packs, anti-virus upgrades, new application software releases, and the like.

Adomo Voice Messaging, in contrast, runs on a hardened, stateless appliance with no independently changing software or hardware components. It operates in a dedicated hardware and software environment with a single software image. The appliance is installed and configured in hours, and is upgraded remotely with a single click via a controlled process. Since Adomo is not burdened with its own user database or message store, users are not "homed" to an appliance. Scaling to support more users is a simple matter of sliding in an additional appliance to increase session capacity, with no user or mailbox administration required. All of which provides you with the lowest overall total cost of ownership in the unified messaging environment.

High Availability and Redundant Configurations

Adomo Voice Messaging is pre-installed on a 2U rackmount appliance, which has datacenter-class hardware, RAID storage, and redundant power. With support for N+1 redundancy and clustering, there is a seamless transition to another node in the cluster in the unlikely event of an appliance failure, and no need to replicate entire systems as warm backups. Since users aren't homed on specific appliances, there is no need for any administrative intervention, and it is entirely transparent to the user. Furthermore, in cases where network or Exchange performance are degraded or disrupted, the appliance continues to operate as a fully functional system, using its local data cache of messages and users to provide the maximum in survivability and business continuity.

SUMMARY

VoIP teams implementing Cisco IP-PBXs have an opportunity to bring their strength into play on the telephony side. By deploying open IP telephony applications alongside CallManager, these teams can transform the organization's telephony architecture from a world of siloed services to one of open access to shared interfaces and infrastructure. The net result is greatly increased value for users and reduced overhead for IT. Adomo offers a suite of open telephony architecture applications that bring out the real value of CallManager that is highly visible throughout the entire organization.

LEARN MORE

To learn more about Adomo and our voice messaging and unified communications products, please visit us online at www.adomo.com, call us at 408-996-7086 or email demo@adomo.com

ABOUT ADOMO

Adomo, Inc. provides a new generation of voice messaging and unified communications solutions that enable organizations to more smoothly migrate to VoIP and wireless technologies. The company's open, hardened appliance platform gives customers freedom of choice in selecting the appropriate technology, vendor, and timing for their Voice over IP rollout. Deeply and seamlessly integrated with Microsoft Exchange and Active Directory, the Adomo solution eliminates the costs of maintaining separate servers, databases, and message stores.

With Adomo Voice Messaging, users have easy access to voice messages in their email inbox on their PC, or from any Microsoft Exchange compatible device or client. Adomo's enhanced speech recognition capability delivers a superior caller and user experience, while advanced caller applications such as Find Me/Follow Me increase organizational responsiveness.

Adomo is a privately held company, headquartered in Cupertino, California, and is backed by Menlo Ventures and Storm Ventures. For more information, please visit www.adomo.com or call (408) 996-7086.

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