Evolving to Converged Communication with Session Initiation Protocol (SIP)

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Section 1: Executive Summary

Organizations with multi-vendor, multi-application and widely distributed communications systems need a reliable way to integrate and optimize their network infrastructure. Session Initiation Protocol (SIP) supports converged communication applications by placing control of the communication across distributed networked entities and smoothly integrating the various system levels. SIP enables seamless data and voice convergence in multi-vendor environments with multiple applications across a wide range of industry sectors.

This white paper is designed to help business leaders understand the impact of SIP-based converged communication in Voice over IP (VoIP), Unified Communication and Customer Relationship Management (CRM) solutions. This paper also offers CIOs guidelines for migration to an enterprise SIP network, and details some new Converged Communication Solutions. SIP-enabled Avaya converged communication can help customers:

- Protect and consolidate their existing customer base by providing enhanced communication services that increase productivity.
- Reduce Total Cost of Ownership (TCO) as well as reduce operational costs


Section 2: Introduction

SIP is quickly evolving into the underlying technology for converged communication. Avaya SIP applications, in conjunction with SIP enterprise class IP infrastructures, deliver a suite of solutions that can significantly enhance the enterprise bottom line. Ease of programmability, high scalability, and ability to integrate with the World Wide Web provide powerful end-to-end solutions for enterprise environments.

Let’s take a closer look at various service points in the enterprise network where a SIP-based converged communication solution plays a role.

- Client Applications as SIP User Agents (UA) in the PC and IP phone
- Network applications realized by the SIP servers like proxy servers, redirect servers, Presence servers, IM servers, directories and rules engines
- Network applications realized in the feature servers as Back-to-Back UAs
- Network applications realized in specialized application servers and integrated with business logic
- Distributed network applications realized in collaboration with enterprise and Service Providers
**Section 3: The Evolving Communication Network Need**

The need for well-integrated communications falls into three distinct imperatives:

- **Business Imperatives**

  Today, companies are being challenged to simultaneously manage costs and grow revenue—to do more with less. Enhancing relationships with their customers and improving the productivity of their employees have become increasingly important as competitive differentiators. At the same time, today’s increased threat levels require business continuity planning as part of any business strategy.

- **User Imperatives**

  Deploying communications solutions that do not enhance user capabilities or solve their problems will limit their acceptance. Users will resist moving on to new applications or learning new application interfaces if there is no perceived value-added functionality, or no enhancement to productivity or ease of use. Solutions must satisfy user imperatives such as enabling virtual and mobile workers to work from anywhere, provide seamless access to any enterprise information, give a consistent user experience from any device, and help users manage their complex daily tasks more efficiently.

- **IT Imperatives**

  IT imperatives require that solutions be flexible enough to accommodate business models that will change in response to evolving economic and political conditions. Solutions should also allow for centralized configuration and administration, while supporting various distributed deployment configurations and providing end-to-end management capabilities. Another major concern here is investment protection. Since enterprises can only deploy new applications and systems if ROI can be justified, it is important that solutions seamlessly integrate with the existing infrastructure.

![Figure 1: Customer Imperatives in Converged Communications](image-url)
Together these imperatives form a set of requirements and guiding principles driving the definition of Avaya products and solutions.

**Section 4: Evolution to Converged Communication**

Avaya sees the evolution of IT infrastructures in three phases as shown in Figure 2. Enterprises will evolve portions of their infrastructures from one phase to the next according to their business needs and will often be in more than one of these phases at the same time.

In the *traditional* phase, enterprises have separate infrastructures for voice and data networks, with time division multiplexing (TDM) for voice and IP for data. In the *converged networks* phase, enterprises build out their IP networks to leverage a common infrastructure for both voice and data. This enhances the IP network to meet enterprise-class criteria: improving QoS and increasing the reliability of real-time, mission-critical business and communication applications.

As enterprises become more distributed and business performance needs dictate enhanced user capabilities, *converged communications* applications will be deployed. Converged communications leads to increased flexibility and cost efficiency due to modularization of components and applications. As solutions become more modular, their services can be deployed in a greater number of configurations and more easily integrated into multi-vendor environments. Avaya is taking the lead in modularization of its software and systems into an open communication architecture to help organizations smoothly transition to converged communications for a more adaptive enterprise.

![Figure 2: Evolution to Converged Communications](image)
Readers can refer to *The Evolution to Converged Communications* (at http://www1.avaya.com/enterprise/resourcelibrary/whitepapers/avayastrategy.html) for an overview of Avaya’s evolutionary vision.

**Section 5: SIP as an Enabler of Converged Communication**

For Avaya, SIP is a catalyst for the next phase of open communications over IP. SIP is an interoperable protocol in a multi-vendor environment that creates new possibilities for system flexibility in multi-service networks. Organizations can pick the best of breed from a variety of vendors to create a seamless converged communication network.

A user with multiple devices like a cell phone, desk phone, PC client and PDA can rely on SIP to seamlessly integrate these entities for increased efficiency and productivity. (see Figure 3). SIP is differentiated from similar communications protocols by its wide industry support, providing a practical means of multi-vendor integration at the highest level of the protocol stack—the application layer.

Although a growing number of enterprise leaders are considering an organization-wide migration to converged communications, the majority are testing the waters on an application-by-application basis. Initially, savings associated with business continuity, toll bypass and ease of administration for moves/adds/changes fueled VoIP deployment, but it is the increased flexibility in deploying new capabilities and application integration that will drive the migration to converged communications in enterprise environments.

Avaya converged business communication solutions embrace the principles of:

- Open, standards-compliant software and system architectures
- Solutions that are highly scalable and reliable
- Communication features transparent to the means of access
- Services rendered across multiple forms of access devices
- User productivity optimized to handle operational challenges
- Fork lift solutions are avoided to cut costs and service disruptions
- Enhanced service integration with Service Providers as opposed to siloed solutions
- Interoperability with multiple vendors creating end-to-end solutions
Avaya as an enterprise market leader has outlined steps to help our customers evolve toward converged communication to ease the burden of migration in an economically responsible manner. In this paper we also lay out the foundation on which Avaya SIP solutions can deliver demonstrated customer value.

**Section 6: Building SIP-Enabled Converged Communication from the Ground Up**

A decade ago, the World Wide Web used the Hypertext Transport Protocol (HTTP) to enable computer browsers to access any server-based web page within the Internet and do it in a transport network agnostic way. SIP uses the same design philosophy as HTTP to set the stage for a pervasive converged communication medium in our day-to-day business communication. SIP promises to have as significant an impact on communications solutions as the Web has had on information access. As enterprise networks move toward a distributed service-based model—a high-speed IP network with commodity services based on industry standards—users can take advantage of tools such as Avaya Communication Manager and Avaya Converged Communication Server to achieve business continuity, productivity and efficiency.

The communication needs for the adaptive enterprise encompass a large dynamic range, from a simple web transaction to more complex scenarios. In this environment, a variety of vendors can be included at various layers to create the adaptive enterprise. SIP responds to the need for a wide range of access and vendors by providing a method for effective communication between communicating peers. SIP helps facilitate openness, standards compliance, connectivity, simplicity, presence, distributed intelligence, scalability, and ease of application integration. Enterprise users in such a virtual, global converged communication network—using devices of their own choosing—can interact with various feature and application
servers to meet their disparate communication needs. Such effective communication gives rise to higher productivity and cuts the cost of operation by doing more with less.

At the heart of Avaya converged communication solutions is the Avaya Communication Architecture (see Figure 4). The Avaya Communication Architecture provides a consistent and modular framework for evolving enterprises toward converged communications. The Avaya Communication Architecture disaggregates enterprise communication into three layers:

- Unified access (e.g., communication-enabled portals)
- Business and communication applications
- Converged network infrastructure

For more on the Avaya Communication Architecture, see the *Avaya Communication Architecture* (at http://www1.avaya.com/enterprise/resourcelibrary/whitepapers/avayastrategy.html) white paper.

Figure 5 shows how SIP technology fits into the Avaya Communication Architecture. SIP-enabled solutions make use of a hierarchical Enterprise SIP Network that include value-added application and feature servers at its core. Avaya MultiVantage™ Communications Applications provide application and business logic to meet enterprise imperatives. At the Unified Access layer, SIP services such as presence enhance the delivery of real-time communications capabilities to users’ access devices.
Figure 5. How SIP technology fits within the Avaya Communication Architecture

The remainder of Section 6 outlines several scenarios that show how SIP-based converged communication solutions provide enterprises with value-added services to end-users and meet various customer imperatives.

**Section 6.1. Incorporating SIP entities within Enterprise Communication Architecture**

To incorporate SIP technology within Enterprise Communication Architecture, several building blocks are required:

- SIP User Agents (UA)
- SIP Proxy Servers
- Re-Direct Servers
- Location Servers
- Presence Servers
- Feature Servers, as Back-to-Back User Agents (B2BUA)

The Avaya converged communication portfolio is composed of these SIP elements compliant to Internet Engineering Task Force (IETF) Request For Comment (RFC) 3261. These basic distributed network elements are used as a foundation for various converged communication applications such as voice over IP (VoIP), instant messaging (IM), presence, real-time collaboration, unified communication, and customer relationship management (CRM) solutions.

Each enterprise needs to develop a thorough migration plan as part of their SIP deployment plan, one that can create a best of breed communication solution with reduced total cost of ownership, and without sacrificing existing communication capabilities. Within the Avaya converged communication architecture, most
of these SIP entities are software components, which can be very easily incorporated within existing network architecture as upgrades to an existing portfolio, to produce maximum economic gain with minimal service disruption. A detailed functional architecture definition can be found in *Enterprising with SIP—A Technology Overview*.

### Section 6.2. Building Enterprise Presence

SIP-enabled converged communication is about effective communication between communicating peers. One of the ways effective communication is achieved is by incorporating *Presence* as an inherent communication service within an enterprise. Presence is the notion that the current state of an entity, particularly its communications state, can be exposed and represented in a standardized, sharable way. Entities so represented need not be human or singular. For example, a device status or a user status might be captured as a Presence Status (e.g. Phone Status = “Off Hook” or User Status = “Online”). Presence for composite entities like groups or shared documents can be similarly represented.

Presence information can be used to infer a communicating peer’s ability and willingness to communicate. Starting with a simple definition of “Online/Offline” status, Presence Status has been extended to include other context information such as disposition (out-to-lunch, away-from-the-computer) and activity status (on the phone, idle, etc.). However, since users in an enterprise use various types of access devices (e.g., IP phones, PDAs, PCs, Cell phones, Soft phones, 802.11/Bluetooth-enabled devices), a user’s enterprise presence should indicate how he or she may be contacted. Avaya converged communication solutions are capable of providing enterprise-wide presence by incorporating a user’s multiple points of presence in a virtual network.

![Figure 6. Building enterprise Presence using SIP](image-url)
While a typical Buddy List provides information on a user’s PC, an Enterprise Buddy List can reflect the user’s multiple points of presence such as IP phones, PDAs, PCs, Cell phones, Soft phone, 802.11/Bluetooth-enabled devices, as shown in Figure 6. Enterprise Buddy Lists not only enable individual users to see each other’s presence within the Virtual Enterprise, but can also deliver new capabilities supporting higher levels of business continuity and productivity. Presence and Enterprise Buddy Lists can be used for “polite calling” in situations where, if a phone is busy (i.e. off hook), a user can send an Instant Message or email message to be polite. Presence information can be used to cut down network toll and voice message tag. A basic presence service can be used for effective usage of find me/follow me to an appropriate location and device where the user is present. IT staff hours can be reduced by making the presence system work in conjunction with an Enterprise Directory Server and end user’s privacy can be protected by controlling access to presence information, according to enterprise policies. In addition, users can control their availability by specifying what presence information gets exposed under different conditions (e.g., time of day, identity of caller, or level of activity).

Section 6.3. Building Reliable Distributed Enterprise Telephony
Avaya SIP-enabled solutions for telephony include Proxy Servers, Registrars, Re-Direct Servers, SIP Feature Servers as well as SIP Desktop Phones and SIP Gateways. An Avaya SIP-enabled Feature Server, realized as a Back-to-Back SIP User Agent (B2BUA), is capable of providing many telephony features in a SIP-enabled converged communication environment with utmost reliability. It is also capable of bringing in the SIP capabilities such as presence, Instant Messaging (IM), audio to IM or IM to audio features, without sacrificing traditional features and functionality. Telephony features are implemented using open standards so that features are transparent to the means of access.

Figure 7. SIP-enabled Enterprise Telephony Feature Server
Avaya SIP Desktop Phones, SIP Gateways and Avaya SIP Telephony Feature Servers work on the same SIP-enabled converged communication infrastructure. This creates a smooth migration to converged communication that provides significant investment protection today and enables system upgrades tomorrow. Distributed configurations support corporate headquarters, branch offices, remote workers, and mobile workers in a seamless, converged communication network. It provides business continuity by incorporating local survivability of the solution within the architecture in an economic fashion. Simple software upgrades to existing telephony products leverage enterprise investments. Such measures cut costs, create minimal service disruption, and provide better service integration with multiple vendors and Service Providers through interoperability.

Section 6.4. Adding Instant Messaging (IM) to Converged Communication Enabling Multimodality
Processes of communication are increasingly described from the aspect of multimodality. The term "mode" denotes a mechanism for the input and output of a user interface, such as speech or text. One can employ various modes independently or concurrently. Multimodal applications incorporate several modes simultaneously. Avaya SIP-enabled converged communication solutions enable users to interact with each other or with an application in a variety of ways: input with speech, keyboard, telephone keypad, mouse, and/or stylus, and output such as synthesized speech, audio, plain text, motion video, and/or graphics. Standards for multimodal applications are just being developed.

Instant Messaging (IM) is one of the most compelling modes of Real Time communication. Consumer IM solutions, using proprietary protocols, have been available for some time, but such systems suffer from security, privacy, reliability, and functionality gaps. Although there have been efforts to address these problems with small-scale Enterprise IM solutions, scalability and business continuity issues remain.

Figure 8. SIP-enabled enterprise Instant Messaging and Presence incorporated in a desktop application
Avaya Solutions, part of the Converged Communication Portfolio, enables the reuse of existing failover architecture and allows organizations to migrate to converged communications at their own pace. With Avaya Solutions, users can gain access to SIP Instant Messaging and presence capabilities instantly without the need to provision different name spaces and maintain solutions in silo. By integrating SIP-enabled IM to a business’s Soft Phone application as shown in Figure 8, IT expenses can be reduced and costly upfront investments can be avoided. A Soft Phone client application integrated with SIP-enabled IM creates a single console that can be used to access VoIP telephony features, IM, conferencing, presence, Enterprise Buddy Lists, application sharing and collaboration, access to voice message and notification. Using a single name space makes it possible for one user identity to be used for both voice and IM, increasing efficiency and reducing IT expenses. IM integration to a Soft Phone application enables multi-modal communication—users can switch from an IM conversation to a voice conversation at the touch of a button. Moreover, in a scenario in which both caller and called party have a phone and IM client, it is possible to redirect the phone call to IM and for both parties to use IM to communicate. This could be beneficial in situations where the called party is engaged in another call or it could be used as an alternative to TTY services for hearing impaired employees in an enterprise network.

Server-side scripts provide an effective solution for session management, event handling and synchronization among the various modes of a multimodal application. For example, a user could send an Instant Message to a specific party within a set of conference call participants to share a communication specific to that user, while staying connected to the conference call without disturbing the others. Or the user could vocalize a name, type in an address, or send a phone number from a wireless handset—all within the same session, form, and application context. The different modes may be supported on a single device or on separate devices working in tandem as shown in Figure 9.
Today one of the major problems confronting network users is interoperability: the ability of multi-vendor products and services to “talk” to one another. Typical solutions to this problem have been too narrow or too complex, or lacking in scalability, performance or an open architecture for low cost operation and easy upgrades. Avaya SIP-enabled converged communication solutions enable organizations to create a platform that does more business communication with less equipment. Communication products and services can co-exist in multi-vendor environments and networks can reuse existing solutions—reducing total capital expenses and optimizing network performance.

A SIP-based, open standards implementation enables inter-domain IM via an IM gateway that allows interworking with other popular public domain IM services, even those that are external to the enterprise. Additionally, SIP also enables the possibility of sending Instant Messages to next generation cell phones and Wi-Fi Devices via a Service Provider Gateway by acting as a common integration protocol.

Section 6.5. SIP Solutions Used to Cut Costs while Improving Employee Productivity

Converged communication is a key enabler for mobility applications. Next-generation wireless networks frequently select SIP as the session control standard, making it an important protocol for next-generation wireless services. Imagine striding through your office, out to your car and driving off, all the while continuing a seamless conversation on your wireless phone, delivered over your converged network. Alternatively, imagine a business traveler who travels from New York to Tokyo and uses the same cellular phone in New York within the virtual enterprise to run his or her day-to-day business while in Tokyo. This new level of virtual enterprise roaming provides a new plateau of mobility within the Avaya converged communication solution portfolio. It is a direct result of using SIP as a point of integration between Avaya and other industry leading vendor products to unleash the power of converged seamless mobility.

Though in-building wireless IP communication systems have been available for a while, Avaya, in conjunction with other industry leading vendors, is developing an office-based solution that will allow individuals to roam between wireless enterprise LANs and public wireless WANS. Such a solution operates on both cellular and re-uses enterprise Wi-Fi (IEEE 802.11b) WLAN networks as shown in Figure 10.

SIP-enabled Avaya converged communication solutions extends the power of SIP throughout the virtual enterprise by leveraging converged wireless infrastructure and a SIP/IEEE 802.11 Dual Mode wireless IP phone. This innovative phone provides comprehensive business communications in-building and outside the building in conjunction with the Avaya Communication Manager over Wi-Fi access points.
These converged wireless solutions can enable new cost savings, increase communications capabilities and deliver new efficiencies. Reduced network management expenses, lower usage charges and fewer required phones will help organizations trim costs. On-demand conference calling and speech access to applications such as email, calendars and corporate directories will enhance enterprise communications capabilities. And for users, seamless wireless access to business networks, applications and information—on or off the business campus—will bring unparalleled mobility and convenience.

Section 6.6. Rapid Deployment of New Services (Extending the Virtual Enterprise)
Initial efforts to develop SIP-enabled converged seamless mobility solutions might appear to be aimed mainly at wireless voice calls within wireless networks, to lower usage charges and require fewer phones. However, these efforts also serve as a stepping-stone towards next generation communication applications powered by SIP (see Figure 11).

Consider a business communication solution where SIP is the common interface providing integration between enterprise networks and Service Provider networks. Users, while roaming in a Service Provider network, can stay in touch with their virtual enterprise anywhere, anytime, any place.

- Users in such an environment can instantly receive enterprise voice message notifications while out of the office.
- Users, such as Doctors, who work across multiple locations, will not be required to carry yet another phone or a pager.
- Services support will improve because service management can locate their field technicians within a customer location very quickly and provide better service to their customers.
• Administrative assistants can locate their bosses using presence quickly to get attention to a matter that requires immediate action.

• SIP-enabled user devices can respond to a phone call by a short Instant Message that lets the caller know about the person’s availability.

SIP-enabled converged communication systems transform today’s communication systems and connect communicating entities at the right time and the right way, providing organizations with the tools to operate as they see fit. Such powerful integration enables rapid new service deployment in the areas of business communication providing business with better continuity and higher productivity than has been possible before.

**Section 6.7. Integrating User Control Using SIP while Reducing Cost**

SIP-based converged communication, along with World Wide Web integration, provides the user with multiple modes of communication that gives them more control of their day-to-day business. At the same time, it allows IT to lower operational costs by reducing the need for training, translation services, and isolated TTY service.

Following are examples of a few such scenarios that a SIP enabled Avaya Unified Communication Solution can accommodate (see Figure 12):

• **“Inline” Translation Services.** A SIP request, originating with an English-speaking user, might contain a Web Services request to translate a message into another language for a non-English speaking recipient.
• **Personalization at the User Interface level.** Different voice mail systems typically afford different interaction methods in their Telephony User Interface (TUI). SIP allows for personalization where users could identify their preferred TUI or language preference at the user level so TUI rendering is different from actual message storage.

• **Multimodal applications.** A SIP-enabled voice messaging system could provide a display-enhanced voice mail browsing application by delivering text or graphics-based menus to a multimodal end device. Such a multimodal voice messaging application could display:
  - Voice mail headers to the end user
  - Virtual Business Card with every voice call so that the user can have the caller’s contact information available
  - Playback, skip, rewind, pause, slowdown, speedup buttons using a Graphical User Interface in a screen phone, as opposed to using the telephone keypad to control the presentation of the voice messages

• **Speech to Text Translation.** In situations where the caller has only a phone and the called party has only a text terminal, a SIP-enabled translation service could provide text-to-speech and speech-to-text translation.

• **Web-based Interactive Voice Response (IVR).** Users may surf the Web as oppose to work their way through audio IVRs. For example such systems could be used from a hotel room to order services.

Enterprises can spend many staff hours in configuration, maintenance and user training for communication systems in multiple languages across multiple countries. Enterprise users can also spend valuable staff hours administering messaging systems, vacation greetings, message pickups and translation to foreign callers. Often special solutions are required to comply with laws providing support for hearing impaired employees. What is needed is a flexible, scalable, easily upgradeable architecture to support applications that overcome the differences of formats, user interfaces, devices, media types, protocols and industry standards. Users need full control over their options in a communication dialog to enable real human-to-human communication.
Section 6.8. Using SIP to Create Customer Loyalty

While technology continues to evolve rapidly, today’s economic climate forces businesses to justify every technology investment with solid return-on-investment projections. Every industry is looking for ways to increase revenue while minimizing costs and improving customer loyalty. According to a Gallup study, a single negative experience can decrease customer loyalty by 66% and will be remembered for up to 14 months. As such, every experience is an opportunity to enhance loyalty and therefore customer commitment.

Customers want to interact with businesses in any medium they choose, including Instant Messaging. Avaya has offered Internet chat applications for several years in contact center solutions with positive results, and IM is the next logical step. Customers can interact with a business using the same IM client that they use to chat with their friends. Businesses can maintain a virtual presence in the IM world. Instant Messaging can also increase contact center efficiency and be successfully deployed as an automated “chat bot,” using the same scripts that are used to drive Interactive Voice Response systems.

Consider an example of an outbound contact. A banking customer would most likely be very anxious to learn immediately about potential fraud associated with her credit card. Through the use of SIP and presence, the bank could see the customer’s presence at her SIP address, and identify the appropriate contact media. Then, either a message or a live contact can be launched to that customer, informing her of the bank’s concerns, which could then quickly be rectified.

As another example, an airline’s contact center could sense a customer’s presence when he powers up his mobile phone after he lands for a connecting flight. The airline could then proactively contact him at the airport and connect him to a contact center agent or a self—service application, which could tell him that his connecting flight is cancelled and offer him a choice of alternate travel arrangements.
Customer presence information is equally valuable in an inbound contact center. It can be used to match a customer with an agent who has the same mix of available media as the customer, thus providing a rich multimedia experience for the customer. Using SIP, modalities of such sessions can be changed anytime from IM to audio, initiated either by the customer or by the agent from the desktop. SIP and presence can be configured to match the media to the customer’s preference, thus increasing the customer’s satisfaction with the interaction and increasing the customer’s loyalty to the firm.

Section 7: Avaya SIP Leadership, Standard Compliance & Interoperability

Avaya is firmly committed to SIP. Avaya leads and sponsors many SIP events such as SIP 2002, SIP 2003 and upcoming SIP 2004 events. These events promote incorporation of SIP as a multi-vendor open protocol within various industry sectors as a key enabler of converged communication. These events are the largest international gatherings exclusively dedicated to SIP. The most eminent specialists in the technology were invited to discuss significant advances in the domain of SIP-enabled converged communication. Avaya will continue its leadership to promote open standards and industry-wide breakthroughs to move ahead in the space of SIP-enabled converged communication.

Avaya has been an active contributor to Internet Engineering Task Force’s (IETF) SIP, SIPPING and SIMPLE Work Groups since the inception of open standards work advancing global standards. Compliance to IETF standards is vital for a true multi-vendor solution. Avaya is also a key member of the SIP Forum and various other SIP initiatives within the industry. Avaya is a regular participant in SIP Interoperability events such as SIPiT to promote multi-vendor interoperability as a primary element of SIP-enabled converged communication.

Section 8: Conclusion

Because enterprise communication systems are evolving quickly, CIOs and IT Managers need to anticipate future technology and have a clear evolution plan. Any solution worthy of investment has to be adaptable and forward thinking. Integration of voice with multiple media along with presence-based applications should be able to take advantage of existing infrastructures to provide a cost-effective solution. Traditional, IP, and SIP-based solutions must be able to provide feature transparency and support for mobility within an enterprise solution between wireless networks—in-building and out-of-building.

SIP enables seamless convergence of communication and ease of end-to-end service integration based on open technologies. Although many CIOs are eager to adopt SIP-based converged communication today, they see their legacy communication systems as a roadblock to the cost savings and enhanced applications that converged communication systems would bring. The Avaya converged communication architecture, powered by SIP technology, provides innovative solutions so that customers can derive business value—today.
Avaya Converged Communications is based on modular enterprise communications applications that use SIP as an integration protocol dictated by customer imperatives and the principal of investment protection. Such solutions will avoid forklift replacement of the existing communication infrastructure. Avaya’s three phases of evolution to converged communication lays out a clear migration path from one phase to the next using a modular software architecture and offering upgrades for existing solutions. Avaya advises enterprise leaders to add VoIP infrastructures to their enterprise networks today and incorporate SIP servers as software upgrades. CIOs and IT Managers should add converged communication applications on top of a SIP-enabled infrastructure as applications. Such migration paths allow them to protect their investment today and to transition to SIP-enabled converged communication with the least service disruption.

The Avaya SIP-enabled Converged Communication portfolio provides a clear option to migrate from one phase to the next at a pace that fits unique enterprise needs, without sacrificing functionality, scalability or reliability. Avaya SIP-enabled Converged Communication can be readily integrated to deliver value add solutions to an enterprise today.

Section 9: References

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# About Avaya

Avaya enables businesses to achieve superior results by designing, building and managing their communications networks. Over one million businesses worldwide, including more than 90 percent of the FORTUNE 500®, rely on Avaya solutions and services to enhance value, improve productivity and gain competitive advantage.

Focused on enterprises large to small, Avaya is a world leader in secure and reliable IP telephony systems, communications software applications and full life-cycle services. Driving the convergence of voice and data communications with business applications — and distinguished by comprehensive worldwide services — Avaya helps customers leverage existing and new networks to unlock value and enhance business performance.