

Cisco Business Voice Services

Now, more than ever, businesses are controlling their budgets. They continue to look for new applications that take advantage of the Internet because these applications increase employee productivity and reduce costs. This scenario creates a powerful draw for outsourcing. Instead of investing in capital equipment, bandwidth, staffing, and in-house operations, enterprises purchase managed services from service providers, and focus on their own core activities.

At the same time, service providers are working to make their value propositions more compelling to businesses, while controlling their own capital and operational costs. With declining margins in long-distance transport, service providers are turning their attention to the managed services market for business customers, as a source of high value opportunity, enabling increased margins and revenue growth. Telephony and voice applications, fundamental for all enterprise customers, can be a powerful managed-service offering for service providers looking to find new customers and extend their relationships with their customer base. Voice over IP (VoIP) has come of age, and it promises business savings while delivering new and increased revenue streams to service providers.

The Cisco[®] Business Voice Solution enables service providers to take advantage of a common framework to deploy a portfolio of managed voice services. They can target these services at a variety of businesses: small and home offices, small and medium businesses (SMBs), and large enterprises. This solution lets service providers take advantage of new revenue opportunities created by:

- The strong enterprise momentum for voice and data;
- Network convergence—which is creating demand for managed end-to-end converged network services;
- Growing enterprise trends towards outsourcing network services
- Operational management of converged voice and data networks

The services enabled by the Cisco Business Voice Solution includes business phone service, site-to-site voice service, public-switched-telephone-network (PSTN) access, unified messaging and a framework for delivering additional enhanced IP services. This overview describes the market opportunity for business voice services, the Cisco Business Voice Solution portfolio, the business voice architecture, and the benefits to service providers when they deploy the Cisco Business Voice Solution.



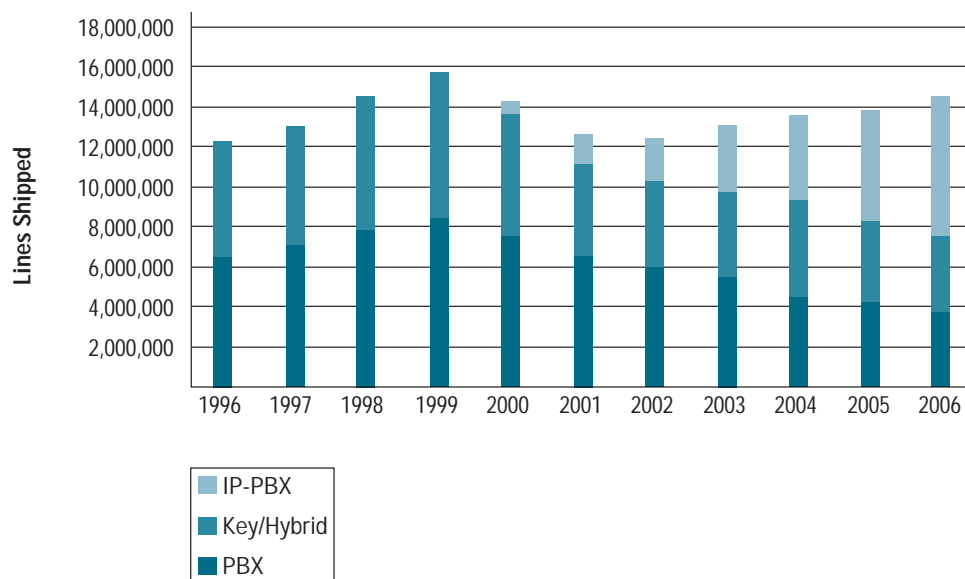
Market Opportunity

All businesses need voice services, but new voice services, based on VoIP technologies are gaining importance. The opportunity for service providers offering managed voice services is great and growing for numerous reasons:

- Cost savings to customers
- Higher employee productivity
- Flexible voice services and solutions
- Better return on investment (ROI) on new, converged network investments
- Improved margins

Enterprises in all market sectors (health, manufacturing, government, finance, and education) are accelerating deployment of converged networks. The opportunity for all IP Telephony (IPT) is huge—and growing. Cisco is the enterprise IP Telephony market share leader, holding 54 percent of the overall world market (Synergy, April 2003). Cisco has shipped more than 2 million IP phones and 1.2 million unified messaging end-user licenses. More than 6500 enterprises are Cisco IP Telephony customers, with businesses that have 5 to 50,000 phones. Also, Cisco customers have deployed more than 12 million VoIP gateway ports for enterprise toll bypass and carrier interconnect. Service providers sell between 30 and 35 percent of the private branch exchanges (PBXs) sold in Europe and the United States (Dataquest, MZA Ltd.). Typically, more than 80 percent of the PBXs sold by service providers are sold with managed services attached. Figure 1 shows the growth of IP PBXs, along with the decline of traditional PBXs. New IP PBXs are rapidly outpacing traditional PBX deployments. As enterprises accelerate their deployment of converged networks, their ROI is even better when they replace their end-of-life PBXs with new IP PBXs.

Figure 1
The Worldwide Enterprise Communications Market (Phillips Infotech, 2002)





The traditional PBX market continues to decline, while the IP PBX market represents a high growth segment. InfoTech includes many smaller key system vendors in the *Key/Hybrid* category as seen in the WW Enterprise Communications Market graph. Market research firms other than InfoTech have also confirmed that the traditional PBX market has declined in each of the past two years, while the IP PBX market continues to show strong growth. For example, in May 2002, Synergy reported that the enterprise IP telephony market in Q1 '02 grew 37 percent when compared to the same period in the previous year, as voice equipment continues to migrate to newer, packet-based technologies.

Why are IP PBXs growing so rapidly? Research indicates that businesses are interested in deploying converged networks. IP PBXs save on infrastructure and administrative operational costs as well as toll charges for intra-enterprise voice traffic. IP PBX deployments are being driven primarily by the business cycle, not the technology cycle, and are the beginning of profitable VoIP services for service providers that want to deliver VoIP services to businesses.

Figure 2 illustrates the growing opportunity, not just for IP voice services, but also for service providers offering multiservice VPNs that include voice services. The increase in IP voice network demand will be driven by increased IP telephony traffic from businesses; the increase in home workers, expected to exceed 30 million by 2004 (IDC); the growth of remote sites; and the increase in handheld, multimodal endpoints. Service provider revenue will grow as VoIP demand grows, in one of the fastest growing and most sustainable segments of the telecommunications market. Toll bypass and cost savings attract businesses, but security needs and the promise of new productivity-enhancing IP services, without large initial capitol investments, are key for managed voice services. Service provider success in this market will be driven by the ability to offer voice services, in addition to data.

Figure 2
Worldwide Multiservice VPN Service Revenues (IDC)

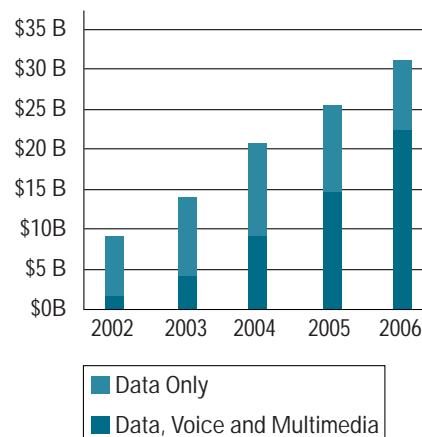
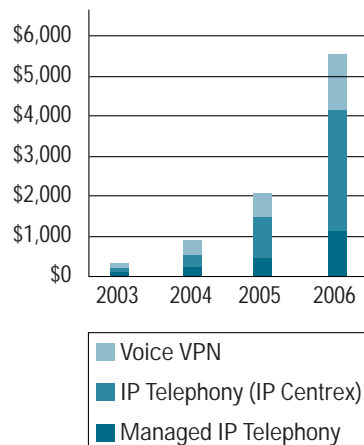




Figure 3 illustrates the size of opportunity for service providers. In the United States and Europe alone, the total available market (TAM) for managed voice services, through 2006, is \$11 billion. Managed IP telephony services are a \$2.5 billion cumulative opportunity. Services that generate those levels of revenue include setup and support, basic services, on-net calls, off-net calls, voice mail, and additional call features. Hosted IP telephony (IP Centrex) is forecasted to accelerate later, as service providers broaden their focus on SMBs. Although it is thought of as a distinct market today, voice VPN services will evolve as a component of managed voice services.

Figure 3
Cisco BVS Revenue Opportunity (United States and Europe) (Phillips Infotech, 2002)



How interested are businesses? Cisco interviewed 500 IT decision makers between January and February 2002, to learn more about enterprise plans for managed services, including IP services adoption, managed service usage, application plans, and service provider competitiveness. The sample included manufacturing, government, retail, and financial service firms across Europe, North America, and Latin America. Aside from discovering that all these firms were interested in adopting managed IP services, the opportunity for managed voice services will be significant, primarily because of the cost savings they expect.

Expected cost savings and functionality improvements are reasons for these plans, and the respondents plan to use IP products and services to support electronic solutions, especially their strong potential for out-tasking IP services related to workforce optimization and corporate communications electronic solutions.

Figure 4 shows Cisco's current market research about enterprise outsourcing to service providers: IP telephony is an important component of overall outsourcing plans for enterprises. Further, this market research showed important IP telephony out-tasking drivers:

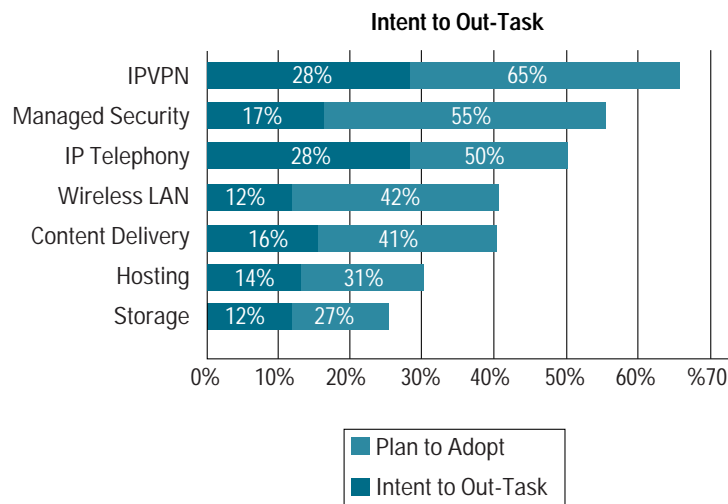
- Lower operating expenses (OpEx) by not hiring specialized resources
- Make telecom costs predictable and scalable with monthly per-user fee
- Simplify and reduce risk in migration to IP telephony



When deployed, enterprises working with service providers to receive business voice services realize significant benefits through out-tasking:

- Allows enterprises to focus on their core business while taking advantage of service provider services to transport voice traffic
- Lowers total cost of ownership (TCO) when compared to owned solutions (saves floor space, specialist, technical obsolescence, training costs)
- Enables companies to pay for only what they need as they grow, with minimal capital outlay
- Offers monthly fees versus initial investments
- Supports migration of one phone at a time to IP telephony
- Enables SMB key switch or PBX replacement with Cisco CallManager Express
- Supports converged customer relationship management (CRM), enterprise resources planning (ERP), messaging, and collaboration applications
- Reduces support expenses for teleworkers

Figure 4
Business Interest in Outsourcing Managed Services (Cisco IBSG's *SP-Enterprise Connect Study*, 2002)



Opportunity by Service Provider Type

Depending upon the service provider's business model, there are different approaches to managed services for voice: traditional IP data service providers, traditional wholesale VoIP carriers, and incumbent voice carriers.

Traditional IP Data Service Provider

This service provider is overlaying new voice and video services on top of an existing data service for its end customers. Multiprotocol Label Switching (MPLS) VPNs are optional, but recommended and most likely the case. The service provider may elect to build out an off-net PSTN interconnection infrastructure based on Cisco Voice Infrastructure and Applications (VIA). Another option would be to partner with a wholesale VoIP carrier that has a VoIP infrastructure in place, rather than building one's own.



Traditional Wholesale VoIP Carriers

These service providers are expanding their revenue sources to include business customers primarily attracted to the value of PSTN toll-bypass interconnections. In this model, service providers may elect to build an MPLS VPN core to provide data services, but probably will not. They will function either as simple, off-net interconnection partners to the VoIP, video, and data VPN providers, or as the actual VoIP and IP video VPN provider that delivers services over a clear Internet IP connection into the SMB or enterprise, possibly through a separate Internet service provider (ISP).

Incumbent Voice Carriers

Incumbent voice carriers, including independent local exchange carriers (ILECs), inter-exchange carriers (IXCs), and post, telephone, and telegraph providers (PTTs), have long been a primary channel for traditional PBX sales. They typically have a high attach rate for maintenance and managed services. With the market shift to IP telephony, these carriers are shifting “Day 2” managed services business from declining time-division multiplexing (TDM) to the higher-growth IP PBX market. To provide end-to-end IP telephony IP services, these carriers are launching managed networks services such as voice VPN.

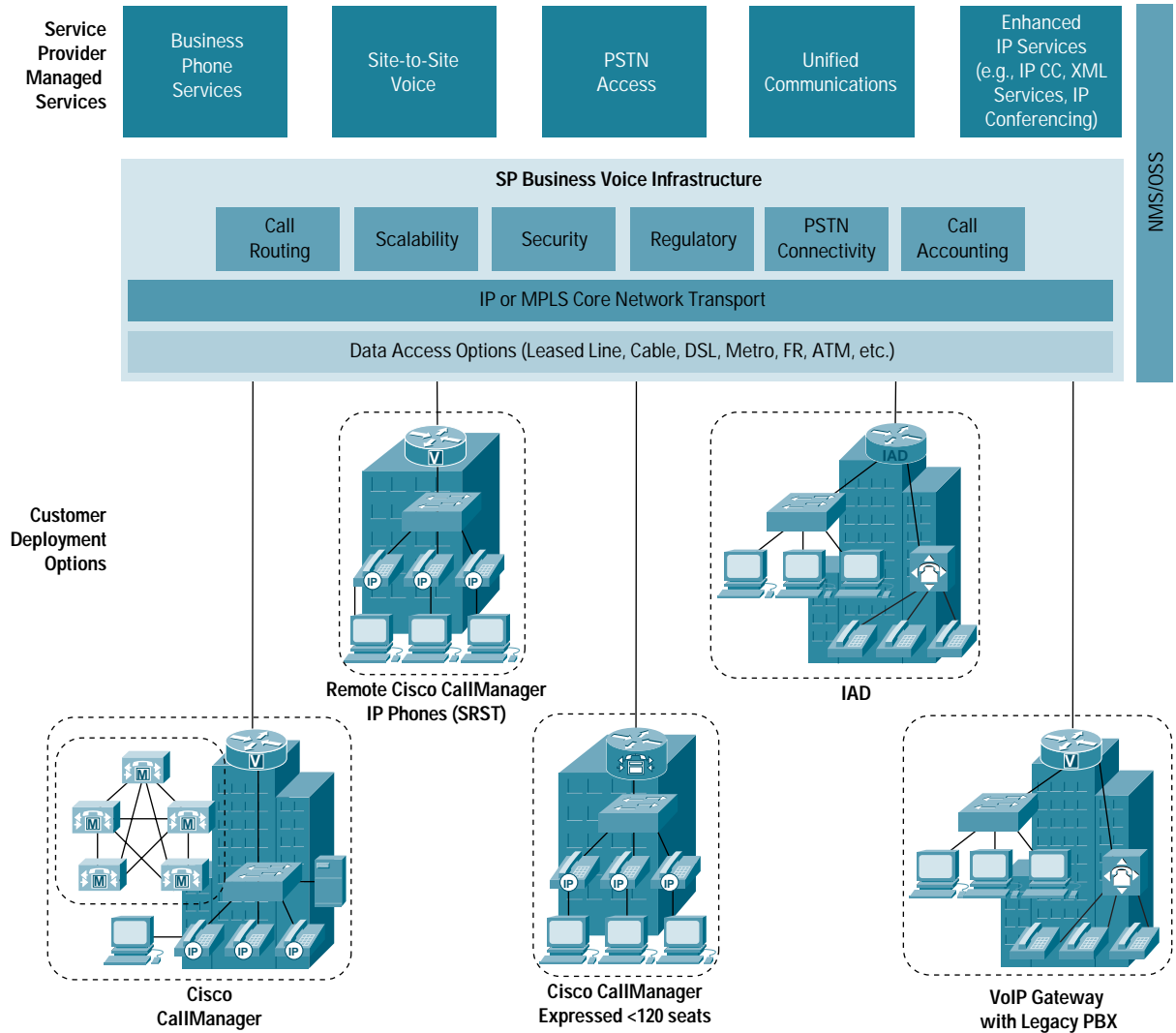
The Cisco Business Voice Solution

The Cisco Business Voice Solution enables service providers to profit from the explosive growth in IP telephony by delivering feature-rich services to all their business customers, from small and medium-sized businesses (SMBs) to large enterprises. These services connect service providers and their customers, effectively extending Cisco AVVID (Architecture for Voice, Video and Integrated Data) IP Communications by providing end customers with the option to out-task their IP telephony networks as well as the operational management of their IP Telephony equipment.

The Cisco Business Voice Solution is built on a scalable, flexible architecture using proven Cisco products and technology. The architecture provides a framework that supports operations and mandatory regulatory voice features (accounting and billing for all voice calls, provisioning, lawful interception, and local number portability). The Cisco Business Voice Solution supports traditional enterprise TDM or hybrid TMD IP PBXs as well as IP PBXs such as Cisco CallManager and Cisco CallManager Express. Figure 5 shows the expansive portfolio of business voice services offered by the Cisco Business Voice Solution.



Figure 5
Expansive Portfolio of Business Voice Services



Cisco Business Voice Solution Portfolio

Cisco has developed a framework to help service providers deploy a series of high-revenue managed business voice services for SMBs and large enterprise markets. Within that framework, standard Cisco Business Voice Solution services include:

- Business phone services
- Site-to-site voice
- PSTN access
- Unified communications



That framework also encompasses several enhanced services:

- IP conferencing
- Extensible Markup Language (XML) Application Services

Business Phone Services

Business phone services are the subscriber and group calling services that are provided to businesses depending on their needs. The service includes their basic dial-tone and direct-inward-dialing (DID) assignment. A company that requires a full-featured IP PBX would use a Cisco Call Manager solution. A small business could solve its needs through a Cisco CallManager Express Services solution, providing a “keyswitch-like” solution. Alternatively, a customer could keep using its existing PBX with a Cisco voice gateway, thereby enabling it to migrate to IP telephony slowly over time.

Site-to-Site Voice

Site-to-site voice is a service that enables an enterprise to call from one of its sites to another site over the service provider’s VoIP infrastructure, thus further reducing long-distance costs. Furthermore, the service enables the enterprise to maintain its own private dial plan, including support for abbreviated extension dialing.

PSTN Access

The Cisco Managed Business Voice Solution provides PSTN connectivity for both Cisco CallManager and Cisco CallManager Express Services that can be enabled locally from a customer premises VoIP gateway or centrally with a service provider’s network. Central PSTN access provides economies of scale and reduces cost for both the service provider and end user.

Unified Communications

Cisco Unified Messaging gives users the ability to access and immediately respond to voice, fax, find me/follow me, and e-mail messages from any phone or PC with the enterprise, reducing the time associated with accessing multiple devices. Unified messaging on a converged network supports a universal inbox that can contain all three types of messages.

Enhanced Services

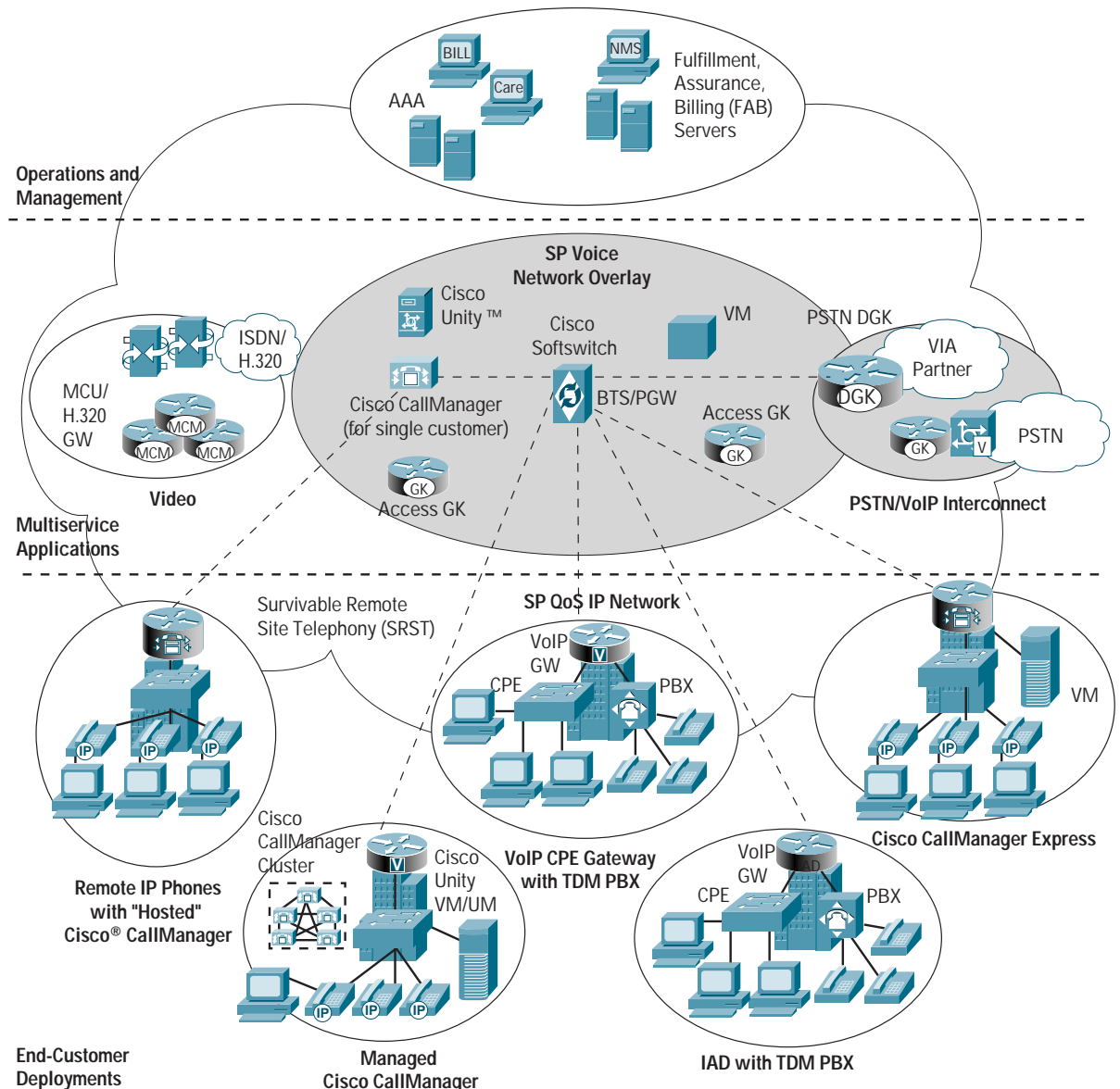
The service provider can offer any combination of business voice services to meet the needs of customers that range from single-office small businesses to highly distributed enterprises. The flexibility of the Cisco SP Business Voice Solution architecture enables service providers to capitalize on emerging revenue opportunities from managing enhanced IP applications. These include custom IP phone XML applications and, in the future, IP customer contact services, IP conferencing, and others. Service providers can take advantage of the XML programming language to let organizations easily download critical information and customized applications to a user’s phone. Service providers can deliver customized, revenue-generating, premium XML applications to their business voice services customer base.



The Cisco Business Voice Solution Architecture

Figure 6 shows the Cisco Business Voice Solution architecture. The Cisco Business Voice Solution consists of a tested and validated combination of the market-leading Cisco AVVID IP telephony products, service provider carrier-class packet voice products, and key Cisco Service Provider Solutions Ecosystem Program partners. These products and partners unite within a single architectural framework that enables the delivery of managed data, voice, and video services to multiple SMBs or large enterprise customers. The solution architecture consists of three major functional areas: end-customer deployments, multiservice applications, and operations and management, all operating on either an IP or MPLS core network.

Figure 6
The Cisco Service Provider Business Voice Architecture





To aid in the adoption of IP Communications, the Cisco Business Voice solution provides a phased migration path. As a first step, the service provider may move the TDM trunk lines from a customer's legacy PBX to a Cisco voice gateway, and provide voice transit service over an IP core. Later, whether for legacy PBX replacement or "greenfield" installations, when the customer is ready to implement an IP Communications infrastructure, the service provider has the option of deploying Cisco CallManager or CallManager Express, depending upon the size and needs of the customer.

Overlaying on top of either an MPLS or "IP in the clear", quality-of-service (QoS)-enabled core network, the multiservice application layer of the Cisco Business Voice Solution provides call routing, transit, and unified communications for the service provider. A Cisco softswitch provides both on-net (intra-enterprise) and off-net (PSTN) call routing support. For off-net traffic, CAS, PRI and SS7 signaling types are supported on T1, E1, and T3 connections for global PSTN connectivity. The service provider can offer voicemail and messaging either as a managed customer-premises solution or a network-based solution

The Operations and Management function of the Cisco Business Voice Solution enables the service provider to provision, monitor, maintain, and troubleshoot voice applications for its enterprise and SMB customers, taking advantage of tools and applications from Cisco Systems® and members of the Cisco Service Provider Solutions Ecosystem Partner Program. A comprehensive, off-the-shelf network management portfolio provides service fulfillment, assurance, billing, and AAA security services.

The value proposition of top service providers around the world includes high QoS metrics guaranteed by service-level agreements (SLAs), security of the network and its traffic, and overall network availability and fault tolerance. The ability to deliver this high level of quality must be engineered into both the products and the network architecture as a whole. The Cisco Business Voice Solution delivers network and service reliability through component and network redundancy and security, QoS, and simplified manageability.

Make Cisco Your IP Telephony Partner

The Cisco Business Voice Solution brings tremendous benefits to service providers, as well as their customers. Following are just some of the benefits that service providers realize when deploying the Cisco Business Voice Solution:

- Takes advantage of outsourcing models for enterprises: bundle opportunity, expand managed services portfolio and reduce churn
- Allows enterprises to keep their traditional PBX—meaning minimum investment—while introducing new IP PBX technology
- Delivers an integrated data-and-voice solution, driving broadband access and enabling PBX or key systems replacement for SMBs
- Integrates traditional IP VPN services inside the VoIP network
- Supports teleworkers with remote access to VPN and enterprise mobility
- Drives additional revenue

As the leader in IP telephony, Cisco offers a complete, end-to-end solution that enables service providers to deploy business voice services profitably. Cisco offers service providers the following advantages:

- *Market leadership in highly scalable, carrier-class MPLS networking*—Cisco is the world's leading supplier of MPLS VPN networking solutions to service providers.
- *Technology leadership*—Cisco originated MPLS VPN solutions and remains one of the leaders in their development.
- *Commitment to managed services*—Cisco has gained invaluable experience and expertise by offering IP telephony and converged services to enterprise customers. Now Cisco is taking advantage of its unique knowledge base to create new revenue opportunities for its service provider customers.

- *Ready access to skilled resources*—Cisco's extensive sales and support staff and its reseller channel for converged voice and data solutions give service providers access to an unparalleled skilled resource base for accelerated market penetration. Cisco IP Telephony reseller partners can help service providers extend their sales reach, and also support the installation and configuration of the Cisco Business Voice Solution.
- *Comprehensive product portfolio*—Service providers that choose Cisco can work with a single source to obtain all necessary enterprise and central, office-based managed voice services components.
- *Proven solution*—Cisco has validated the functionality and performance of the business voice service with multiple service provider customers—not just in the lab.

If you want to find out more about deploying voice services, visit <http://www.cisco.com/go/telephony>



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