

CISCO HELPS CBEYOND DELIVER CONVERGED SERVICES TO LOCAL SMALL-BUSINESS CUSTOMERS

CHALLENGE

Cbeyond Communications, based in Atlanta, Georgia, and serving customers in Atlanta; Denver, Colorado; and the Texas cities Houston and Dallas, operates the world's first local phone network powered exclusively by the Internet.

The company's network uses Internet Protocol (IP) architecture and an end-to-end Cisco® network alone.

In 2000, Cbeyond decided to pursue a largely neglected market: small businesses with fewer than 25 phone lines. The company wanted to give these small businesses the same communication tools available to enterprises, but at prices small businesses could actually afford and that Cbeyond could deliver profitably. To meet this objective, Cbeyond leaders realized they would need to harness the efficiencies of a pure IP and softswitch-based network. In addition, the company wanted to enlist the support of a single supplier to provide the end-to-end solution to make its vision a reality.

BUSINESS PROPOSAL

In April 2000, Cbeyond formalized its business plan proposal to deliver an integrated package of carrier-grade telephony services, high-speed Internet access, and Internet-based applications to the underserved small-business market—at rates significantly lower than its customers would typically pay for voice services.

The company planned to provide voice over IP (VoIP) services using next-generation, softswitch network technology instead of older time-division multiplexing (TDM) because the dramatic cost savings would allow Cbeyond to deliver a cost-effective managed services offering to smaller businesses. The low-cost solution would allow Cbeyond to address a segment of the market that had been historically both overlooked and cost prohibitive to enter: the small business with fewer than 25 phone lines.

Cbeyond's analysis of capital and operating expenses indicated that a TDM-based solution would cost millions of dollars more to deploy per market than an IP-based solution. Because of the inherent efficiencies of IP—including compression, dynamic bandwidth allocation, and silence compression—and the centralized architecture afforded by a softswitch, Cbeyond would save on collocation and power consumption and benefit from lower initial capital investment.

Cbeyond knew it would be competing with other local telephone companies, including incumbents. The company had to be fully peered with the incumbent local exchange carrier (ILEC) and offer target customers all the calling features small businesses expected in a local calling environment, such as call waiting, call forwarding, call hold, and 911 emergency calling. Cbeyond's goal was to change its customers' experience, not their behavior. The company wanted to provide a solution where the small-business customer would not require any special phones and could still use their existing equipment.

Cisco Solution

After researching technologies and potential vendor partners, Cbeyond found that Cisco Systems® was the only vendor that could deliver a high-quality, cost-effective, end-to-end solution. The Cisco Broadband Local Integrated Services Solution (BLISS) framework could give them the network foundation, call-control, and application intelligence to deliver integrated voice, data, and video services over a single connection for small and medium-sized businesses. With the Cisco BLISS framework, Cbeyond could support metro Ethernet, DSL, cable, and T1/E1 access.

Implementing Cisco BLISS for T1/E1 let Cbeyond offer the services that small businesses needed:

- Voice services
 - Fully-featured local services
 - Long-distance services
 - Toll-free service
 - Voice mail
 - Conference calling
 - Calling card services
 - Accounting codes
 - Operator service and directory assistance
 - 911
- Data Services
 - High-speed Internet access
 - E-mail
 - Web hosting
 - Domain services
 - Virtual private networks (VPNs)
 - Network configuration
 - IP addresses
 - Spam filtering
- Online account management with flow-through change functionality
- Access to local- or network-based feature servers for additional services
- Extensive operations support
 - Billing
 - Provisioning
 - Fault reporting
 - Security
 - Configuration

With its Cisco BLISS implementation, Cbeyond is experiencing the following benefits:

- Flexible and scalable integrated services over any access method through a single connection and network, using a single protocol
- Fully integrated voice and data applications over the same access link and packet core
- Ability to offer self-provisioning and self-configuring services to customers who want these services
- Ease of adding new features such as unified messaging, conferencing, or accounting codes
- The simplicity of having a single bill, from a single vendor, at lower prices than the competition could offer

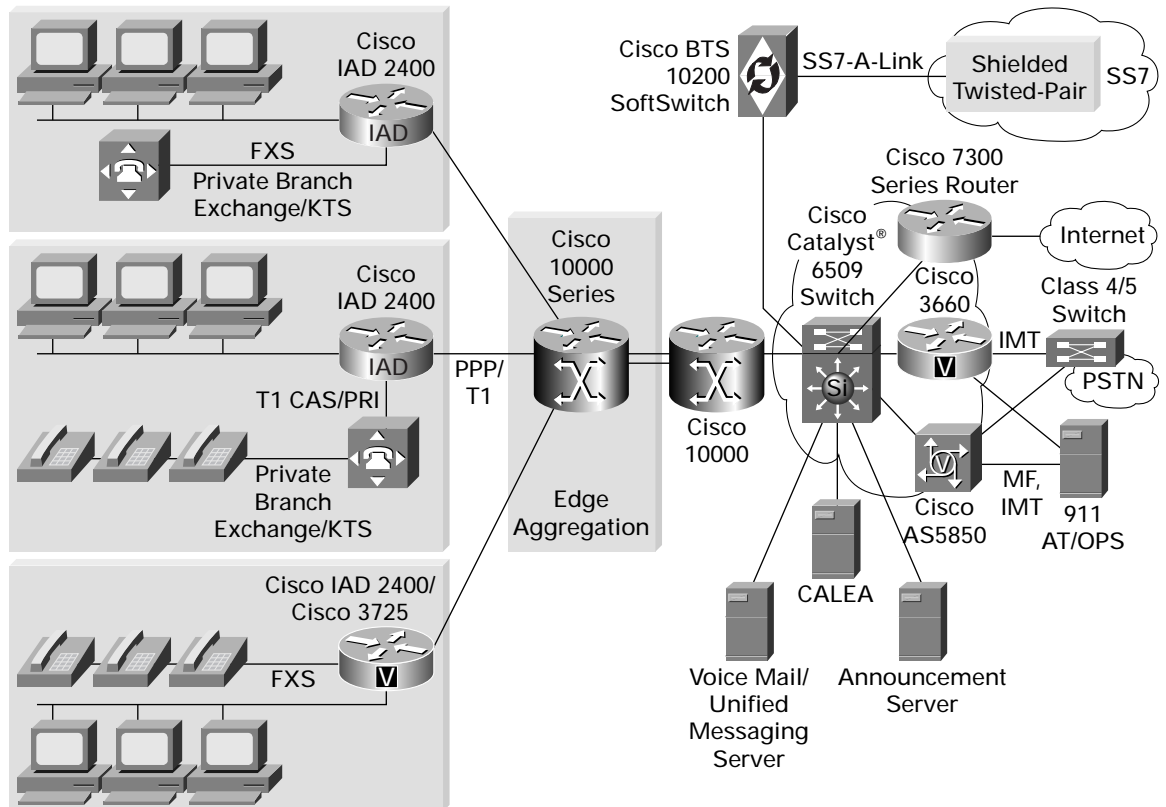
Cbeyond's customers also benefit from Cisco BLISS:

- Selectable customized local area signaling service (CLASS) features
- Dedicated Internet access
- Advance voice service offerings such as hunt groups and Centrex-like features
- Advance data service offerings such as secure remote access and data VPN
- A single bill for all services from one provider
- Flexible, flow-through account management through a Web-enabled tool

CBEYOND ARCHITECTURAL OVERVIEW

Figure 1 illustrates the Cbeyond architecture based on Cisco BLISS. Several components from Cisco are central to this architecture, but the overall system is flexible enough to integrate specialized components from third-party vendors.

Figure 1
The BLISS Architecture for Cbeyond



The customer premises equipment (CPE) layer of the Cbeyond architecture contains the Cisco 2400 Series Integrated Access Device (IAD). Cisco IADs on the customer premises deliver network and telephony phone services, integrating data and toll-quality analog or digital voice services, plus VoIP, quality-of-service (QoS) tools, multiple call-control protocols, diverse coders-decoders (codecs), IP routing, and security features.

The Cisco 10000 Series Router is responsible for edge aggregation. A T1 line connects the customer premise IADs to the router, which can connect to additional aggregation devices or to a switching device, depending upon the size of, or demand for, the aggregation layer.

The centerpiece of the solution is the Cisco BTS 10200 Softswitch, controlling intelligence throughout the network. The Cisco BTS 10200 Softswitch provides call-control intelligence to establish, maintain, route, and terminate voice calls. The Cisco BTS 10200 also serves as an interface to enhanced service and application platforms. Implementing it enabled Cbeyond to deploy services rapidly, and achieve carrier-grade reliability, service flexibility, scalability to millions of subscribers, and cost savings through investment optimization and operational efficiencies.

To ensure that this solution scaled, Cbeyond needed a high-density, carrier-grade media gateway (or Public Switched Telephone Network [PSTN] gateway). The company chose to deploy Cisco AS5850 Series gateways, which act as trunking gateways to the local and long-distance PSTN and operator 911 services.

RESULTS

Cbeyond deployed the Cisco BLISS solution in Atlanta during March 2001, and followed with deployment in its Dallas-Forth Worth and Denver sites. By December 2003, Cbeyond's customer base had swelled to more than 10,000 customers. During 2002, the first full year of market deployment in its three markets, Cbeyond's end-to-end Cisco, fully IP-based local phone network proved that packet telephony had come of age. Cbeyond's network performed at par with the industry's standards of circuit-switched networks, providing 99.99+ percent availability. Since its launch, Cbeyond processed over one billion minutes of voice traffic, proving that IP networks are not only reliable, but scalability as well.

Cbeyond has been very pleased with its decision to deploy Cisco technology in its network. According to Cbeyond President and CEO Jim Geiger, Cisco outperformed all competitors during technical trials, overcoming any issues encountered throughout the process.

One of the most important distinctions Geiger cited in choosing the Cisco solution over the competition is Cisco and Cbeyond's common business philosophy: the commitment to customers and to meeting customer needs. "Working with Cisco has surprised us," Geiger said. "[Cisco] acts like the smallest entrepreneurial company that we've worked with. Cbeyond and Cisco share a common business philosophy: focus on the customer. Cisco not only understands the product and manufacturing challenges, it also understands service provider business plans and strategies. Cisco listens to its customers and makes product changes and enhancements based on customer requirements. This is very different from the rest of the industry and is an important distinction when comparing Cisco to other vendors."

MFG Sealants, an Atlanta-based sealant company, is a Cbeyond customer. Todd Walls, president of MFG Sealants, had this to say about Cbeyond's BeyondVoice package of integrated services. "Since we signed up with Cbeyond, sales and profits [have increased by approximately US]\$200,000 dollars. The ability to have more phone lines, faster Internet service, and to streamline our billing process has made us more efficient. Cbeyond's delivery of the T-1 line enables us to build our own Web server and eliminate even more costs. We have priced equivalent services from carriers and Cbeyond saves us over [US]\$6000 dollars a year in telephone and data service charges. Those savings alone pay for Cbeyond service."

CONCLUSION

Taking full advantage of the Cisco BLISS solution, Cbeyond can provide a cost-effective, broadband communications solution for small-business customers. Cisco provides Cbeyond with the platform to deliver business processes and productivity tools via the Internet. Its decision to work with Cisco enabled Cbeyond to deliver on its business plan

in fewer than 12 months. Today, the company is acquiring customers faster than expected. By embracing next-generation, IP packet technology, Cbeyond Communications is changing the rules for small-business communications service offerings, delivering high-quality,

competitive telephony and Internet services at reduced costs to the underserved and growing, small-business market.

To find out more about the Cisco BLISS solution, visit:
<http://www.cisco.com/go/telephony>



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