



Cisco Enables Cbeyond Communications to Deliver **Converged Local Voice and Broadband Services** to Small Business Customers

The Challenge

Cbeyond Communications wanted to use an IP-based network to provide small businesses with all the communications services they need at affordable prices—something that is typically only available to large enterprise companies. Cbeyond wanted to build an IP- and software-based network architecture that could deliver converged voice and data services dynamically over a single platform with seamless integration and delivery. And, Cbeyond leaders wanted one company to provide them with an end-to-end solution to make their vision a reality.

The Business Proposal

In April 2000, Cbeyond formalized its business plan proposal to cost-effectively supply big-business communications capabilities to the huge and underserved small-business market in the top 25 U.S. cities. At the time of the Request for Proposal, Cbeyond was the first service provider to propose using voice-over-IP (VoIP) technology to deliver this integrated solution of converged voice and data to the small-business market.

They wanted to provide VoIP services using next-generation, softswitch network technology versus “old world” time-division multiplexing (TDM) because they wanted the economics that would allow them to deliver a cost-effective managed services offering to smaller businesses. By identifying a low-cost solution, Cbeyond knew they would be able to address a segment of the market that had been historically uneconomical to address, and therefore often overlooked: the small business with less than 10 phone lines.

Cbeyond’s analysis of capital and operational costs indicated that a TDM-based solution would have 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, service providers will save on co-location and power consumption as well as benefit from lower expenditures for the initial capital investment.

Cbeyond competes with other local telephone companies, including incumbents. They are fully peered with the incumbent local exchange carrier (ILEC) and offer target customers all the calling features small businesses expect in a local calling environment, such as call waiting, call forwarding, call hold, 911 emergency calling, and so on. Cbeyond’s goal was to change the customer experience, not their behavior. They wanted to provide a solution where the small-business customer would not require any special phones and could use their existing equipment.

Cbeyond’s target customers and geographic areas are small businesses with less than 100 employees with five to 25 local lines, initially, in Atlanta and Dallas.

About Cbeyond Communications

Cbeyond Communications, a facilities-based, applications-focused service provider, is a leader in the emerging local packet telephony and broadband Internet services market. They are one of the first service providers to build a pure IP, integrated voice and data network from the ground up.

Cbeyond delivers small business customers an integrated local and long distance telephony and broadband Internet package over an IP-based architecture, providing a platform for the delivery of future IP-based applications such as unified messaging, virtual private networks (VPNs), and hosted business applications.

The Cisco Solution

The Cisco local services voice solution provides Cbeyond with an infrastructure that enables them to deliver integrated broadband access and voice services to their small-business customers using a softswitch-based architecture. With a softswitch-based architecture, new services can typically be added without the need for additional equipment. This is because it can act or interface with any service delivery or feature server. The softswitch, coupled with packet-based architecture, allows for almost any new service to be added onto the network whether it is voice, data, video, or other value-added services.

Cisco was the only vendor that could provide Cbeyond with a high-quality, cost-effective, end-to-end solution. Cisco provided a solution comprised of the Cisco IAD 2421 Integrated Access Device, which is located at the customer premise; the Cisco BTS 10200 Softswitch; Cisco ESR 10000 Series edge services routers, which are used for aggregation of voice and data traffic; Cisco 3660 routers, which act as trunking gateways to the local and long-distance Public Switched Telephone Network (PSTN) and operator 911 services; the Cisco AS5300, which functions as an integrated voice response platform, Cisco Catalyst® 6500 switches; and the Cisco 7200 router, which connects data traffic to the Internet.

Cbeyond uses the Cisco IAD 2400 Series Integrated Access Device to deliver local and long-distance services, high-speed Internet access, Web hosting, and other Internet-based applications in one integrated solution. The Cisco IAD 2421 is deployed at each customer site as the customer premises equipment (CPE) device. The Cisco IAD 2400 Series allows Cbeyond to deliver its BeyondVoice service, which provides customers five to 15 ports of analog or digital voice, an Ethernet port connection for data and other data applications delivered over T1 access to the WAN.

The fully redundant and NEBS-compliant Cisco BTS 10200 Softswitch enables Cbeyond to deliver a cost-effective packet voice solution to their small business customers without investing in expensive TDM technology. A TDM-based architecture, or circuit switch, is designed specifically for delivering voice traffic. Each call uses a dedicated 64K of bandwidth whether it is transmitting information or not. The Cisco solution enables dynamic allocation of bandwidth for Cbeyond customers. When end users are not on the telephone, all network bandwidth will be available for data.

The Cisco BTS 10200 Softswitch provides Cbeyond with call-control intelligence for establishing, maintaining, routing, and terminating voice calls. The Cisco BTS 10200 allows Cbeyond to offer customized services to small and medium-sized businesses at extremely competitive rates.

In addition to a cost-effective, end-to-end solution, the Cisco solution provides Cbeyond with superior technology unmatched by any other vendor. Cisco outperformed all competitive solutions during technical trials, overcoming any issues encountered throughout the process. According to Cbeyond President and CEO Jim Geiger, “Cisco has provided a great vision, tremendous resources, and a superior product set. Cisco is six to 12 months ahead of the competition for a local services solution.”

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 customer needs.

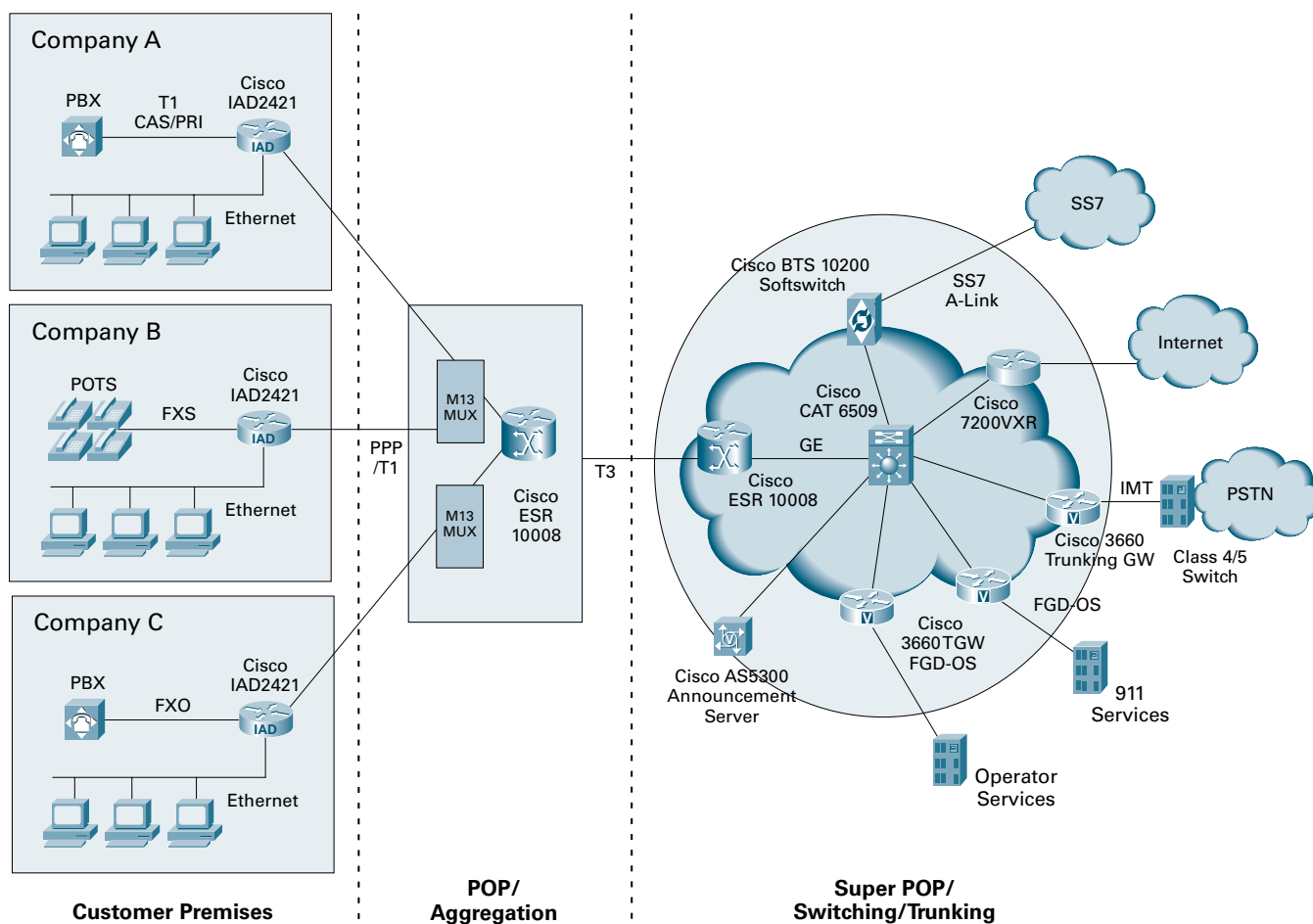
“Working with Cisco has surprised us,” Geiger said. “[Cisco] acts like the smallest entrepreneurial company that we’ve worked with. Cbeyond and Cisco share a common business philosophy: focus on the customer. Cisco not only understands the product and manufacturing challenges, they also understand service provider business plans and strategies. Cisco really listens to their 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.”

Configuration and Deployment

The Cisco local services voice solution was deployed at Cbeyond in March 2001 (Figure 1). For Cbeyond customers, the average installation interval from the date the contract is signed until the network is deployed is approximately 35 calendar days.

Currently, Cbeyond has deployed the Cisco local services voice solution in Atlanta, Georgia, and Dallas, Texas in the U.S.. Atlanta and Dallas each have a full point of presence (POP) deployed with a Cisco BTS 10200 Softswitch, Cisco Catalyst 6500, Cisco 7206 router, Cisco ESR 10008 Edge Services Router, and Cisco 3600 gateways. There will be another POP in Denver, Colorado, that will operate remotely off the redundant Dallas softswitch. The Cisco IAD2 421 is deployed at each customer site as the CPE device.

Figure 1 Cbeyond’s Integrated Voice-and-Data Network Configuration Using Cisco Local Services Voice Solution



The Results

For significantly less than the capital expenditures of circuit-switched carriers that provide only a narrowband connection, Cbeyond is leveraging advances in softswitch and IP technology to deliver a richer, integrated package of voice, broadband Internet access, and IP-based applications. Significantly lower capital costs allow Cbeyond to economically serve customers with as little as five lines of local service, which is 40 percent of all business customers. Cbeyond's lower capital costs permit a much smaller customer size, resulting in an increase in the addressable market by 2.6 million businesses nationwide from that of legacy competitive local exchange carriers (CLECs), which deploy traditional circuit switches.

The Cisco local services voice solution enables Cbeyond to provide a specific, cost-effective solution to a huge and growing addressable market. Cbeyond found that 60 percent of their customers had 56K dialup in their offices. They were able to provide value and utility to these customers by offering them a T1 Internet connection, local and long-distance voice services—the entire communications package—for roughly the cost of what they were paying for their voice services alone.

The Cisco solution enables Cbeyond to yield higher average revenues per customer when compared to traditional service providers because the architecture allows the customer to have all of their communications needs addressed by a single provider. Cbeyond's service offerings, called BeyondVoice, provide customers with high-speed Internet access, data services, e-mail, long distance, and local services at a lower monthly cost than other service providers. The flexibility of the architecture also allows Cbeyond to sell other IP-based applications such as unified messaging, Web hosting, e-mail, voicemail, VPNs, and online data backup—further increasing the average revenue per customer and creating a stronger business relationship with the client. In addition, the Cisco solution is less costly to provision and maintain because it is delivered on a single, integrated network—one protocol, one pipe. There is a single provisioning interface as well as a single Operations Support System (OSS) to run it all.

Horizon Technologies, an Atlanta-based technology company, is a Cbeyond BeyondVoice customer. Mike Leddy, President of Horizon Technologies had this to say about Cbeyond's BeyondVoice service:

“Cbeyond's BeyondVoice solution provides Horizon with a cost-effective and reliable, integrated voice and data solution. Cbeyond delivers a bundled service that is easy to deploy and manage. In addition to voice services, it also provides Horizon with high-speed Internet access that is more reliable and faster than the previous DSL service we were using from a larger provider. Another benefit of deploying the Cbeyond solution is Horizon's ability to seamlessly implement IP-based videoconferencing, something that wasn't possible with our previous solution. Horizon has also realized a financial benefit. The BeyondVoice service has saved us between \$600 and \$700 a month in voice, data, and videoconferencing costs.”

Capital expenditures for Cbeyond in a typical market are 60 percent less than the cost of a circuit-switch-based market entrant. In addition to the lower costs in capital investment, Cbeyond will also reap the continued savings in ongoing maintenance and management of one network infrastructure. The dynamics of the software-based architecture allow Cbeyond to seamlessly handle moves, additions, and changes for customers remotely, without an expensive truck roll. In fact, systems are designed to allow customers to make their own line additions and changes, online, at their convenience. Simplified management provides dramatic savings over the expensive, manually-intensive methods that traditional circuit-switch carriers use to meet similar needs.

More than 60 percent of Cbeyond's capital costs are based on customer success. In other words, 60 percent of Cbeyond's costs to deliver these services occur after a customer contract has been signed and revenues start flowing. Unlike other carriers who fully provision their networks with services in advance of sales, Cbeyond will not incur the expense unless they are installing a paying customer.

Cbeyond's network infrastructure is controlled by software applications that make their resources open to additional development through power application programming interfaces (APIs). This open architecture means Cbeyond can tap the collective creativity of the software development industry in bringing new applications to the small-business customer. All applications are provided at the IP level, allowing Cbeyond to evolve the access strategy as more reliable and economical technologies emerge. Initial access technologies will be predictable T1s. In the future, alternative access technologies such as digital subscriber line (DSL), fiber, and broadband wireless will reduce Cbeyond's dependence on the local exchange carrier (LEC).

The service creation environment allows developers to create new applications that continually take advantage of and integrate with existing applications. As the portfolio of applications expands, the opportunity for future applications grows exponentially.

Conclusion

With the Cisco local services voice solution, Cbeyond is able to 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. Partnering with Cisco enabled Cbeyond to deliver on its business plan proposal in less than 12 months. They have found remarkable customer acceptance for their BeyondVoice service and pricing. Cbeyond anticipates serving approximately 1000 total customers by December 2001. They are closing deals and acquiring customers faster than they expected and project to be profitable with a positive cash flow in less than two years—a timeframe unsurpassed by any other service provider in the industry.

Embracing next-generation, IP packet technology, Cbeyond Communications is changing the rules for small-business-communications service offerings. They deliver high-quality, competitive telephony and Internet services at reduced costs to the underserved and growing, small-business market.

About Cbeyond Communications

Cbeyond Communications, a privately held, Atlanta-based broadband applications services provider (BASP), is the leader in the emerging local voice and broadband services market and the first service provider to build from the ground up an integrated, pure-IP network for local telephony. Using IP architecture, Cbeyond delivers to small-business customers an integrated package of high quality, local and long-distance telephony services, high-speed Internet (broadband) access, and Internet-based applications for prices significantly less than what they are paying now for voice alone. Cbeyond has a high-touch, customer-care approach, which includes a local market-based, dedicated point of contact, and Web-based account management tools. For more information on Cbeyond Communications, visit the Web site at www.cbeyond.net <<http://www.cbeyond.net>>.



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