CUSTOMER SUCCESS STORY

WITH CISCO SYSTEMS, COMCAST SCALES ITS COMMERCIAL METRO SERVICES AND COMPANY REACH

EXECUTIVE SUMMARY

CUSTOMER NAME

- Comcast delivers customized high-speed data networking services and solutions to enterprises, public organizations, and private institutions. The company's network spans more than 90,000 fiber-optic miles to deliver services in 41 states and 22 of the top 25 U.S.-metropolitan areas. It supports a range of technologies, including ATM, Metro Ethernet, SONET, and wavelength. Comcast Commercial Services is headquartered in Philadelphia, with local offices throughout the United States.

INDUSTRY

- Telecommunications

BUSINESS CHALLENGE

- Migrate to IP-based Metro Ethernet network to improve operational and capital efficiencies
- Gain quality-of-service (QoS) capabilities for differentiating service offerings
- Meet market demand for increased scalability so customers can quickly and easily add users, locations, and applications

NETWORK SOLUTION

- Cisco Metro Ethernet solution, including the Cisco Catalyst 3750 Metro and Catalyst 3550 Series switches, Cisco 7600 Series routers, Cisco SMARTnet® Onsite services, and CiscoWorks network management software.
- Comcast Enterprise Network Service qualified for the Cisco Powered Network designation by operating a network built end to end with Cisco equipment and by maintaining high levels of network quality and performance

BUSINESS VALUE

- Deliver multiple differentiated services, levels of QoS, and bandwidth capacities over a single connection
- Gain competitive advantage with ability to scale service offerings
- Enable customers to provision new services or increase capacity immediately and without truck rolls

When Comcast wanted to move to a service-driven Metro Ethernet network infrastructure for its enterprise offer, it chose Cisco Systems solutions. Now, Comcast customers in 41 states implement their enterprise networking capabilities precisely as they want them.

BUSINESS CHALLENGE

Comcast provides networking services to midsize and large enterprises, as well as to specialized markets, including education, healthcare, and local government. Comcast's nationwide fiber network provides a robust service delivery backbone that is extended to customer premises in local markets as needed. Until recently, Comcast's Enterprise Network Service was only available over an Asynchronous Transfer Mode (ATM) network. The service provided broadband connectivity, tying together multiple customer sites.

"We wanted to migrate our service platform from the ATM technology to Ethernet and IP-based technologies," explained Brian Yohn, director of product management for Comcast. "Moving to Gigabit Ethernet would improve our operational efficiencies and enable us to respond more effectively to customers who want cost-effective connections to advanced IP services." Comcast had three specific requirements—IP connectivity, quality-of-service (QoS) capabilities, and scalability.

In service providers' metro networks, Ethernet has strong market momentum. As a result, many Comcast customers seek a provider that offers the most bandwidth per dollar value. Exciting new IP applications are emerging in all of Comcast's target markets, and customers want to implement them in ways that help them achieve business goals and meet budget requirements. For example, healthcare applications, such as Picture Archiving and Communication Systems (PACS), improve storage and physicians' access for diagnostic images, such as X-rays, positron emission tomography (PET) scans, and MRI scans. Educational institutions are seeking ways to deliver innovative curriculum to students and connect them with other learning opportunities over the Internet. Enterprises continually seek ways to reduce communication costs through voice-over-IP (VoIP), videoconferencing, and video-on-demand solutions.

In addition to providing broadband capacity, Comcast needed to assure customers that it could support the various QoS levels and transport priorities advanced IP applications require, and deliver them over a single connection.

Scalability was crucial—when customers want to add on a service or scale performance, Comcast wanted to make it as easy and transparent as possible, without adding a corresponding burden on its IT staff.

NETWORK SOLUTION

"We chose Cisco Systems® for two reasons," said Yohn. "One reason was a business decision. As a Cisco® Powered Network Program member, we could team with the Cisco sales channel and take advantage of Cisco marketing capabilities. Cisco provided more value in its overall business contribution than any other vendor, including a strategic engagement with Cisco IBSG who helped us analyze the market, sculpt our service portfolio and better target our offering. Secondly, the Cisco Catalyst® 3750 Metro Series Switch was the best system we found to support the hierarchical QoS capability we need to offer differentiated services, and it gives customers virtual LAN transparency—the ability to assign, manage, and change their virtual LAN schemes without having to call us."

The Cisco Catalyst 3750 Metro switch provides intelligent Metro Ethernet access and features, such as advanced hierarchical QoS, traffic shaping, virtual LAN (VLAN) translation, Multiprotocol Label Switching (MPLS), and Ethernet over MPLS (EoMPLS) support. Optional redundant AC or DC power helps assure high availability. Comcast deploys Catalyst 3750 Metro switches at customer locations, where they switch traffic back to the Comcast network for multisite routing over a fiber connection. The Catalyst 3750 Metro switch can also interface with customers' own premises networks to consolidate LAN traffic and switch it over the metro network.

Comcast deploys core network infrastructure at a main location in each geographic area it serves—currently 16 markets across the United States. Each configuration is different, but many incorporate Cisco 7600 Series routers and Cisco Catalyst 3550 switches. Each core network provides coverage for one large metropolitan or regional area.

"We look at the Cisco Catalyst 3750 Metro switch as our delivery platform for whatever other services we decide to provide in the future."

—Brian Yohn, Director of Product Management

BUSINESS VALUE

The new Metro Ethernet network delivers several important scalability and manageability advantages over the previous main ATM backbone network, providing a fresh competitive advantage. In the past, Comcast could only offer network speeds up to OC-3, or 155 Mbps, with a specialized device installed at the customer's premises. Once the customer's capacity reached OC-3, Comcast would have to install another system to increase the desired bandwidth up to OC-12, or 622 Mbps. This was especially challenging in sales situations, when a customer needed more than OC-3 but far less than OC-12, or in cases where a customer may need less than OC-3 capacity when signing up for service but expected to increase its needs over the life of the contract.

"The Gigabit Ethernet technology gives us more scalability," said Yohn. "We could have scaled to OC-12 with our old ATM network, but it was proportionately more expensive for us to provide, manage, and support. Customers viewed it as a competitive disadvantage. Now we can scale metro services in one-megabit increments, and it's a software change—not a hardware change. It's fast and easy to do and the customers receive the capacity they need when they need it, not six weeks after they order it."

In addition, Comcast is now able to use built-in Cisco advanced hierarchical QoS features to offer Gigabit Ethernet with three distinct service levels on one connection. Basic Bandwidth service provides e-mail and file sharing; the Priority Bandwidth service accommodates important enterprise applications such as customer relationship management and enterprise resource planning; while the Premium Bandwidth service delivers real-time applications such as VoIP, video streaming, and videoconferencing. In addition to offering a choice of QoS levels, Comcast also customizes the specific mix of bandwidth classes and capacity to a customer's needs. Customers can subscribe to a mix of Basic, Priority, and Premium bandwidth services and use them dynamically over a single interface.

The VLAN transparency feature of the Cisco Catalyst 3750 Metro switch greatly simplifies network management as well. Comcast customers can assign, manage, and change their VLAN schemes without having to go back to Comcast. For example, if a school system has three buildings on the network and would like to reconfigure a distance-learning lab to put it on its own private VLAN, the school could administer the change itself. The school immediately provisions what it needs. Comcast is spared having to send out a technical service representative. Both companies save money.

Adding new services is as easy. If a customer would like to add Internet access, Comcast simply lights up another port on the Catalyst 3750 Metro switch and delivers Internet access. The system's characteristic ease of use makes it simple and cost-effective for Comcast to roll out new services.

"A third benefit of the Cisco network is that it makes it easier for us to attract and retain technology expertise," said Yohn. "There are more network professionals with IP and Ethernet experience available, compared with ATM experience. As an operator, we want to be as efficient with our talent as possible. It's going to help us grow the business much more effectively."

The Central Dauphin School District near Harrisburg, Pennsylvania, is relying on Comcast to help it deliver innovative educational services, reduce telecommunications costs, and bring multimedia experiences into the elementary, middle school, and high school classrooms. Matt Sinopoli, director of information services for Central Dauphin schools, has projects underway that take advantage of the QoS and scalability features of Comcast's offering.

"The Comcast service gives us a high-speed network at a cost-effective price and it's managed for us," said Sinopoli. "It's one less thing we have to worry about with everything else we're doing." The 'everything else' includes a distance learning initiative. Now students who want to take a class offered at another high school in the district's precincts can go to a distance learning lab and never have to leave the building. This also eliminates the transportation cost and logistics that moving students between schools would entail.

An IP telephony solution connects the district administration with a new high school, and the district plans to expand the service to cover additional schools. The Comcast service will also help Sinopoli to consolidate servers and centralize resources to reduce management, licensing, and upgrade costs. He expects that the district will save approximately $20,000 per year in telecommunications costs.

"We can better accommodate our customers because of the network's flexibility, scalability, and advanced features," said Yohn. "Not only does it give us more deployment flexibility, it contributes to our financial flexibility."

"We wanted to select a vendor who would really be a partner with us. From an overall business contribution perspective, Cisco brought more to us than any other vendor."

—Brian Yohn, Director of Product Management

NEXT STEPS

With the new Cisco Metro Ethernet network, Comcast expects to grow its business much more rapidly than in the past. Using the Comcast fiber backbone and existing IP transport assets in metropolitan areas today will help enable rapid rollouts of new services with little incremental investment. Easy provisioning also will allow Comcast to influence existing customers to purchase new services. Cable customers can migrate to the fiber infrastructure. Basic connectivity customers can easily add Internet access or a premium service. For Comcast, new services can be easily provisioned over the same platform—saving time, eliminating the need for specialized resources, and reducing costs.

"Cisco has been very helpful as we have redefined our service portfolio," said Yohn. It's certainly more cost-effective and scalable today."

FOR MORE INFORMATION

To find out more about Cisco Metro solutions, go to: http://www.cisco.com/go/metro or to find out more about Comcast, go to http://www.comcastcommercial.com.

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