MANAGED METRO ETHERNET SERVICES: BUSINESS ADVANTAGES FOR THE ENTERPRISE

Ethernet is rapidly becoming the primary communications technology for organizations of all sizes. Most businesses already have Ethernet LANs. By extending Ethernet beyond the office or campus to the metropolitan-area network (MAN), businesses can gain greater reliability, performance, and flexibility than they could with other broadband access methods, usually at lower cost.

OUT-TASKING METRO ETHERNET SERVICES TO A MANAGED SERVICE PROVIDER IS A COST-EFFECTIVE WAY TO HELP ENSURE SERVICE AVAILABILITY, NETWORK SECURITY, AND QUALITY OF SERVICE (QoS).

EXECUTIVE SUMMARY

Ethernet has become the preferred transport for advanced services such as IP telephony, video streaming, medical imaging, and data storage. Factors contributing to its popularity are low cost, reliability, ease of adding bandwidth in small increments, and interoperability with traditional broadband access technologies used over the WAN. In addition, because Ethernet is a mature technology, most enterprises already have people on staff with Ethernet management skills, avoiding the need for training or new hiring.

Companies with Ethernet LANs have begun extending their use of Ethernet to the metropolitan or wider area so that remote offices can reliably access applications and data on the headquarters LAN. Compared to traditional access methods such as Frame Relay, ATM, or time-division multiplexing (TDM), Metro Ethernet is less expensive and gives companies a greater ability to monitor and control their transport, much as they do for LANs.

Companies that decide to extend Ethernet from the LAN across a metropolitan or wider area face an important decision: whether to manage the MAN with in-house resources or out-task management to a managed service provider. For most companies, out-tasking is more cost-effective. While a simple Ethernet LAN is a predictable, controlled environment that in-house IT professionals can readily support, an Ethernet MAN is more complex and requires skills and resources that many companies do not have in-house. Companies that out-task Metro Ethernet service management to a service provider actually gain more control over their core business because they relieve IT resources from routine management tasks. Other benefits of out-tasking to a managed service provider include reduced capital and operational expense and improved service availability, network security, and QoS. Furthermore, companies can more easily scale their networks with changing business needs because managed service providers offer bandwidth in small increments from 1 Mbps to 1 Gbps.

This white paper summarizes the advantages of Metro Ethernet for enterprises and small and medium-sized businesses (SMBs) and explains the advantages of out-tasking to a managed service provider. The paper concludes with case studies of companies that currently take advantage of a managed Metro Ethernet service from a member of the Cisco® Powered Network Program.

THE BUSINESS VALUE OF METRO ETHERNET

Figure 1 shows a typical Ethernet LAN environment within a single building, serving one or multiple tenants, and Figure 2 shows how a company might extend Ethernet across the metropolitan area.

Figure 1
Traditional LAN Environment
Figure 2
Extended LAN Environment
A Metro Ethernet service is a highly scalable alternative to traditional broadband access methods such as Frame Relay, ATM, and TDM. It empowers businesses to cost-effectively connect multiple sites in the metropolitan area to each other and to the Internet. It coexists with other broadband access methods, such as Frame Relay, ATM, or TDM, that some branch locations might already use, extending the life of existing network investments. In addition, because Metro Ethernet is IP-compatible, companies can take advantage of IP applications for productivity and business resilience that are difficult to deploy over a TDM or Frame Relay network. These applications include:

- Hosted telephony
- Voice over IP (VoIP)
- Streaming and broadcast video
- Real-time applications such as collaborative development
- Secure Layer 2 and Layer 3 VPNs
- Business intranets and extranets
- Network security
- Storage area networking and hosting
- Disaster recovery

**Management Requirements for Metro Ethernet**

Whether a company manages its Metro Ethernet MAN in-house or out-tasks to a managed service provider, it needs the following capabilities:

- Designing the network infrastructure to meet the company’s strategic requirements
- Ensuring quality of service (QoS) needed for voice and business-critical data traffic—for example, by assigning higher priority to voice and live video streams than to non-time-critical applications like e-mail
- Ensuring network security
- Purchasing and configuring equipment
- Sharing data and applications securely
- Accommodating changes to the business environment, such as higher volume, additional locations, or need for additional classes of service for new types of traffic
- Delivering applications and data to branches or partners that access the network in different ways, such as through T1 phone lines, Frame Relay, or ATM
- Monitoring availability and performance
- Troubleshooting

**Why Out-Task to a Managed Service Provider?**

Rather than dedicating IT staff to designing, deploying, and managing a Metro Ethernet network, most SMBs and many enterprises save money and achieve better network performance by out-tasking Metro Ethernet service management to a managed service provider. Managed Metro Ethernet service offerings are flexible, highly scalable, safe, and complete. Many service providers offer different types of Metro Ethernet access services—for example, for interoffice communications, dedicated Internet access, and direct connection between two locations that exchange high volumes of traffic.

For most types of Metro Ethernet service, the service provider provides online provisioning and management and monitors the service constantly to ensure high availability and dependable performance. As business needs change, the service provider can add or scale back...
bandwidth, add security services such as encryption of sensitive data, and adjust QoS to ensure service levels for voice or other time-sensitive applications. Network management is simplified because the service provider can make a change once and then apply it simultaneously to all geographical locations.

Following are reasons that out-tasking Metro Ethernet service management to a managed service provider makes good business sense.

- **Free up internal IT resources to focus on the core business**—By delegating routine tasks, companies free IT staff resources to focus on the core business as well as strategic initiatives such as network design and planning.
- **Reduce costs**—With its economies of scale, a service provider can charge less than its customers would otherwise spend for operations, maintenance, service, equipment, and technology upgrades. Out-tasking also enables pay-as-you-grow scalability, eliminating the need to overpurchase at the outset of service deployment to accommodate anticipated growth.
- **Gain expertise and support not available in-house**—Service providers can fill critical resource gaps such as network security, which typically requires special training and expertise.

**CASE STUDIES**

By out-tasking Metro Ethernet services to managed service providers, Cisco Systems® customers are experiencing quantifiable improvements in network availability, scalability, and performance.

**Outback Steakhouse, Inc., Florida**

Outback Steakhouse, which manages more than 1100 restaurants, adopted Metro Ethernet to improve the availability of its network and to prepare to support twice as many restaurants in five years. With the company’s previous in-house solution, limited bandwidth slowed network performance for the company’s restaurants, forcing managers and executives to wait for important data and causing reporting delays. To improve availability, Outback Steakhouse decided to out-task its data center to a secure site, a Qwest Cyber Center, designed to remain available despite regional power outages and hurricanes. To connect headquarters to the data center, Outback Steakhouse subscribed to Time Warner Telecom’s managed Metro Ethernet service. “At headquarters, we wanted a solution that enabled us to focus on our own growth strategy, which is why we began evaluating out-tasking partners,” says Dusty Williams, CIO for Outback Steakhouse. “Having the Metro Ethernet solution between the data center and our corporate location gives us a much more reliable solution. We’ve had no downtime and no business interruption.” And in addition to saving money on metro area networking, Outback Steakhouse can add more bandwidth capacity as needed with a phone call to its managed service provider. For the full case study, go to: [http://www.cisco.com/en/US/netsol/ns465/networking_solutions_customer_profile0900aecd8021ac93.html](http://www.cisco.com/en/US/netsol/ns465/networking_solutions_customer_profile0900aecd8021ac93.html)

**Sherman Independent School District, Texas**

The Sherman Independent School District (SISD), located near Dallas-Fort Worth, needed to improve network performance and reliability to achieve its top-level goals. First, the district wanted to deliver mission-critical learning and business applications more quickly and efficiently across its network and to students in their homes. Second, poor application performance threatened to affect critical operations, including transportation scheduling, food preparation, and food delivery, as well as the point-of-sale terminals, education policy dissemination, and file sharing between educational applications. Finally, more reliable performance would also enable the district to deploy more applications for distance learning, adult education, student and teacher communication, online research, and information retrieval. When evaluating MAN solutions, the district considered low cost as well as simplified management and security. SISD met its goals by out-tasking to Verizon, which interconnected the district’s individual LANs with Metro Ethernet. The result is a simpler, more cost-effective MAN that allows SISD to support a wider range of voice, video, and data applications. And by out-tasking management services to Verizon, SISD freed its own IT resources to focus on core objectives: providing outstanding education for all members of the community. For the full case study, go to: [http://www.cisco.com/en/US/netsol/ns465/networking_solutions_customer_profile0900aecd802119b2.html](http://www.cisco.com/en/US/netsol/ns465/networking_solutions_customer_profile0900aecd802119b2.html)
Radiology, Ltd., Arizona

Radiology Ltd., based in Tucson, Arizona, sought to improve radiologists’ productivity by delivering medical images on demand to its eight offices throughout the area. The company performs more than 600,000 procedures a year and expects to grow by 15 percent each year. The company’s original network, which linked the eight sites over microwave, strained under the burden of transporting huge medical imaging files, which affected reliability and availability and therefore impeded radiologists’ productivity. Radiology Ltd. decided to redesign its network to provide the needed bandwidth and also support wireless communications and IP telephony.

Radiology Ltd. engaged Calence, a Cisco Gold Certified Partner, to design a new network. Calence, in turn, worked with Time Warner Telecom, a member of the Cisco Powered Network Program, to deliver a Metro Ethernet managed service. The company experienced immediate, measurable improvements. Network throughput increased by 27 percent, network response times improved 45 percent, and radiologists’ productivity soared because the average reading time for images dropped by 45 minutes. The result: the company enjoys almost twice the network performance for the same price it was paying for the previous service. “In the past, it might require a day and a half to deliver films to the referring physician,” says Ben Armstrong, assistant director of IT. “Now images can be available within five minutes of the examination.” For the full case study, go to:


WHAT TO LOOK FOR IN A METRO ETHERNET MANAGED SERVICE PROVIDER

To select a managed Metro Ethernet service provider, consider the following:

• Does the service provider track and monitor the end-to-end network?
• Can the provider secure its own network traffic and manage priority traffic across other networks?
• What are minimum thresholds for network latency and availability?
• How is network performance measured?
• Are there procedures for trouble escalation, load rebalancing, network security assessments, and regular data backups?
• Can its data center support your requirements for physical and network security, capacity, availability, operations, and backbone connectivity?
• How quickly will the provider respond as your business grows or changes?
• What are the terms if the network goes down or the level of agreed-upon service is not maintained?
To out-task Metro Ethernet services to a managed service provider, businesses need more than vague rhetoric about interoperability, security, and reliability; they want confidence. Businesses receive that confidence from service providers that are members of the Cisco Powered Network Program. Because they build their networks with Cisco products from end to end, service providers with the Cisco Powered Network designation supply reliable, industry-leading, out-tasked services that enable advanced applications. Benefits of selecting a service provider that is a member of the Cisco Powered Network Program include:

- Compliance with stringent requirements and standards
- Confidence that out-task partners are using industry-standard technology
- Optimized deployment of security services in a timely manner
- Lower infrastructure investment

FOR MORE INFORMATION
To learn more about managed services, visit:

http://www.cisco.com/go/managedservices

Other Resources
To learn more about Cisco solutions for metropolitan networking, take the managed services e-tour at: http://www.cisco.com/go/msetour

To find a recommended service provider for out-tasking managed Metro Ethernet services, visit:

http://www.cisco.com/cpn

Out-Tasking Overview

White Papers

Customer Success Stories
Cisco Systems has more than 200 offices in the following countries and regions. Addresses, phone numbers, and fax numbers are listed on the Cisco Website at [www.cisco.com/go/offices](http://www.cisco.com/go/offices).

Argentina • Australia • Austria • Belgium • Brazil • Bulgaria • Canada • Chile • China PRC • Colombia • Costa Rica

Croatia • Cyprus • Czech Republic • Denmark • Dubai, UAE • Finland • France • Germany • Greece • Hong Kong SAR

Hungary • India • Indonesia • Ireland • Israel • Italy • Japan • Korea • Luxembourg • Malaysia • Mexico

The Netherlands • New Zealand • Norway • Peru • Philippines • Poland • Portugal • Puerto Rico • Romania • Russia

Saudi Arabia • Scotland • Singapore • Slovakia • Slovenia • South Africa • Spain • Sweden • Switzerland • Taiwan

Thailand • Turkey • Ukraine • United Kingdom • United States • Venezuela • Vietnam • Zimbabwe

All contents are Copyright © 1992–2005 Cisco Systems, Inc. All rights reserved. Cisco, Cisco Systems, and the Cisco Systems logo are registered trademarks or trademarks of Cisco Systems, Inc. and/or its affiliates in the United States and certain other countries.

All other trademarks mentioned in this document or Website are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company. (0502R)

Printed in the USA