



A Strong Move

Cisco and HP help Visa move into new state-of-the-art headquarters and make business continuity a bankable commodity. BY ERIC J. ADAMS

TEAM PLAYERS

Mission \ Cisco Systems and HP work together to help joint customers realize measurable business value from their Internet Protocol (IP) network investments.

Strategies \ HP Services features Cisco expertise in enterprise networking infrastructure and HP's strength in servers, storage, and network and computer management, enabling customers to improve productivity and agility.

Programs \ The Cisco-HP Optical solution is one example of the alliance in action. The turnkey solution is based on HP Integrated Service Management and Cisco IP+Optical portfolio.

When executives at VISA International CEMEA (Central and Eastern Europe, Middle East and Africa) prepared to move the company's U.K. headquarters to new premises in early 2002, they saw it as a sterling opportunity to refresh the company's IT assets and bolster its business-continuity capabilities.

One of the world's most established financial brands, the Visa name is on millions of credit and debit cards around the globe, and more than 22 million merchants use its VisaNet processing center.

Executives at Visa quickly realized that ensuring business continuity—both during a corporate-headquarters move and after—is easier said than done. The complexity of the move, aggravated by multiple existing outdated technical and networking systems, compelled Visa to use the opportunity to address a wide array of issues.

"We saw this as an opportunity to upgrade our server architecture, data availability, security, and recovery capabilities," says Geoff Damp, technical network manager at Visa International CEMEA.

The events of September 11, 2001, also prompted Visa's comprehensive plan. Following the terrorist attacks, the British Financial Services Authority issued several directives requiring or recommending

"rigorous business continuity planning for all financial institutions with special emphasis on back-up space, syndicated use of IT services, staffing and disaster recovery."

Today, Visa is well ensconced in its new London headquarters. A Cisco Systems fiber-optic network acts as a broad platform for HP's Adaptive Enterprise Environment, which gives Visa stability and security today and room to grow in the future.

But the outcome wasn't always so certain.

Uncharted Territory

Initially, Visa planned to tackle the physical move and IT refresh with four initiatives involving separate network and IT workgroups within the company, all operating in parallel and with individual responsibilities for local-area network (LAN), Internet Protocol (IP) telephony, and storage-area network (SAN) subprojects.

Visa also set two additional goals: to complete the move to the new location without compromising customer service or the data assets, and to connect with—for the first time—the company's main data center approximately 70 miles away. Visa approached potential vendors with the separate projects, but after a comprehensive assessment chose HP as the lead service provider, based on its ability



to manage and integrate the four projects from start to finish. "We were convinced that these subprojects had to be synchronized in order to ensure that Visa's core business was not put at risk," says Ross Boxshall, account manager at HP. "And once we started talking with Visa, they immediately understood the benefits of having one vendor offering highly specialized teams in each of the subproject technology areas and providing a single point of contact and management."

A further critical factor for Visa was Cisco, which has a long-standing strategic alliance with HP. Cisco's expertise in a wide range of networking and IT infrastructure technologies enabled HP to propose a complete turnkey business solution, including SAN, LAN, and IP telephony.

"HP and Cisco were able to provide a best-practice solution supported by high-quality service level agreements," says Damp. "They offered us a network with eight times the bandwidth of traditional circuits at approximately the same cost."

To handle the project's complexity, Visa and the vendors involved (led by HP) collaborated to manage hardware and software, including a Cisco high-speed LAN.

Storage Forever

As if moving its headquarters was not challenging enough, Visa also hoped to achieve something of a landmark—the world's first disaster-tolerant SAN delivered across a fiber-optic network.

"Business continuity was an imperative, and this plan would signal Visa as an innovator in the business-continuity community," says HP's Boxshall.

SANs are designed to distribute backed-up data intelligently across a network, providing advanced functionality compared to the alternative, direct-attached storage. They also lower an organization's total cost of ownership by allowing better use of existing networking assets and expertise.

HP and Cisco designed a SAN capable of fast recovery in the unlikely case of network failure. Real-time remote back-up ensures business continuity in the event disaster strikes a single, or even two, sites. HP contributed its HP StorageWorks Data Replication Manager application, which provides data back-up and recovery between three sites. Cisco provided managed SAN and optical connections between the three sites.

"That's bandwidth enough to provide Visa with ample pathways needed for business resilience, storage, and multimedia well into the future," says Lee Ashwood, global account manager at Cisco. Financial institutions were among the first, and are still the largest, enterprise users of optical networking because of their need for split-second data access, high security, and off-site

NEW CONNECTIONS

TAIWAN NATIONAL INFORMATION AND COMMUNICATIONS INITIATIVE COMMITTEE www.nici.nat.gov.tw

Cisco Systems is collaborating with Taiwan's National Information and Communications Initiative Committee (NICI) on a key research and development initiative in support of Taiwan's migration to Internet Protocol version 6 (IPv6), the advanced networking standard.

NICI, a government-backed standards and technology promoter, is establishing a national standards laboratory for testing IPv6-compatible products. Cisco will supply advanced networking equipment, technology solutions, and consulting expertise to help ensure that the testing environment meets international standards. The initiative is aimed at helping Taiwan's IT industry benefit from the global market for IPv6-compatible products.

IPv6 represents an advancement over the current IPv4, which may soon face limitations as the number of available IP addresses is depleted. IPv6 allows for a much greater number of addresses and is actively supported by companies and governments in Asia.

"Taiwan is a major production hub for computing and networking products. A key factor in its ongoing success will rest on whether its IT products can meet the international IPv6 standard or not," says Larry Chai, general manager of Cisco Systems Taiwan. "By working closely with NICI, Cisco is demonstrating its commitment to the Taiwan market by sharing our long-term experience on developing IPv6-related networking equipment."

Additionally, the NICI IPv6 laboratory will help promote IPv6 applications and implement IPv6 network backbones in Taiwan.

The overall goal is to progressively transform Taiwan's Internet networks from an IPv4 to an IPv6 environment.

DEFINED

DWDM \ Dense wavelength division multiplexing employs multiple light wavelengths to transmit signals over a single optical fiber. DWDM is a crucial component of optical networks because it maximizes the use of installed fiber cable and allows users to quickly and easily provision new services.

SAN \ A storage-area network is a high-speed special-purpose network (or subnetwork) that connects different kinds of data storage devices and servers on behalf of a larger network of users. Typically, a SAN is part of the overall network of computing resources for an enterprise.



storage.

"With optics, data travels at essentially the speed of light, so there is virtually no delay," says Ashwood. "That's a critical benefit when you are seeking to mirror data in real time at a back-up site."

To handle the additional high-bandwidth requirements of Visa's disaster-tolerant SAN, Cisco deployed an innovative technology known as dense wavelength division multiplexing (DWDM). It allows more traffic—up to 320 gigabits per second, or the equivalent of 32 high-speed Ethernet networks—to travel over a single fiber-optic connection by using different light wavelengths to transmit the signals.

But there was a catch: DWDM technology was not tested or certified at the distance of approximately 70 miles that existed between two of Visa's three sites. Visa also expressed concerns that it would be difficult to run both SAN and LAN traffic over the same network. HP and Cisco were confident the solution would work, however. Together, the two companies ran beta solutions for several months before showing Visa the possibilities. "We took Visa to one of HP's storage labs in Holland and demonstrated the Cisco DWDM devices running over a very large roll of fiber," says Ashwood. "We proved that it could be used over greater distances than had been previously calculated." Visa monitored the testing and became convinced that the optical network could operate without degradation over the distance between sites, according to Damp. As a result of the implementation, Visa reduced the time required to restore network data dramatically.

"Under our former data-recovery system, it would have taken us 11 days to restore all data—now we have it down to less than four hours," says Damp.

Quick Move

The actual physical move of the Visa headquarters took place over two weekends in early 2003 without problems, and Cisco and HP remained on site at the new facility to provide management and IT consulting expertise.

"The move was transparent for end users," says Damp. "All services were up and running from day one when the first person walked in and switched everything on."

The project also enabled Visa to make fundamental changes to its technology infrastructure. In particular, Visa consolidated 300 previously dispersed and departmental servers down to 40, according to Damp.

"This solution provided a true end-to-end solution for data and storage, providing Visa with design delivery, deployment, integration, management, and ongoing support," says Ashwood. "The solution gives Visa the business advantage of unparalleled scalability and flexibility, enabling the company to spread its people over a wider distance."

"My advice for companies considering similar solutions is to explore all options," says Damp, "and choose your partners carefully."

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A REGULAR CONTRIBUTOR TO IQ MAGAZINE, ERIC J. ADAMS WRITES ABOUT BUSINESS TRENDS AND SOLUTIONS FOR MULTIPLE PUBLICATIONS.

NEXT STEPS

To learn more about storage-area networking solutions from Cisco, go to cisco.com/go/storagesolutions.

For more information about business-continuity services from HP, visit hp.com/hps/continuity.



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