

Network Cost of Ownership:
Benefits of Vendor Standardization
Healthcare Case Studies

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220 North Main Street, Suite 203

Natick, MA 01760

508.655.5400

www.sageresearch.com

Case Studies

To expand on the findings of the enterprise survey, Sage Research conducted 10 in-depth phone interviews with select survey respondents. All 10 interviewees had already qualified for and completed the survey. Sage selected two interviewees from each of five industry verticals:

- 1) Finance
- 2) Healthcare
- 3) Manufacturing
- 4) Public Sector
- 5) Retail

Within each of these verticals, Sage recruited one participant that had a “Primary Vendor” network environment and another that had a “Multi-vendor” network. Beyond these specifications, Sage attempted to recruit IT executives from companies that have already deployed several advanced technologies on their core network. The primary objective of these case studies is to demonstrate different companies’ experiences deploying advanced technologies onto their core network using different approaches to network evolution.

Healthcare Case Study #1 (Primary Vendor)

Background and Network Approach

A large, U.S.-based healthcare organization standardizes on Cisco as its primary network vendor. The organization has 40 hospitals in five U.S. states and in Mexico, and an operating revenue of \$2.3 billion last year.

Exhibit 1: Healthcare Case Study #1 Snapshot

Industry Vertical	Healthcare
Company Size	Approximately 15,000 employees
Network Strategy	Primary vendor network (standardize on Cisco)
Top Benefits	<p>Common operating system (IOS), bulk discounts, faster time to resolution, less training time</p> <ul style="list-style-type: none"> • Saves 40 staff-hours per year on firewall training alone by using their primary vendor for this technology
Current Concerns	Other vendors may have new technology developments to market faster in specific product categories

The company's main criterion for selecting a primary vendor was the quality of technical support that vendor could offer. They were also looking for vendors that were financially stable and would be around in the long-term to support the products they sold them. Additionally, the company evaluated the stability and reliability of the vendor's products. Taking these criteria into account, the IT department decided to standardize on Cisco as its primary vendor.

Key Findings

By standardizing on a "primary vendor" across its network, the company has realized multiple benefits:

- (1) Common operating system: Cisco's IOS, or some variation of it, runs every piece of equipment in the company's network. This creates a very stable software environment that helps minimize downtime and lets the staff quickly identify and patch any software bugs.
- (2) Bulk discounts: The company saves significant money by purchasing its networking infrastructure all from one vendor.
- (3) Faster time to resolution: By having a single account manager for all networking infrastructure, there is no finger pointing among various vendors when problems

arise. The primary vendor knows that it is the sole source for technical support, and it has a solid understanding of all components of the network which makes problem diagnosis more efficient. Limiting the number of equipment models in the network lets the company's internal IT staff take a more proactive approach to problem diagnosis as well.

- (4) Less training time: The healthcare organization has limited IT staff with respect to the size of the network. Standardizing on a primary vendor has allowed them to realize time and cost savings by building on a common foundation of knowledge. This has been extremely beneficial as the organization has deployed new technologies onto its core network. The time required to install, configure, and train staff to support this new equipment is much less than it would be using different vendors. *The IT Director estimates that they save at least 40 hours per year in training for firewalls alone because they use their primary network vendor for this.*
- (5) Efficient sparing: With a primary vendor network, the healthcare organization is able to manage its network hardware spare parts extremely effectively. The company standardizes not only on a primary vendor but also on a select few models within any given equipment category. In LAN switching, for instance, the vendor only has four Cisco LAN switch models. This allows them to have additional modules for chassis-based switches that can be added or used to replace existing modules at a moment's notice in any of their switching gear. It also makes memory upgrades easier.

The organization has found that advantages of maintaining a primary vendor network grow in importance as their network becomes more complex. Adding new, emerging technologies to the core network can be a stressful and complicated experience, but by maintaining a primary vendor for the majority of these new technologies the organization has minimized the time and cost of these projects as well as their ongoing cost of ownership.

Adding New Technologies to the Core Network

Wireless LAN

The organization uses 500 Cisco Aironet access points for its wireless LAN (WLAN) infrastructure. They use these WLANs for mobile access to patient records, billing, order information, and emails. The main advantage the company has realized by using its primary network vendor for the WLAN deployment was shorter training time. The IT staff has a very short learning curve for configuring, managing, and upgrading the new WLAN infrastructure, because the software interface had the same look and feel as everything else on the network (IOS). The organization had budgeted \$500,000 for this project, but spent less on it than they expected largely due to the rapid training time.

Additionally, Cisco's in-line power supply for its WLAN access points has had a significant impact on both the initial deployment costs and the ongoing operational costs of the infrastructure compared to what it would have been with other vendors. It allowed them to avoid having to run additional power supply into the ceiling grid, which makes the deployment of WLAN access points faster and less costly. *The IT Director estimates that each new electrical drop into the ceiling grid would have cost them approximately \$200, making for a total savings of \$100,000 across the whole WLAN deployment.*

Now that the system is operational, Aironet's ability to copy the configuration from one central WLAN access point to all others saves them much staff time for upgrades, software patches, and security changes. Being able to copy the configuration from one central access point to another 100 automatically is essential to keeping the operational expenditures associated with the system under control.

Finally, the organization has realized synergies in the security of its wired and wireless networking gear by standardizing on a primary vendor. Cisco's Aironet access points authenticate users coming on to the network against the same Windows 2000 active directory.

VoIP

The company uses several Cisco VoIP gateways to carry traditional voice traffic over the IP backbone among its 40 major site locations. It originally installed these gateways two and a half years ago, and reports that the system integrates extremely well with the rest of the WAN network. Specifically, integrating the new VoIP traffic with the WAN network's QoS configurations was seamless. Since the original deployment, they have been able to re-configure and modify the QoS settings for the VoIP traffic easily.

IP PBX

For IP PBX, the company selected a hybrid system from Avaya because Avaya was their main PBX vendor at the time, it had a long history in voice technology, and it had a strong call center solution. All of the company's telecom engineers were more familiar with the Avaya interface and operating system, which presented training and staff synergies from the telecom side of the organization. This was an easy way for them to converge the network without their telecom engineers having to learn too much about IP.

There was a trade-off to using their primary telecom vendor instead of their primary networking vendor, however. During the deployment, there was a lot of vendor finger pointing about which network element was the source of any given problem. The Avaya representatives would often believe a problem was being caused by a network component, while it was usually a PBX configuration issue, according to the organization's IT Director. The Director also reports that the vendor engineers involved on the project did not have a firm understanding of IP and did not know how to fill in

certain blanks. Additionally, the healthcare organization had to dedicate a project manager to resolve some of the Quality of Service (QoS) issues, which would likely not have been the case had they been doing the deployment with their primary networking vendor.

Firewalls

The organization realizes numerous benefits by using its primary network vendor for its security infrastructure (Intrusion Detection Systems and firewalls). The main benefit is reduced training time. There are two IT staff that manage the organization's firewalls, and both of them are Cisco-certified on a variety of different technologies. Their collective familiarity with the Cisco IOS operating system and Cisco products in general makes it very easy for them to stay up to date with new developments in firewall technologies. *The IT Director estimates that the organization saves at least 40 staff hours per year on lower training effort alone.* On average, their IT staff can configure a Cisco PIX firewall and have it running on the network in a matter of minutes. The Director also reports that the level of support they get from Cisco for firewall management is better than what they could get anywhere else because they are using their same primary network vendor for everything.

IDS

Additionally, using Cisco gear for the organization's Intrusion Detection Systems (IDS) allows them to seamlessly log on to the Cisco firewalls to update them in real-time when an attack has been detected. The integration features of these two complementary products help the IT Department react quickly and flexibly to new security threats as they emerge. Installing the Cisco IDS is extremely easy as well: they simply plug it into the same rack as the chassis-based LAN switch and set up a port for it on this switch. With other vendors, the organization reports, they would have to buy all the appropriate software for the system, configure it to meet their network specifications, and find extra floor space in the data center because it would not fit in as a module to their Cisco LAN switch.

Conclusion

The healthcare's organization policy of standardizing on a primary network vendor affords them a level of technical support and training synergies that they simply could not get if they took a "best-of-breed" approach to network development. This corporate policy has been a crucial factor in helping them grow their network to accommodate emerging technologies as the need arises.

Healthcare Case Study #2 (Multi-vendor)

Background and Network Approach

A leading provider of hospice services in the U.S. has a multi-vendor network with a “best-of-breed” development strategy. Within each technology area, however, the company has a primary vendor. The company has nearly 40 hospice programs in the U.S. that service approximately 4,000 patients in 14 states.

Exhibit 2: Healthcare Case Study #2 Snapshot

Industry Vertical	Healthcare
Company Size	1,000 employees
Network Strategy	Multi-vendor network but with a primary vendor for each technology area
Top Benefits	Select the solution with the best price/performance for each area of the network. Not beholden to any one vendor’s technology.
Current Concerns	<p>More difficult to resolve problems due to vendor finger pointing. Training synergies limited to specific technology areas</p> <ul style="list-style-type: none"> Spends \$25,000 per year (\$25/employee; \$8,000 on each IT staff member) on training

When selecting a primary vendor for a technology category, the company looks primarily for the price/performance of its solutions compared with competitors and for the quality of support that the vendor can offer. “I don’t care if it’s the biggest company in the world, if I can’t find the right person when I need them, it’s useless to me,” the VP of Information Technology explains.

Key Findings

Although there are a variety of different brands in the network, the company is standardizing on a primary vendor within each technology category.

Exhibit 3: Healthcare Case Study #2 Primary Vendor by Category

Routers	Cisco
LAN Switches	Hewlett Packard
Firewalls	NetScreen
IP PBX and Telephony	Nortel

For instance, it is currently standardizing on NetScreen for firewalls because of their products' ease-of-use and the level of technical support they've experienced from the vendor. Having a single vendor for firewalls is already making firewall management more effective at their organization.

Currently, each IT staff member is a specialist in a particular brand. For example, there is one member of the team that is a specialist in Hewlett Packard products, another that specializes in both Nortel's PBX and IP PBX solutions, and another member that specializes in Cisco router products. Once the firewall consolidation is complete, one of the staff members will be able to concentrate on being up-to-date with NetScreen certification, which should improve their network security level in general and make for faster firewall deployments at new site locations.

By standardizing on a single vendor within each technology area, the company has realized training efficiencies. Each staff member builds on the product knowledge and certification that they have to stay current with the latest developments and management techniques. Nonetheless, the VP reports that his department spends approximately \$25,000 per year *out-of-pocket* on staff training, which is over \$8,000 per IT employee (there are three full-time networking employees).

Adding New Technologies to the Core Network

As the network grows in complexity with an ever-increasing scope of diverse technologies, the number of vendors that the company's small technical staff manages will grow as well. Managing an increasing number of technologies in addition to an increasing number of vendors is bound to strain the department's resources at some point. This is one of the reasons the company is trying to standardize on a single vendor within each product category.

Another reason for standardizing within product categories is to keep problem resolution as quick and efficient as possible. The greater the number of vendors, the higher the probability of finger pointing when there are problems with the network. The VP of IT says that having different vendors provide different technologies has, in fact, led to some finger pointing when problems occur, but that this has been minimal to date. The vendors they use are, for the most part, so ubiquitous that engineers from other vendors will usually be familiar enough with the systems to know how to resolve most issues. During the initial deployment of the Nortel Business Communications Manager (BCM) IP PBX systems, for instance, the Nortel engineers already knew what most of the compatibility and integration issues were between the BCM product and Cisco routers.

Conclusion

Taking a best-of-breed approach to network planning has afforded the company the flexibility they've needed to grow rapidly with the company while searching for the best

price/performance solution for each situation. The company and its network are still fairly young, however (established in 1995), and the IT department is currently consolidating the number of vendors it uses in the network in order to realize training synergies and minimize compatibility issues.