

Network Cost of Ownership:
Benefits of Vendor Standardization
Manufacturing 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.

Manufacturing Case Study #1 (Primary Vendor)

Background and Network Approach

A large pharmaceutical manufacturing company (approximately 10,000 employees) standardizes on Cisco for the majority of its networking gear. It has taken this approach for some time now because it values the technical support and training synergies it gets across product lines from a large, stable vendor that knows its entire network.

Exhibit 1: Manufacturing Case Study #1 Snapshot

Industry Vertical	Manufacturing
Company Size	Approximately 10,000 employees
Network Strategy	Primary vendor network (standardize on Cisco)
Top Benefits	<p>Technical support, training synergies, less downtime, interoperability, faster deployment of new technologies</p> <ul style="list-style-type: none"> • Saves up to 30% of staff time required to deploy new technologies on the network • Experiences 90% less downtime with a primary vendor network • Installation time of IP PBX in a new building cut in half
Current Concerns	Start-up vendors may give deeper price discounts than their primary vendor does for specific deployments because they are trying to break into the market

Key Findings

By taking a “primary vendor” approach to its network evolution, the manufacturing firm has realized multiple benefits:

- (1) Less training time and expense: According to the IT Director, the difference in staff training time when maintaining a primary vendor vs. doing a “best-of-breed” approach is most noticeable when adding new technologies to the core network. *“When we’re deploying VoIP or any other new technology, we save at least 20-30% of the staff time it would take us in trying to do a deployment with a different vendor.”* The bulk of these staff-time savings, says the IT Director, come from having a single point of contact for training and for problem resolution. Additionally, the company is more confident that their primary vendor is going to find a resolution to any problems that arise than they would be with a start-up

- vendor because the primary vendor manufactured and installed both the core network and the new technology.
- (2) Superior technical support: When you deploy a new technology using a bigger vendor like Cisco, the company reports, there are a lot more training materials available on the Web, in seminars, and from other companies' experiences (user groups). "Whatever situation you run into, there's almost always another Cisco customer that has already encountered this, so the technical support staff can usually diagnose and resolve any problem quickly." In a multi-vendor environment, the company has found that it spends a lot of its own staff time trying to isolate where the problem is coming from and which vendor it needs to contact to fix it.
 - (3) Interoperability: The main interoperability advantage the company realizes by using a primary vendor throughout its network is the lack of finger pointing between vendors when there are problems that need to be resolved. It takes much longer to isolate and fix a problem in a multi-vendor network than when there's only one vendor and they know from the start that they are the ones that must fix it.
 - (4) Less downtime: By standardizing on a primary vendor, the company has experienced fewer incidences of downtime than it did when it had a much more heterogeneous network, and much faster resolution of problems when they do occur. In terms of the incidence of frequencies, what they currently experience with a primary vendor network during the course of a year is typical of what they experienced during the course of a month before they standardized on a single vendor. In other words, *the company has realized a reduction of more than 90% in their network downtime incidences since standardizing on a primary network vendor*. Regarding the faster resolution time when incidences do occur, the company's IT Director explains: "Most of the problems we run into have already been identified by other users and are being worked on by the time we contact Cisco." *On a per incidence basis, their time to discover the source of a problem is now typically a matter of hours, whereas previously it could often be days*.
 - (5) Sparing: The company has found that, by dealing with a primary vendor, there is a certain amount of cross-over in spare parts across different network elements. The company not only standardizes on a single vendor, it also tries to minimize the number of different models it uses from a vendor. Within certain model categories, there is significant commonality in spare parts. This is another factor that helps reduce the mean time to resolution (see "less downtime" above).

The main **disadvantage** to maintaining a primary vendor across their entire network, according to the IT Director, is that the company does not always get the same price

breaks they would from a smaller, start-up vendor that's trying to establish a foothold in the market. The advantages of a primary vendor network mentioned previously, however, far outweigh any specific price discounts the vendor could get on a per-project basis. Particularly with emerging technologies, the manufacturer does not want to be a guinea pig if there is not a large partner supporting it that understands the rest of their network.

Adding New Technologies to the Core Network

IP PBX

The manufacturing firm has deployed all Cisco IP PBX systems to date, starting last year with five call managers servicing 450 employees. In the next 12 months they will be deploying an additional eight call managers to service another 500 employees. In making the original IP PBX decision, they seriously evaluated both Avaya and Cisco. Although their traditional PBX telecom infrastructure was all from Lucent, they decided to deploy Cisco primarily because its system's features performed better in the testing lab and they felt Cisco was more financially stable for the long-term.

Although the company did not originally evaluate Cisco based on expected synergies with its existing data network, it has found that using its primary network vendor for the IP PBX deployment has made the Quality of Service (QoS) design of the combined network extremely efficient. Having the same vendor supply the QoS features for their data, voice, and video networking means that the compatibility issues in the converged network have already been resolved.

Another advantage the manufacturing firm has realized is faster deployment times for new office buildings. *The IT Director reports that the installation time for voice and data networks in a brand new building has been cut in half compared to previously.* This is primarily because they only have to install one, converged network and deal with one consultant for configuration instead of working with separate systems and integrators for the voice and data networks.

The real advantage of having a primary-vendor IP PBX system, however, is when employees move between buildings. Earlier in the year, the management decided to relocate 300 of the 450 employees in the office building where the initial IP PBX deployment was to another building in the same metropolitan area. They established one networking link from the new building to the old building through which those 300 employees could remotely access the IP PBX call managers and the same LAN network, keeping their same phone numbers. *The IT Director estimates that, once a call manager is deployed, his company can do moves, adds, and changes in roughly a fifth of the time it took with its conventional, non-primary vendor PBX.*

Finally, the company has realized savings in floor space at remote offices because they can use a call manager at the headquarters instead of having their own system hosted

locally. When setting up the IP PBX networks at new, remote locations, they can fit all the hardware into a single chassis.

Wireless LAN

The company also uses Cisco for its wireless LAN (WLAN) infrastructure, which allows it to use an integrated security infrastructure for wired and wireless access to the LAN. By using the same vendor for all aspects of its network, employees now have the same PKI certificates for WLAN access as they do for remote dial-in (VPN). It is all centrally managed by a Cisco ACS server. The system was virtually plug-and-play from Cisco, whereas they would have had to build it themselves using any other WLAN vendor. This was the primary deciding factor in going with Cisco for their WLAN access points. *The IT Director estimates that the WLAN deployment (including security configuration) would have taken his company twice as long with any another vendor and cost them more in consulting fees.* The company also received volume discounts from Cisco for the wireless LAN infrastructure because they buy all core networking hardware from the same vendor.

Using the Cisco WLAN infrastructure has impacted their ongoing cost of ownership for this gear as well. When the company evaluated various vendors, they found that Cisco had additional management facilities that let them deploy, upgrade, and move access points much more quickly. Cisco's Aironet IOS system allows them to build configuration templates that they can then apply to all other wireless access points. With the current system, it takes the IT staff approximately one hour to upgrade 100 access points. Using another system that does not all for automatic application of an upgrade across the network would take their IT staff 15 minutes per access point (25 hours for 100 access points). This 96% savings in staff time for network-wide wireless LAN upgrades increases the greater the number of access points a company has in the network.

Conclusion

The benefits of maintaining a primary vendor network have accrued and built over time for the manufacturing firm. Their IT staff that have been trained on Cisco technology for many years keep adding on to that foundation of knowledge as new products and new technologies are deployed throughout the network. "When it comes to learning newer technologies, having that framework to build upon has been one of the more important paybacks for us," according to the IT Director. As the pace of technological innovation intensifies, the company expects to continue reaping dividends from its earlier decision to standardize its network on a primary vendor.

Manufacturing Case Study #2 (Multi-vendor)

Background and Network Approach

A California-based manufacturer of ceramic chip capacitors takes a “best of breed” approach to its enterprise network development. The company has its corporate headquarters and two manufacturing facilities in California, a manufacturing plant in upstate New York, and overseas locations in Hong Kong and Taiwan.

Exhibit 2: Manufacturing Case Study #2 Snapshot

Industry Vertical	Manufacturing
Company Size	5,000 employees
Network Strategy	Multi-vendor network
Top Benefits	Competitive pricing, maintain state-of-the-art technology
Current Concerns	Compatibility issues, extra training time <ul style="list-style-type: none"> Spends 15% (\$75,000) of its total annual IT budget on staff training

The main reasons for taking the best-of-breed approach, according to the company’s IT Director, is to ensure that they always have the best technology available in their network, which in turn helps them maintain a competitive advantage in the extremely cut-throat high-tech manufacturing sector. As the IT Director explains, “We keep the corporate infrastructure on the cutting edge. We have the appearance that we are with the times, so we are a company you want to do business with.”

Key Findings

Although the company maintains a multi-vendor enterprise network, through trial and error it has consolidated down to one primary vendor for each major technology category in its network.

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

Routers	Cisco
LAN Switches	3Com
Firewalls	Dell
Wireless LAN	Cisco
IP PBX	Avaya

Once the company believes it has found the “best-of-breed” in a given category, it attempts to standardize on that brand across the globe. It is corporate policy, however, to constantly review the current vendor of choice and, occasionally, to swap it out for an entirely different system when they feel it is necessary. The company feels that the quality of each vendor’s products changes over time, so what’s best-of-breed today may not be best-of-breed 18 months from now.

The disadvantage of maintaining a best-of-breed approach to network planning, says the company’s IT Director, is that they are constantly having to retrain their staff: “I wish I could standardize on a single vendor—it would make my job easier.” *The company spends nearly 15% (\$75,000) of its \$500,000 annual IT and networking budget on training and re-training staff on new products and technologies.* This is well above the norm, which is typically in the range of 2-3% of a company’s total IT/Networking budget.

Adding New Technologies to the Core Network

The vendor swapping mentioned above often occurs when it is time for a major technology change regardless. As the company’s network technology evolves, the mix of vendors evolves with it.

IP PBX

The manufacturer is currently deploying an IP-enabled PBX system from Avaya because its lease on its previous, traditional PBX system just expired. The IT Director makes it a point to swap out the company’s phone systems every 2-3 years to renegotiate the contract: “We review our current needs at the time of the lease renewal. If the vendor I’m currently using doesn’t give me the things I need, we’ll switch.” As a general rule of thumb, the company’s goal is to get at least a 20% reduction in price compared with its previous lease, with better system features and functionality.

While the IT Department’s philosophy is to maintain complete flexibility in its network, one of the reasons it is deploying an IP PBX system from Avaya is that it will work with the traditional Lucent analogue phones that are already in the network. “All else equal, I would like to keep the same vendor. I’m hoping that the new system will be similar to the old system so our training costs will be lower,” the IT Director explains.

Wireless LAN

The manufacturing firm’s recently deployed wireless LANs (WLANs) also enjoyed synergies with the core network infrastructure. It selected Cisco as the sole supplier for the access points primarily because the IT department felt that Cisco’s Aironet product line was best-in-class for wireless LAN systems. They had positive referral both from their network service providers and from a third-party value-added reseller (VAR).

The fact that Cisco was their primary vendor for their router infrastructure throughout the network has proved an added benefit to this selection. The IOS software used on their Cisco routers is very similar to the wireless IOS used on the Aironet, and the system integrated seamlessly with the rest of their network. The deployment took a total of four weeks, from conception to installation, and they have not had any problems with it since. It took the IT staff one week to come up to speed on the necessary monitoring and maintenance for the new systems.

Conclusion

The manufacturing company maintains a best-of-breed philosophy to its network evolution, but in practice it has standardized on a primary vendor within each technology category. All else equal, would like to keep the same vendor when upgrading part of its network. If its current vendor can not meet the company's technical requirements at the time of the upgrade, however, it will incur the additional training and integration costs of switching vendors in order to keep its network at the cutting edge of technology.