Building a robust infrastructure for a distributed multi-site chain

Here’s the challenge: You are the IT manager at a growing retail operation and the CEO has just announced plans to expand to 12 more locations by the end of the year and bring 12 existing franchise operations under corporate control. The new locations as well as the existing franchise stores are small but need identical network solution capabilities.
Corporate management will be deciding on potential sales items and digital merchandising displays on an ongoing basis for each store and for the company as a whole, so in addition to IP surveillance and secure credit card transactions, the network needs to deliver sales data and accept new digital promotional material at the end of each day. Wireless connectivity is a must to support POS without running cable. The IT budget for this expansion is tight and there will be no opportunity to hire local IT staff at any of the stores. Finally, the logistics for the deployment is complicated, particularly for the existing stores being networked for the first time, because everything will have to be installed overnight and be fully operational when the store opens the next morning.

While this may sound like an imposing project, the tasks described in this set-up are among those faced routinely by decision-makers involved in managing IT operations for distributed multi-site chains. It is not unusual to be asked to deliver a robust, fully featured, centrally managed network infrastructure for a number of locations with a limited budget and a small team of IT staff, none onsite. If you are an IT professional tasked with this challenge, these are probably among your chief concerns:

1. How to ensure continuous connectivity. For IT professionals in the retail world, any downtime means lost revenue. Therefore, no amount of downtime is acceptable.

2. How to compete in a market that’s in a downturn yet still requires state-of-the-art technology solutions. Customers may be spending less, but they are demanding more. There are plenty of places to shop online, so there has to be value in the experience of being present at a physical location.

3. How to deliver all of the various services required – connectivity, security, PCI compliance, IP surveillance, remote management and wireless connectivity – when IT budgets are generally tight and high levels of performance are demanded.

4. How to get new locations up and running quickly and efficiently while maintaining consistency from one location to the next. Then, when the locations are up and running, how to ensure that all the network activities at the remote locations are managed and captured by central IT operations.

The value of a single-vendor solution

There are many ways to approach these challenges, but only one ensures that your organisation will be able to closely manage costs while delivering a high-performance network infrastructure with a scalable rollout process that is quick, repeatable and easy to deploy. When you examine best practices for planning and building a network infrastructure for a distributed multi-site chain, you will come to realise that your organisation will be best served by turning to an integrated single-vendor solution. Ideally this single-solution provider will have a broad product line as well as a wide breadth of experience in delivering connectivity solutions for retail customers. There are significant benefits in deploying a single-vendor solution, particularly if the vendor is able to deliver all of the critical components of the network pre-configured to make the onsite installation effort simple. Among the main benefits are:

**Cost management /ROI:** Utilising one vendor for the entire infrastructure enables the customer to save money by buying in volume and to manage the entire operation though a single platform. Managing the entire infrastructure through a central platform makes it more cost-efficient to roll out new stores and new applications. It also reduces costs involved in maintenance and repair, all of which contribute to an improved ROI.
**Speed and consistency:** With one vendor it is easy to establish a repeatable rollout process that is consistent from location to location. This means equipment, such as switches and servers, can be configured centrally and deployed locally when new locations come on line. Having a repeatable process for rolling out locations makes it simpler and less expensive to train users at each location, which also contributes to an improved ROI.

**Security:** By using a single vendor it is easier to maintain a secure environment, end-to-end, managed centrally. A single vendor with a unified management solution enables standard configurations and consistency in access control, the appropriate VPN hierarchy, and no worries about wireless networks being a weak link. A single vendor also can ensure that all security updates are rolled out consistently and at the same time to all locations.

**Support:** The more vendors you bring into the solution, the more opportunities you have for conflict. Training is simple when it comes from one vendor, difficult and often contradictory when it comes from two. The other big issue with a multi-vendor solution in this type of complex IT environment is the finger-pointing that often accompanies problems. Even vendors known for excellent interoperability can be more responsive when the gear is all their own.

The benefits of successful deployment of a distributed network are clear. Business continuity is absolutely critical in the retail space: Downtime not only costs money, it damages a company’s brand and hurts employee morale.

Features such as IP surveillance can also boost morale by reducing theft, improving performance of local stores and providing an additional level of motivation for workers who know they are possibly being viewed on camera. Having IP surveillance at local stores can also reduce insurance costs.

And, for the IT organisation, perhaps the biggest benefit is the piece of mind that comes with having a safe, secure network that maintains connectivity between the central office and the various remote sites.

**What to look for in a vendor**

Of course, when it comes to delivering on a single-vendor solution, not all vendors are created equal. In the case of delivering solutions for a distributed multi-site chain, there are very few vendors that have the breadth of products as well as the experience in dealing with all of the challenges that may arise in rolling out new remote locations.

The first thing you should be looking for is a vendor with a comprehensive product line to satisfy the full requirements of your solution. This means a vendor with a range of network switching solutions; network storage; network security as well as IP surveillance capabilities at the local level; wireless networking and, in some cases, IP telephony as well. You also want a vendor that can manage connectivity, perhaps even supporting two Internet Service Providers (ISPs) for increased bandwidth from DSL and fail-over should one ISP go down.

At the central location, it will be important to have central management as well as central storage, most likely a storage-area network. If the local sites are reporting full market basket data and recording surveillance video, for example, you will have significant volumes of data to transmit and store centrally. Remote management will be critical, particularly if there is limited IT staff at the local level, because you will want to be able to deploy new applications quickly and centrally manage upgrades, repairs and security updates.
Choosing the right vendor

In today’s economic environment – particularly in retail, which has been hard hit by the recession – it is also important to choose a vendor that is focused on delivering high value at a reasonable cost. D-Link is one of the few vendors that has the breadth of product to scale from lower-end to high-end solutions for customers looking to build a robust, flexible network infrastructure for a distributed multi-site chain.

D-Link's single-vendor solution covers the full range of products required to build a highly secure network infrastructure featuring centralised management of remote operations. D-Link’s solutions for retail include:

- Firewalls, VPN routers and security gateways
- D-Link xStack switching solutions
- xStack Network Storage
- Wireless networking, including Unified Wireless Switching solutions and plenum-rated business-class access points
- Mobile office communications tools
- IP surveillance capabilities built on a wide range of network cameras and field-proven partner software specialised for retail environments

The benefits of choosing a single-vendor solution are significant: Reduced costs and improved ROI; the ability to roll out new deployments quickly and efficiently; speed to market; enhanced business continuity; better security and support; improved morale. The cost of the initiative? It certainly has to be delivered within constrained budget limits. The benefit of choosing the right single-vendor solution? Priceless.

For more information on the complete range of D-Link business solutions visit www.dlink.eu