Cost-effective Protection for Manufacturing Supply Chain

Lehmann & Voss deployed a Cisco storage area network to defend its mission-critical applications against downtime

EXECUTIVE SUMMARY

Customer Name:
Lehmann & Voss & Co. KG

Industry:
Manufacturing, chemicals, distribution

Location:
Hamburg, Germany

Number of Employees:
260

Business Challenge:
- To permanently safeguard the company's ability to supply its customers
- To reduce capital and operational costs through more efficient utilisation of resources

Network Solution:
- A Cisco optical solution connects the company's two computer centres in Hamburg and enables synchronous mirroring of business-critical databases
- A Cisco multi-site storage area network solution enables virtualisation of resources

Business Results:
- Cost-effective protection against downtime for mission-critical applications, resulting in improved customer service
- Reduced capital expenditure and management costs

Business Challenge

The privately-owned firm of Lehmann & Voss & Co. KG (LUV) has been marketing specialist chemical and mineral specialties for over 100 years. An international operator with over 260 employees, the company achieved a turnover of approximately €156 million in 2006. Since the early Nineties, LUV has expanded more heavily into the European market and, at the same time, has continued to enlarge its global procurement network, the latest development being the founding of a Chinese subsidiary in 2006. Today LUV, which is still a family-run business, has links to over 150 suppliers across four continents.

The company's current business model relies on a combination of external procurement and in-house production. Customers benefit from maximum availability of supplies because, to a certain extent, LUV offers a direct line to the world's procurement markets. However, what distinguishes this midsize company from its competitors in the chemical trading and distribution sector is its ability to provide bespoke materials and to produce additive preparations in-house at extremely short notice.

Efficiency and stability in the internal processing system are the cornerstone of an optimised value-creation chain that stretches from the supplier to the customer. LUV uses SAP software throughout its operation, for example, to ensure maximum process standardisation, while all depots and subsidiaries access the central applications server via a VPN and Citrix Metaframe. LUV attaches equal importance to the quality of communications, both in terms of improving collaboration within the company and also providing the best possible customer service.

LUV had already switched to IP Telephony by deploying a future-proof Cisco® Unified Communications solution in 2004. Since then all calls within and between sites have been running over a single network, based on Cisco routers and switches, that also handles data applications. "The greater the number of business-critical applications running on a common platform, the greater the challenge to guarantee high performance and unlimited availability at all times," comments Andreas Willenbockel, the project manager working on precisely this challenge.

> ## "We opted here for Coarse Wavelength-Division Multiplexing (CWDM) technology from Cisco because it is ideally suited for bridging geographically remote SAN islands,"
> **—Jörg Klein, Account Mananger for LUV, avodaq AG**

Network Solution

Until 2006, the company's two computer centres in Hamburg at its sites at Lake Alster and Wandsbek were only linked by redundant 2Mbps lines, which was "too little for a back-up process covering several locations", as Willenbockel confirms. This meant that couriers were used to physically carry back-up tapes between the sites, something which in itself posed substantial data security risks. "It was indispensable for us to have mirrored databases in computer centres at different sites, mainly as a preventive measure in the event of a disaster," adds Willenbockel.

LUV's management demanded that all critical corporate applications must be fully up and running within 24 hours, should one of the computers fail, with absolutely no question of any significant data loss. A further reason for increasing line capacity, according to Andreas Willenbockel, was the consolidation of storage media from all sites through a common Storage Area Network (SAN). The fact that the SAP systems are about to be switched to Unicode, which will also enable the software to display Chinese characters, will mean that capacity requirements are pushed up even further in the future.

To avoid dependence on any one provider's technology, LUV leased so-called dark fibre. This is optical fibre that is managed by the company itself using the line technology it chooses. "We opted here for Coarse Wavelength-Division Multiplexing (CWDM) technology from Cisco because it is ideally suited for bridging geographically remote SAN islands," explains Jörg Klein, avodaq AG's Account Manager for LUV. avodaq AG, a Cisco Certified Gold Partner, has for many years assisted LUV in all issues relating to networking innovations and technology.

Current SAN protocols are inherently designed only for short distances, as is the widespread Fibre Channel (FC) protocol. The Cisco CWDM solution, on the other hand, transmits several FC or gigabit Ethernet data streams in 1Gbps or 2Gbps channels via a single common-use optical fibre, and it does this easily across distances of over 50 kms. This means that each individual CWDM channel offers a thousand times more capacity than the 2Mbps

lines previously available between the computer centres. A further major benefit of this technology is that, as a logical continuation of the convergence concept, block-orientated storage access runs via one and the same fibre as IP Telephony and all server data. Should more capacity be required, additional transmission channels can easily be added.

> **"The flexibility of Cisco's CWDM, in conjunction with the VSAN capabilities of the Cisco MDS Series, provides us with a complete system. This means we can ensure a high level of availability for all business-critical applications in a particularly cost-effective manner."**
> — **Andreas Willenbockel, Project Manager, LUV**

Business Results

Server and storage capacities at LUV are now logically completely separate from one another. This means that application data is no longer stored on local hard drives attached to a specific server; it is all available centrally from a common SAN pool and all servers are equipped with redundant Cisco MDS 9000 Series Multilayer SAN Switches. Each of the computer centres has been fitted with two of these storage components, to which HP EVA 4000 mass storage systems have in turn been connected.

"A SAN like this is a pre-condition for an efficient data back-up system with synchronous mirrored storage via the new CWDM connection," explains Willenbockel. "It also means we are making considerably more efficient use of the resources available through virtualisation in the SAN and thus reducing future capital requirements. Moreover, since network and storage administration have been substantially standardised, the running costs for management will also be significantly reduced per gigabyte."

For LUV, one of the decisive factors in favour of this technology was the flexible and secure set-up of virtual SANs (VSANs) by logically segmenting the storage networks on the Cisco switches. Services can then be provided per VSAN which would normally only exist once in conventional environments. At the same time, the Cisco Inter-VSAN routing technology enables concurrent use of disk or tape systems from various VSANs.

"The flexibility of Cisco's CWDM, in conjunction with the VSAN capabilities of the Cisco MDS Series, provides us with a complete system," says Willenbockel. "This means we can ensure a high level of availability for all business-critical applications in a particularly cost-effective manner."

Ultimately, LUV has achieved a balance between an economically-viable general framework on the one hand and business continuity on the other, which means dependability and reliability of supply for the customer.

For More Information

To find out more about Cisco storage area networking solutions, visit www.cisco.com/go/manufacturing.

Product List

Routing and Switching

· MDS 9000 Series Multilayer SAN Switches

CISCO