

Dutch defense ministry improves IT service provision and cuts costs with Cisco data center technology



EXECUTIVE SUMMARY
CUSTOMER NAME · The DTO (Defence Telematics Organisation)
LOCATION · The Hague, The Netherlands
INDUSTRY · Central Government
COMPANY SIZE · 3200 employees
BUSINESS CHALLENGE · Increasing demand from customers for more data center resources · Data storage requirement increasing, sometimes a 100 percent a year · Reduce the cost of managing and delivering IT services
NETWORK SOLUTION · Cisco Service-Oriented Network Architecture (SONA) with a Cisco Data Center and Storage Area Network Solution
BUSINESS VALUE · Time to market for new services cut from weeks to days · Protects investment in existing legacy systems · Improves and maximizes the use of existing IT resources · Reduces the cost of IT resources and management operations · Enables different hardware and IT platforms to be integrated more effectively · Reduces data center cabling by more than 80 percent

The DTO (Defence Telematics Organisation) – the IT arm of the Dutch Ministry of Defense – is using Cisco Data center and Storage Area Network technologies to improve service provision, make maintenance operations more efficient and significantly reduce IT costs.

Business Challenge

The DTO (Defence Telematics Organisation) is the IT services agency for the Dutch Ministry of Defence (Dutch MoD). It provides a range of services predominately to the Dutch MoD, but also for other associated government departments such as the Justice Ministry and the Foreign Office. Customers also include the three Armed Services – Army, Navy and Air Force – for which the DTO provides support and logistics systems. The DTO delivers services like consultancy, connectivity, business and communications applications, workstation support and hosting from several locations around the Netherlands.

The DTO has more 55,000 customers, mainly Dutch MoD staff, across the Netherlands and around the world wide. Some of its customers are Dutch troops in war zones such as Afghanistan where the DTO provides communications systems, via secure satellite, so troops can email and phone home and access the Internet. The DTO delivers workstations services for the whole MoD and maintains all the MoD's networks. It also hosts several applications, from a central human resources management system for the MoD to logistic applications and databases for managing supplies like printer paper up to parts for F16 fighter jets.

The DTO was facing a huge increase in the amount of data it had to manage on behalf of its customers. In one year, data volumes increased by 100 percent. This growth was driven by demand on the DTO's services from existing customers and more international commitments around the world, and from expanding its services to new customers such as other government departments. In addition, the DTO is continually seeking ways to reduce costs for its customers by more efficient and effective use of technology innovation.

The DTO had also started to rationalize its IT infrastructure, centralising what were effectively departmental IT 'islands' and this has also had an impact on the volume of data the DTO has to manage and store. One of the challenges for DTO was that, because of legacy systems, it had to deal with a variety of different IT environments, including mainframe, Linux and Windows.

Network Solution

To help improve and streamline data management, the DTO has adopted the Cisco Service-Oriented Network Architecture (SONA), an architectural framework that enables organizations to maximize the value of their network services and resources. The Cisco SONA framework is helping the DTO to centralize management of all storage resources over a common, unified platform, increasing efficiency and protecting investments in existing network assets. The DTO has a Cisco Wide Area Network (WAN) which runs across the Dutch MoD's own dedicated fiber optic network and connects Cisco Local Areas Networks (LANs) at branch offices around the Netherlands.

The DTO is using a Cisco Data Center and Cisco Storage Area Network (SAN) solution to consolidate most of its data and applications, running on around 3000 servers, into three data centers in the Netherlands. The SAN data alone amounts to around 300 Terabytes which is growing rapidly. The DTO has also increased the bandwidth connectivity between its data centers with fiber channel dense wavelength-division multiplexing (DWDM) links. The Cisco SAN is deployed across the three data centers and has been used to consolidate around seven departmental Unix and Windows SANs which were previously separate and physically located in branch offices, but now reside in the data centers. The DTO is using Cisco SAN technologies to consolidate a further five SANs to complete the SAN integration. Part of the Cisco SAN solution at DTO includes using Cisco virtual SANs (VSANs) to help manage and integrate SANs more effectively. The DTO also uses Cisco network security products to protect the entire Cisco network infrastructure.



John Stroosnijder, ICT architect for the DTO, says that Cisco was selected because its products are simple and easy to use and manage, "Cisco products are great in terms of better management and with minimal effort we can achieve a lot. Cisco is really easy and with a few clicks our GUI products are up and running. I have quite a lot of experience and I've found that competitor products can take quite a long time to configure. Cisco is much easier to use and we are very happy with the Cisco solution."

The Cisco technology at the DTO has been implemented by HP, a Cisco Gold Certified Partner.

Business Results

As a result of deploying the Cisco SAN solution, the DTO has realized a number of business and customer service improvement benefits. The DTO has reduced the time it takes to provision computing resources to customers. It has also saved a considerable amount of money by protecting existing investment and has reduced the time and complexity required to manage data center resources. These benefits are key to enabling the DTO to reduce IT costs for its customers.

The DTO has used a Cisco SAN to consolidate virtually all of its 300TB of storage data into its data centers and create a single SAN out of discrete and disconnected departmental ones. This has delivered considerable cost savings because it has allowed the DTO to retain most of its existing hardware, applications and systems. The DTO has grown up with several legacy systems and legacy hardware which is hard to integrate, so with Cisco VSAN technology the DTO has created a virtual SAN which utilizes the existing capacity and resources of different hardware and IT environments, removing the need to invest in new hardware. The DTO also uses Cisco VSANs routing to migrate legacy systems to the main production SAN.

Stroosnijder says, “Cisco VSAN technology has been a huge benefit in enabling us to retain investment in legacy systems and yet still create a single SAN environment. It also means that smaller legacy environments benefit from the size and scale of the single SAN without incurring additional costs for extra switching equipment. We are going to make more use of Cisco VSANs

because we have a lot of smaller SANs that can be consolidated into the main production SAN and the Cisco technology migration far less complex.”

Another significant advantage of Cisco VSANs is the ability to support the DTO’s disaster recovery strategy, further reducing costs as well increasing data protection. The Cisco VSAN allows the DTO to physically separate hardware between data centers, but still provide users with a single virtual storage solution which delivers better performance to users.

Stroosnijder says, “By interconnecting sites using Cisco VSANs and VSAN routing you are able to keep environments separated, but still allow seamless data communication. This gives us a cost effective and very safe way of managing disaster recovery.”

The Cisco technology has enabled the DTO to dramatically reduce the time it takes to provide new

services to its customers from weeks to just a few days. It means the DTO avoids complex and expensive hardware configuration and reduces the amount of cabling required in its data centers. The DTO has designed its new server farm based upon servers with embedded Cisco switches and this design enables the DTO to deliver services much faster. For example, one rack with 48 blade servers would normally result in about 200 copper cables to connect the servers with LAN switches for IP connections and 96 fiber cables for SAN connections. With the blade versions of the Cisco LAN and SAN switches, the DTO only needs 36 fiber cables per rack with 48 servers, reduction of more than 80 percent. Products like Cisco blade switches can be quickly and easily configured into existing hardware making it fast and cost effective to roll out IT resources almost on demand.

Using the Cisco technology to consolidate storage data into a single SAN infrastructure enables the DTO to achieve economies of scale for support and management. It is now much easier, faster and more efficient to carry out many tasks such data security and rationalizing data back up, for example by archiving old data and only performing regular back up on active data.

“Using Cisco’s SAN solution is a considerable benefit to the DTO and is important in enabling us to deliver a better level of service to our customers. For instance, merging the SANs saved the DTO considerable time and money. Technologies like Cisco’s save money because we can develop and deploy solutions a lot faster and a lot simpler. Without Cisco, I think we would have had more problems. Cisco technology has allowed the DTO to consolidate several SAN islands without the usual need to buy more storage routing products and hardware which would have increased costs and increased the management load.”

John Stroosnijder, ICT Architect, DTO

Because the Cisco SAN design enables the DTO to share resources across the network infrastructure it is possible to carry out maintenance and support without interrupting services to customers. Stroosnijder says that during the SAN redesign and restructure there was no down time on its servers and much of this was due to the simplicity of the Cisco technology.

PRODUCT LIST

Routing and Switching

- Cisco Catalyst 6500 Series Switches
- Cisco Catalyst® Blade Switch 3020
- Cisco 12000 Series Routers
- Cisco 10700 Series Routers
- Cisco 2800 Series Integrated Services Routers
- Cisco CSS 11500 Series Content Services Switches

Storage Networking

- Cisco MDS 9100 Series Multilayer Fabric Switches
- Cisco MDS 9124e blade server SAN switching modules
- Cisco N-Port Virtualizer
- Cisco MDS 9500 Series Multilayer Directors

The DTO has a long-term strategy to develop its Cisco SAN solution further to accommodate the expected growth in customer demand which the DTO plans to manage using blade servers. To help deal with some of the challenges that can arise – a large increases in the number of domain IDs, increased server and network management complexity, and multi vendor interoperability – the DTO is using technologies such as the Cisco N-Port Virtualizer which reduces domain IDs as the number of domains increases to achieve fast and simple scalability.

Stroosnijder says, “Using Cisco’s SAN solution is a considerable benefit to the DTO and is important in enabling us to deliver a better level of service to our customers. For instance, merging the SANs saved the DTO considerable time and money. Technologies like Cisco’s save money because we can develop and deploy solutions a lot faster and a lot simpler. Without Cisco, I think we would have had more problems. Cisco technology has allowed the DTO to consolidate several SAN islands without the usual need to buy more storage routing products and hardware which would have increased costs and increased the management load.”



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