# WINNING LONG-DISTANCE STORAGE NETWORKING

## CENTRALISED MANAGEMENT ALSO PROVIDES INTERRUPTION-FREE BUSINESS AT A DISTANCE

**THE MPS GROUP OPERATIONAL CONSORTIUM, FORMED FROM VARIOUS ENTITIES OPERATING IN THE BANKING AND FINANCIAL SECTOR HAS EXPLOITED ICT TO OPTIMISE ITS DATA MANAGEMENT AND ENSURE SERVICE AVAILABILITY**

The choice of storage solutions capable of providing high-quality data archive services in terms of availability and performance is an essential factor in efficient management of events that could otherwise cause total or partial breaks in delivery of services. The MPS Group operational consortium has interpreted this now well-established trend, bringing together issues such as the centralised management of storage and business continuity into a single storage networking strategy, confirming once again its openness to technological innovation applied to the acheivement of competitive advantage for the MPS banking group.

The SAN (Storage Area Network) project, begun a few years ago, and now fully matured, has provided the chance to draw a huge quantity of data, housed on peripheral systems, into a centralised control system, comparable to mainframe systems.

The "storage networking" solution chosen uses Cisco Systems MDS 9000 multilayer switches, and a dual-level ("core-edge") architecture that interfaces the processors with the archive devices, using 2GB fibre channel technology. It uses Cisco Systems' VSAN (Virtual SAN) functions to separate traffic according to the type of data being transmitted. This reduces the number of machines necessary, consequently simplifying the whole architecture, from a management point of view, an inestimable advantage for larger companies.

A flexible, scalable solution has been implemented, by optimising the logistics of the Consortium's sites, and choosing Cisco systems solutions based on DWDM (Dense Wavelength Division Multiplexing) technology. This makes the fullest possible use of the infrastructure resources available at the two remote centres and fulfils the need for "operational continuity" of business-critical processes.

CONSORZIO OPERATIVO GRUPPO MPS

GRUPPO MPS

## DISTANCE NO OBJECT

**DESPITE THE DISTANCE BETWEEN THE TWO INTERCONNECTED CENTRES – 90 KM – HIGH-SPEED DATA TRANSMISSION MEANS THAT THE REMOTE PROCESSING OF DATA DOES NOT AFFECT THE PERFORMANCE OF THE STORAGE DEVICES**

The Consortium has two main centres where similar SAN solutions were developed, with comparable network infrastructure and storage devices. The two centres are around 90 km apart, a distance that is sufficient to guarantee high decorrelation of possible event disasters, while keeping propagation delays on signals within acceptable limits. This has meant that a normal storage networking solution may be developed for disaster recovery purposes, using a dedicated fibre link between the two centres, and DWDM technology. All servers in the Group's information system save data relating to the core business locally, via the SANs. Peer to peer remote synchronous copy facilities allow synchronous data copying at the other centre, using the fibre link provided by the IBM Enterprise Storage Server (ESS) sub-systems and the Cisco DWDM connection between the two centres.

A single state-of-the-art solution may therefore meet both the centralisation and back-up requirements for the data, replacing the critical data back-up procedures, which were often unco-ordinated. Different types of media were also no longer suitable for present needs, especially in the banking and financial sectors. In order to meet new typical reliability requirements for their sector, the Consortium had to move towards centralising data on identical devices, bringing together the different platforms, so that low level protocols could be used for remote access to data. It is now possible to move information to a remote centre on high speed channels (2.5Gbps). Despite the distance, the MPS group will thus have a fully duplicated database, once the project is completed, with a propagation response time overhead within one millisecond.

## UNLIMITED AVAILABILITY

**THE CONSORTIUM ALSO AIMS TO DEVELOP THE INFRASTRUCTURE FOR DAY-TO-DAY BUSINESS APPLICATIONS AND SERVICES BUT IT IS ONLY A SHORT STEP FROM STORAGE NETWORKING TO DISASTER RECOVERY**

The high reliability and resilience of the infrastructure makes it entirely suitable for the new operational risk concerns that recent international events have forced into the list of priorities for credit institutions. Having two mirror centres, at some distance apart, certainly puts the Group at risk of breaks in operation. Given the need to observe response time and recovery constraints for operations imposed on the institutions, the Consortium is in the process of developing an even more ambitious project, that will provide operational advantages both in the event of disasters, as well as for incidents with less serious effects, that could still cause problems delivering services.

The purpose is therefore to guarantee operational continuity, thus providing clients with significant functional guarantees, a vital contributing factor to the image of the company.

In the event of hazards posing a threat to service delivery, the infrastructure is potentially capable of improving, or even eliminating altogether, the downtime of many of the most important services. This has already been implemented for point of sale (POS) services, where operational continuity has significantly improved critical customer satisfaction levels in the retail sector, a benefit that is now gradually spreading into other areas of core business.

At the same time as the IT infrastructure is being improved, organisational solutions have to be studied, such as provision of alternative workstations for personnel, or activation and management of recovery phases, within a real disaster emergency plan where required. The use of a single information system, in place now for some time, for all the companies in the group, gives a tremendous advantage in this respect, ensuring that personnel are in place to handle the recovery phase. The geographical distribution of human resources, having a range of skills, not just in technology, has given the project even more of an edge.

## TRUE BENEFITS IN A VIRTUAL FUTURE

**SUSTAINS THE INSTINCT OF THE MPS CONSORTIUM AND CISCO SYSTEMS: WHILE THE LEADING NETWORK BUSINESS GUARANTEES SKILLS AND AVAILABILITY, THE TUSCAN CREDIT INSTITUTE PROVIDES AN UNMISSABLE OPPORTUNITY FOR APPLICATIONS EXPERIENCE IN COMPLEX, INTERESTING PROJECTS**

Given the size of the project, and the complexity of the infrastructure involved, the choice of Cisco Systems technology was vital. The choice of DWDM technology was determined by the need to interface the storage and TLC devices with the network linking the two centres. Each DWDM device can carry channels on a single fibre using a range of protocols such as FC, Ficon and IP. A single technology means that two geographically separate centres can be used as if they were a single local entity.

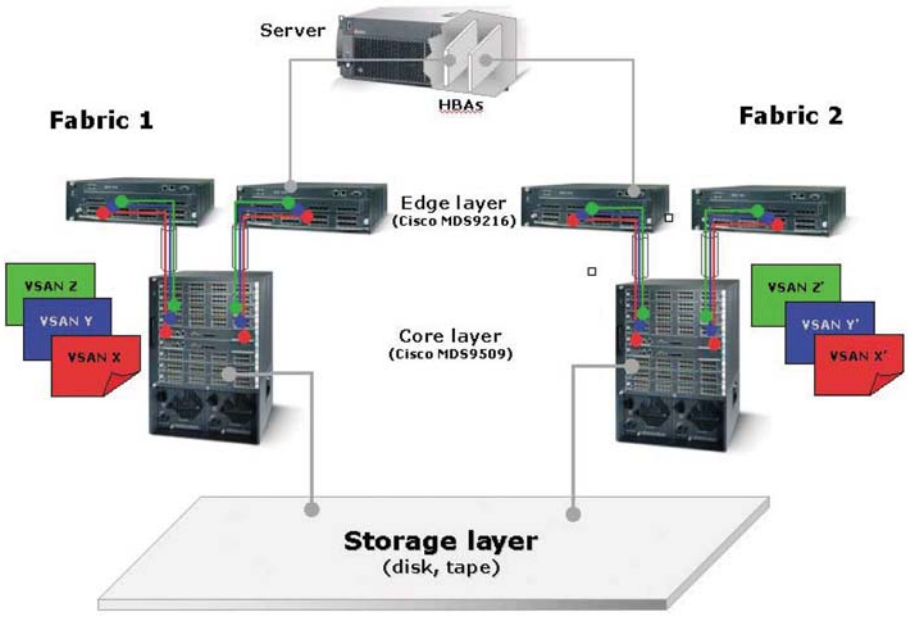
What was the basic reason for the choice?

Cisco Systems is a reference supplier for DWDM technology that is highly compatible with central IBM equipment, SANs and the intranet and network infrastructure.

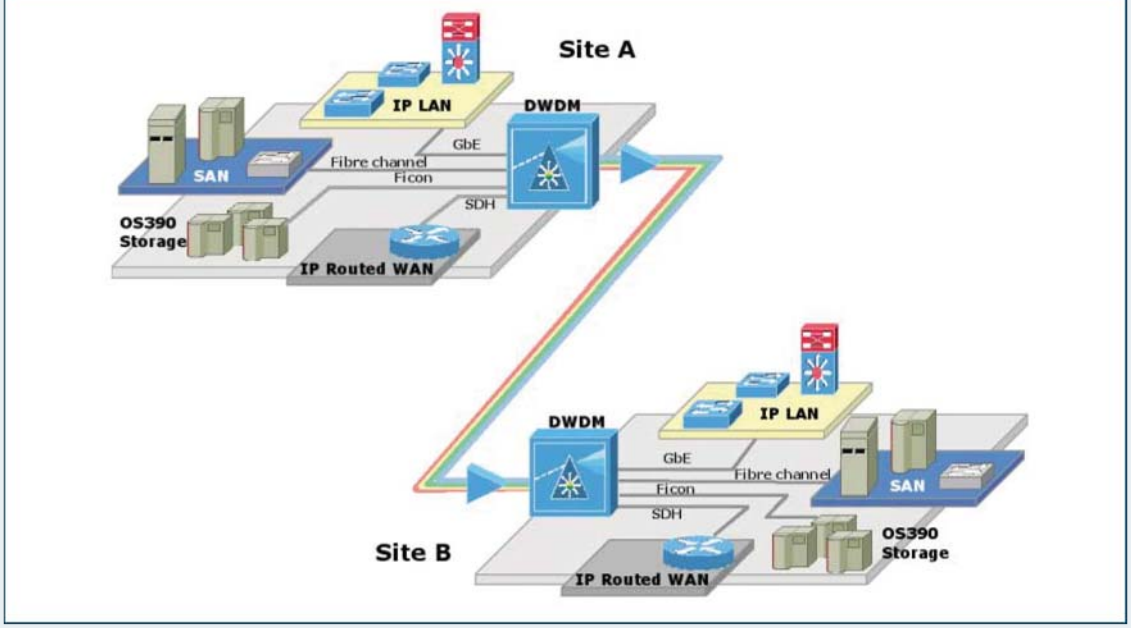
The Cisco devices have a high technological value: they provide excellence, with all the features necessary to meet current and future requirements.

The use of Cisco Systems technology has also been a growth factor, because of the partnerships formed with many of the leading players in the IT market, guaranteeing protection for investments and development into areas of high potential value, such as for example i-SCSI and virtual storage.

**SAN core-edge architecture**



## Connectivity between sites




## USEFUL LINKS

**Cisco Systems PowerNow**
http://www.cisco.com/it/powernow

**MPS Group operational consortium**
http://www.mps.it

**Storage Networking**
http://www.cisco.com/global/IT/solutions/ent/avvid_solutions/san_home.shtml

**Cisco Systems solutions for credit institutions**
http://www.cisco.com/global/IT/solutions/ent/fs/fs_rbanking/rbanking_home.shtml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