

The virtual campus: achieving integration in multinational financial services companies

Contents

- 2 Staying compliant in the financial services sector
- 3 The status quo – not an option
- 3 Meeting the sector's needs – the virtual campus
- 4 How the virtual campus works
- 7 Conclusion



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On top of industry requirements like compliance, data protection and security, financial services companies are also subject to internal pressures to reduce costs and improve performance. There have previously been few networking solutions that help them to meet all these demands.

But an alternative solution is now available which can help remove the limitations of existing networking technologies and work across company divisions. This enables companies to comply more easily with regulatory requirements, to function more efficiently, and concentrate on improving performance and increasing revenues.

This white paper describes the solution – a virtual campus – and explains how it enables financial services companies to meet their critical goals.

Staying compliant in the financial services sector

Removing cost and freeing up budget from operations is still an over-riding priority for the majority of financial services companies. Yet they are also facing unique and potentially costly demands from regulators and legislators. IT departments are the first affected, as they provide the systems that support regulated business processes. Internal business issues such as the need to improve performance and increase operational agility turn up the pressure still more, creating a tension that is seemingly impossible to resolve.

The effect of regulation and legislation

Measures in the Basel II accord (and its forthcoming incorporation into EU legislation as the Capital Adequacy Directive, CAD3) and in the Sarbanes-Oxley Act of 2002 regulate business practices and processes, not technology. However, in financial services these are now virtually inseparable.

Business continuity

Basel II's new capital adequacy framework requires banks to hold enough liquid funds to cover any potential losses caused by failures in systems and processes, or by external events. This makes it imperative for large financial institutions to limit their operational risk and avoid substantial penalties. More than ever, they need to be able to demonstrate business continuity strategies.

A preferred model, which Cisco® Systems describes as the 'Business Ready Data Center', contains a pair of data centres using real-time (synchronous) data replication, located within 10 kilometres of each other – for example, at opposite ends of the same city. A third disaster recovery site is located at least 1,000 kilometres away from the others. Mirroring between this and the main data centre helps ensure that the main data centre receives back-ups fractionally later than in real time, and can be fully operational within a few hours of a disaster occurring.

This model relies on high-speed, secure and resilient wide area network (WAN) connections to function optimally.

Storage mounts up

The Sarbanes-Oxley Act of 2002, designed to strengthen corporate governance and restore investor confidence, presents a slightly different set of IT challenges to companies listed on US markets. Section 802 of the Act defines penalties for altering or deleting critical business documents, which must be preserved in non-rewritable, non-erasable formats. It also requires companies to save accounting documents and work papers for a minimum of seven years.

Such requirements, linked to a growing number of other EU and national regulations, covering data retention and access are significantly increasing the burden on companies' storage applications.

The status quo – not an option

What technology-related problems are financial services companies facing as they seek to manage diverse business demands?

- > **High-cost** – In spite of falling prices, high-speed managed bandwidth is still expensive
- > **Inflexibility** – High-speed technologies are typically allocated in large segments that do not correspond closely enough to customers' needs. Consequently, many companies are obliged to pay for bandwidth that they do not use, or use very rarely. They must also wait for long periods – typically between 35 and 60 days – to make changes such as increasing transmission speeds by adding more bandwidth
- > **Speed limitations** – Even WAN technologies that provide flexible bandwidth, such as Frame Relay, cannot provide the extremely high speeds that are necessary for applications such as storage. Until now it hasn't been possible to obtain any-to-any WAN connections at higher speeds than 155Mbps, which is the top limit of multi-protocol label switching (MPLS) systems which are increasingly being deployed in enterprise IP-based VPNs
- > **Lack of end-to-end traffic prioritisation on high-bandwidth connections** – ATM prioritises traffic using Classes of Service (CoS), however, network access from a customer's premises is typically via Frame Relay so CoS can only be applied effectively to a limited number of applications – and at relatively low speeds. The financial services sector is looking for end-to-end Quality of Service (QoS) that will protect mission-critical applications at very high speeds

Meeting the sector's needs – the virtual campus

A new level of business integration

The virtual campus is an answer to many of these problems and enables companies to address compliance and other business issues, while overcoming current limitations in networking technology. It makes a company's wide area connections between different sites or countries look like local links within a single campus. This gives all sites similar standards of network performance, security, cost efficiency and control to those in their local and metropolitan area networks.

The virtual campus allows companies to manage more effectively issues related to compliance, business continuity and storage:

- > It provides resilient, high-speed links between data centres, disaster recovery sites and main offices that support business continuity functions like data replication
- > It improves security by offering high-speed transmission from one end of the campus to the other, ensuring that data travels between sites for the shortest possible time
- > It ensures that mission-critical applications are always given priority over other traffic, by supporting end-to-end QoS at high speeds

The virtual campus: achieving integration in multinational financial services companies

The virtual campus also breaks down barriers created by cost, distance and organisational silos, allowing multi-site operations to function as an integrated whole and use assets more efficiently. For example:

- > **Reducing costs** – Applications in one location can now be made available to others remotely, saving up to 98 per cent of the cost of replicating applications in another data centre
- > **Increasing profitability** – Products or services based on applications hosted in one country can be offered to a company's customers in another
- > **Improving productivity** – Through high-bandwidth applications such as real-time video links between trading floors in, for example, London, Paris and Amsterdam

How the virtual campus works

Using Ethernet in the WAN

The technology behind the virtual campus is metro Ethernet, a network that typically runs on optical fibre in metropolitan areas and is highly regarded for its speed, scalability, ease of use and relative low cost. It works together with IP-based applications and together they can enable the convergence of voice, data and video traffic on to a single infrastructure.

Because Ethernet technology is dominant in local area networking, it is easy to deploy into the wide area because it uses the same physical interfaces. This further reduces costs and improves network performance, and no specialist support skills are required.

Demand for metro Ethernet in the WAN is growing. IDC's European WAN Manager Survey 2004 found that Ethernet was 'the fastest growing network service for WAN connectivity'. One of the biggest obstacles to take-up, however, is the lack of widespread optical fibre links within service providers' European networks. Heavy Reading's 2004 Enterprise User Survey on Ethernet Services states: 'Enterprise customers clearly want Ethernet services, but they want to deploy them throughout their networks.'

COLT Switched Ethernet

Until now, another obstacle has been the lack of services that provide financial institutions with the capabilities they need at the right price. In answer to this, COLT has created a switched Ethernet service. COLT Switched Ethernet enables larger companies in the financial services sector to create a virtual campus uniting their main offices, data centres and disaster recovery sites using high-speed, resilient links that are also cost effective and flexible.

COLT Switched Ethernet is currently unique in the European market:

- > It meets customers' geographical needs – COLT's wholly owned and operated fibre network spans 32 major cities in 13 countries, a footprint that no other service provider can match today
- > COLT offers speeds up to 1Gbps at prices approximately 40 per cent lower than other WAN services on the European market
- > Unlike traditional WAN technologies, the service offers much more granular speed options – currently from 2Mbps to 1Gbps – and further options are planned

- > COLT Switched Ethernet has flexible, 'bursty' characteristics which are not available in traditional optical technology, enabling customers to use up to double their existing bandwidth at minimal extra cost
- > It establishes any-to-any links between the majority of European cities, but at much higher speeds than MPLS

These features offer solutions to critical issues of cost reduction, resilience and data security:

- > **Reducing costs** – Companies only pay for the bandwidth they use, and there are minimal costs for 'bursting' above the rate
- > **Improving resilience and eliminating potential points of failure** – Service recovery after a network failure is significantly faster with COLT Switched Ethernet. Resilient Packet Ring (RPR) technology enables communications traffic to divert to the other side of the network if one side is unable to function for whatever reason
- > **Protecting data** – High-speed connections on reserved bandwidth with built-in resilience are an ideal method of transmitting mission-critical data

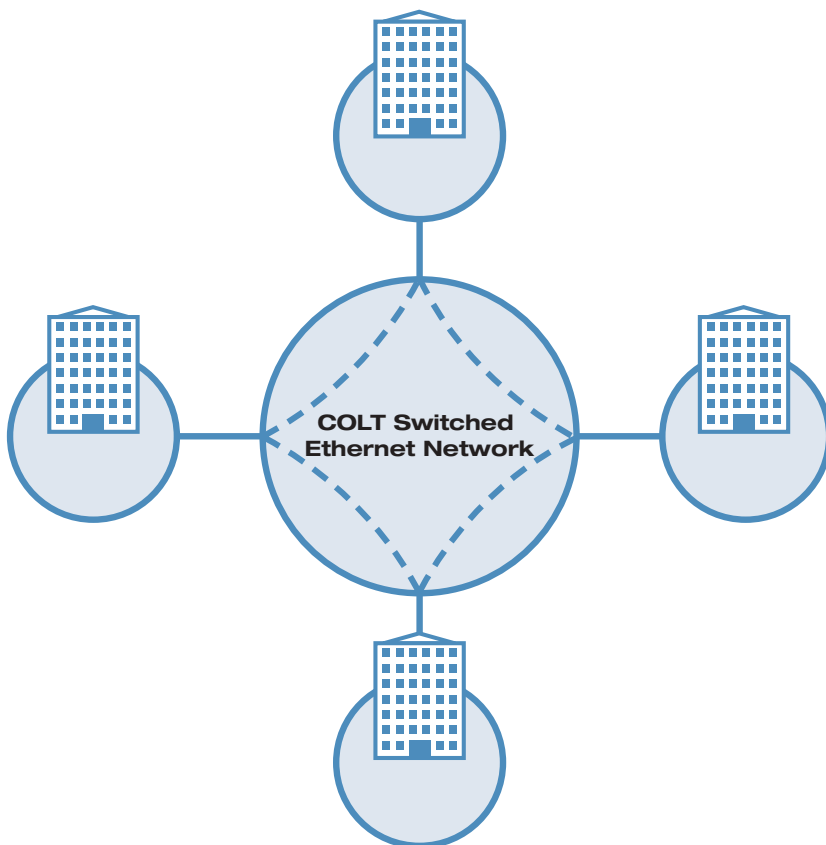


Figure 1: COLT Switched Ethernet

What is Quality of Service?

QoS refers to a network's ability to prioritise different data streams, providing better service for certain types of traffic. It is particularly important for traffic that is sensitive to delay (latency) or poor synchronisation (jitter) such as voice or live video. QoS also encompasses the network operator's ability to meet the terms of its service level agreements (SLAs) with customers, which specify the requirements for each type of traffic and frequently impose penalties if those requirements are not met.

COLT Switched Ethernet was designed in collaboration with Cisco, whose optical technology provides the switching elements for the service. It was the first metro Ethernet service in Europe, and the first business-to-business metro Ethernet service worldwide, to be certified by Cisco for QoS.

Cisco has recently begun certifying services for QoS as part of its Cisco Powered Network designation. COLT Switched Ethernet has carried a Cisco Powered Network designation for some time, signalling to customers that the service is delivered over an end-to-end Cisco network and that it meets Cisco standards for network support. The addition of QoS certification for this service now tells customers that it has undergone a third-party assessment, verifying it follows Cisco best practices for delivering recommended levels of network performance (including latency, jitter, and packet loss) and customer support.

A long-standing member of the Cisco Powered Network programme, COLT has an impressive customer service track record that has seen it win the World Communications Award for Best Customer Care four times since 2001. Seeking and achieving QoS certification from Cisco for its Switched Ethernet service was a natural extension of COLT's overall commitment to excellence and its specific commitment to high standards of performance within a Cisco technology-based environment.

The importance of Cisco Powered Network QoS Certification

There are a number of reasons why QoS certification from Cisco will become increasingly important, even in a high-bandwidth service such as COLT Switched Ethernet.

- > **Supporting compliance** – QoS certification offers companies independent proof and therefore greater assurance about the performance of their mission-critical applications, needed to protect the business and enable them to comply with regulatory and legislative requirements
- > **Reducing costs** – Having invested in a high-speed optical service, many companies will want to maximise their investment and reduce costs by using a service such as COLT Switched Ethernet to converge separate networks. QoS becomes relevant on a network carrying different types of traffic, particularly if traffic flows include voice over IP, streaming multimedia, or enterprise storage applications
- > **Data security and control** – QoS certification enables companies to retain control of their communications infrastructure while using a managed service such as COLT Switched Ethernet. Companies specify exactly how their applications must be managed and receive detailed reports on the network's performance, as defined within tailored SLAs. This means that they are better able to work with COLT to tune the network to accommodate business-critical applications
- > **Including QoS in the roadmap** – It is advisable for companies to include QoS in their roadmap now when they are reviewing or defining IT strategies. As the market for Ethernet WAN services matures, new users and a growing demand for bandwidth-hungry applications will begin to put pressure on networks. The role of QoS in the core network of service providers like COLT will, therefore, gain in importance over time

Conclusion

The virtual campus enables financial services multinationals to achieve unprecedented levels of integration for their European communications. This supports their over-riding objectives of reducing operational costs, complying with new regulations and improving performance. COLT Switched Ethernet is the first service in Europe to enable the virtual campus – a single, cohesive environment where the traditional boundaries and bottlenecks between the LAN and WAN disappear.

For more information

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