



Business benefits of global Ethernet

Ethernet, the networking technology that many analysts and technicians predicted would die out in the early 1990s, is now destined to be an industry worth £15 billion by 2012, according to analysts at Ovum Research.



The current rate of growth - around 20 per cent year on year - is being driven by the expansion of telecom carriers' Ethernet options, according to Ian Redpath, senior analyst and co-author of Ovum's forecast analysis report. Businesses that are choosing to invest in this global technology, which is being trumpeted as the future of global networking, are currently enjoying the enormous benefits and cost efficiency it brings.

Historically, Ethernet was only seen as fit for use in its incarnation as the standard local area network (LAN) access method used in an office or home environment. However, the increase in business globalisation and the rapid need for the adoption of high capacity, IP based services has driven the growth and transformation of global optical networks and the thinking surrounding its deployment.

Many network providers are now looking towards Ethernet as a superior option to frame relay/ATM networks and it is quickly becoming the WAN technology of the future. Once viewed solely as a new high speed interface for data services, Ethernet has come a long way and is now widely accepted as the best option for convergence layer technology, due to its ability to deliver the full array of unified communications: voice, video and data.

The main benefit of deploying a global Ethernet network lies in its facilitation of standardising customer premises equipment (CPE) rollout on a lower cost basis, with common equipment worldwide.

Fully capable routers with high speed interfaces (T1/E1/DS3/OCN) have the ability to interface with any type of WAN connection, but are often much more expensive than deploying networks utilising Layer 3 Ethernet switches and interfaces, which is the standard CPE when employing a global Ethernet solution. The equipment involved in a global Ethernet network is easier to source, manage and replace, contributing to a reduction in Total Cost of Ownership (TCO) for the end user.

Today, large multinational organisations and enterprises are seeking to build all Ethernet networks across the globe, thus enabling the extension of their LANs across fully accessible Ethernet WANs. This move towards all Ethernet carriers mirrors that of carriers' desires to migrate to IP-optimised networks. IP-friendly Ethernet has quickly become the omnipresent service delivery network that can be integrated across any transport technology.

Current growth areas of this technology are mainly in Japan and America, with predictions estimating that these countries will account for nearly 59 per cent of cumulative global revenues in 2012. In the UK, cable companies are exhibiting solid growth and although fibre is still the physical access method of choice, Ethernet over copper and microwave will become a more viable and cost effective option, sustaining future growth.

When native Ethernet is not available at competitive prices, some network providers are able to simply deploy a serial connection to provide Ethernet hand-offs to their customers. The installation of circuit termination equipment within the customers' premises provides the opportunity to offer a service whereby customers receive all the benefits of Ethernet regardless of their access speed or circuitry type. Customers are no longer limited by the availability or high cost of native Ethernet circuits, nor are they subject to extended delivery timelines associated with Ethernet build-outs.

The way superior global Ethernet services are deployed involves the secure convergence of multiple VLANs (virtual local area networks) on the same circuit, whereby native Ethernet VLANs are bridged across serial connections and offer the flexibility of one-to-one, one-to-many or fully-meshed networks. Customer connections should be able to support up to 10 VLANs per site, with the ability to support private layer 2 VPLS (virtual private LAN service), layer 3 and public services within a single circuit. A WAN infrastructure should be designed to support customers' needs and any applications they choose to run across it.

Furthermore, using a native MPLS (multi protocol label switching) core design will allow for the provision of global SLAs for network

performance, with the potential to promise 100 per cent in-sequence packet delivery for voice and video.

We are finding that our new clients are moving forwards with an Ethernet solution from the start, taking advantage of the standardised CPE rollout and reduced network costs. Now that MPLS has gained clear and wide acceptance, they are ready to migrate to converged network services, either gradually or rapidly, based on requirements and level of risk aversion.

Some prefer the maturity of layer 3 private IP VPNs, while others select the familiarity and relatively easy-migration from frame relay to VPLS. Companies are naturally wary of new technology, but if the network provider is able to offer in-house circuit termination equipment, and guaranteed quality of service, this serves to reassure interested parties.

As global carriers will naturally migrate towards next generation Ethernet delivery service platforms, which are expanding their offerings in new and existing markets, they will need multi-service carrier Ethernet products that are able to unify advanced switching and transport capabilities that are integrated into a single system.

Furthermore, the multi-service and end-to-end carrying capability employed by Ethernet switching platform support for intelligent generalised multi-protocol label switching (GMPLS), and its future compatibility with upcoming provider backbone bridge, IEEE 802.1ah, allows businesses to employ global Ethernet with the piece of mind that this future proof solution can enable the transition to all-packet networks, with truly global scalability and reduced TCO.

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May 2008

<http://www.bcs.org/server.php?show=ConWebDoc.19150>