The EoX Gateway: A Shorter Path to Greater Profitability

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The industry has long sought a solution to creating a single, coherent, secure network, providing voice, video and data services whenever and wherever they are needed. At the same time, we have witnessed the rising popularity of Ethernet as the preferred interface for attaching end-users and access devices to profitable Ethernet and IP services.

Standing between you and the realization of the next-generation network is most likely a costly, complex infrastructure comprised of differing legacy access network types, accompanying services and transport handoffs that must be managed at hub offices where these disparate technologies collide. Historically, this problem has been addressed in a brute-force manner by deploying multiple types of elements including multi-service provisioning platforms (MSPP), Ethernet over Plesiochronous Digital Hierarchy (EoPDH) termination boxes, Ethernet switches and DCS platforms. The result is a further increase in complexity and capital expenditure.

But there is good news. A technology already familiar to many is allowing for the creation of a single network infrastructure capable of efficiently delivering emerging and next-generation applications, including interactive gaming, videoconferencing, VoIP, and streaming audio and video, to a greater number of customers. This technology is Ethernet or, more precisely, Connection-Oriented Ethernet (COE). COE promises the reliability, performance and security of trusted SONET/SDH technology, but with the low cost and bandwidth flexibility inherent to Ethernet.

And now Fujitsu has developed the EoX (Ethernet over Anything) Gateway, a scalable and cost-effective way to use COE to aggregate and switch Ethernet and IP services across any type of access network and transmission media. The EoX Gateway is an application-specific configuration of the Fujitsu FLASHWAVE® 9500 Packet Optical Networking Platform (Packet ONP).

The EoX Gateway provides a range of both optical transport layer and Ethernet service layer functions. The transport functions include complete transport network termination: physical layer termination, protection switching and protocol termination, Ethernet encapsulation, and OAM (operations, administration and management). The Ethernet service functions managed by the gateway are the same regardless of the underlying transport network. The EoX Gateway is responsible for ensuring the integrity of the Ethernet service, especially CoS marking, QoS management and OAM across disparate transport networks.

A single FLASHWAVE 9500 EoX Gateway can aggregate hundreds of thousands of Ethernet/IP circuits from hundreds of different physical access networks comprised of Ethernet over SONET/SDH (EoS), T1/T3 (EoPDH), WDM (Eoλ) and fiber (EoF). The EoX Gateway serves diverse applications, including wholesale Ethernet access, retail Ethernet and IP services access, mobile backhaul and DSLAM backhaul. Service providers can, for the first time, define a common Ethernet service specification for their retail or wholesale Ethernet service portfolio and deliver service regardless of the type and mix of access network technologies over which the service is delivered.

Because the EoX Gateway integrates the functionality of many network elements typically found in central offices, hub sites co-location facilities and IP service edges/POPs, there is a reduction in the space, cost and time required for Ethernet OAM over different types of physical access networks.

With the ability to handle multiple types of access media, the EoX Gateway can help wholesale and retail Ethernet service providers dramatically increase the number of addressable customers for differentiable Ethernet and IP services. By leveraging existing access networks and significantly reducing the cost and space of hub office equipment, the EoX Gateway offers the best approach to profitable Ethernet service delivery.