

# A new generation of services for a new generation for a new generation of challenges

by Nan Chen, President, Metro Ethernet Forum

Ethernet has been stealing a march on other access technologies because of its simplicity and flexibility. Carrier Ethernet allows cost-effective scalability with gradual increments of capacity, even seasonal fluctuation. However, enabling Carrier Ethernet to cope with global inter-operator connectivity requires implementation of further standards and the alignment of parameters across the world. These standards have been completed by the MEF for a while, including the five attributes of service type, QoS, scalability, reliability and service management. The compliant multi-point Carrier Ethernet - the E-LAN - is now available, but sales lag behind the success of the simpler, although limited, point-to-point E-Line. Carriers who wish to differentiate services will need to move to E-LAN if they wish to avoid the bit-pipe trap.



*Nan Chen, Co-Founder and President of CENX, is also the founding President of the MEF (Metro Ethernet Forum). His drive to unite standardization and certification with dynamic, global campaigns and strategic initiatives put Carrier Ethernet among the fastest growing areas in telecoms. He has served as VP of Marketing at Atrica and at Strix Systems, and as Director of Technology at Bay Networks/SynOptics. With more than thirty industry awards/accolades and over 10,000 citations in worldwide media, he has been named as one of the Top 100 Most Influential People in Telecom/Internet Industry and achieved two MS & one BS degrees - as well as setting a pole vault record while at Beijing University.*

Carrier Ethernet equipment in the wide area Network has already brought on a quiet revolution, a sea-change in the deployment of business-class services. The adoption of, even domination by, Carrier Ethernet comes at the expense of all other technologies. Now, a new generation of Carrier Ethernet Services has emerged, supporting multiple class of service deployment. This is providing sorely needed efficiency in the mobile backhaul network.

The Telecom game is changing fast, and it is time for rethinking the operators' business models to meet the demands of a maturing market where everyone is chasing the same customers. Telecom providers still hold significant assets, but they need new ways to exploit these resources.

Just ten years ago, Telecom was predominantly about connecting individuals. In the next ten years it will be about connecting devices. Already some people carry two or three devices - mobiles, smartphones, kindles, ultrabooks. Machine-to-machine connectivity puts rocket fuel into an already accelerating bandwidth demand.

What's more, the traditional Telco business model is geared to a year or a multi-year contract for connectivity - signing up for phone or broadband connections. How does this square with the on-demand IP or cloud computing models where you might want a few minutes of very high-speed connectivity once in a while?

The simple solution is to stick to the core strength of physical connectivity and let others worry about the smart stuff. This is the dreaded 'dumb pipe provider' option - making and holding a massive capital investment in infrastructure and selling its usage at knock down prices to those who run highly profitable value-added services across your network.

The more challenging solution is to evolve to meet the changing environment of demand. Instead of just delivering bandwidth, you now need to address mobility, customer experience and speed to market. In the current Telco environment it takes half a year to develop a new service, whereas over-the-top players can do it in weeks or even days. Can Telcos ever achieve that level of agility?

## Carrier Ethernet v1.0 - scalable bandwidth

One of the strongest features of the first-generation Carrier Ethernet was its ability to deliver bandwidth on demand, scalable in small increments at short notice. This was a hot selling point during a period of economic collapse when everyone needed to maintain competitive performance while cutting capital outlay.

If a customer wanted more bandwidth, the traditional answer was to lay another line to the premises - a step change in performance that required field engineers and a significant outlay, needing to be justified in terms of future potential demand. With Carrier Ethernet, however, the provider could raise or lower bandwidth on demand, without any truck roll. The speed of provision was only limited by internal operating procedures that could be tuned to deliver a highly attractive and competitive service.

Since 2005 this has been a key feature in Carrier Ethernet's success. Enterprise users have been able to extend their corporate networks to branch offices and outlets with less capital outlay, and can match the tariff to their actual needs. In the case of retail companies, for example, this can mean raising and lowering bandwidth to meet seasonal fluctuations without wastage.

Such has been the demand for this basic E-line connectivity from branch offices to headquarters, that it has dominated service providers' offerings since 2005. Mobile operators have also jumped at the chance to reduce costly investment in leased lines for mobile backhaul and enjoy the scalable bandwidth of Carrier Ethernet - with the added benefit of an all-IP solution for data traffic.

If Carrier Ethernet had offered nothing more than this basic, point-to-point, scalable service, it would still be the success we know today. It has, however been continuously under development, with a whole range of further services already available or in the pipeline. To help promote the opportunities offered by advanced Carrier Ethernet services, Carrier Ethernet v2.0 is launched this year.

## Carrier Ethernet v2.0 - Multi-CoS, multi-network manageability

The success of Ethernet is due largely to its simplicity and flexibility, allowing it to be adapted to ever higher speeds and demands.

The work of the MEF has largely been on shaping this technology to useful standards. For example, the five attributes needed for carrier-class Ethernet were standardized: services, QoS, scalability, reliability and service management.

The downside of flexibility means that interconnecting services from different providers is complex, although perfectly possible. Enterprise Ethernet is a very simple solution for linking sites across a city, but it is much harder to connect Carrier Ethernet across the globe because of the numerous parameters that need to be aligned between different network providers and due to different business models. This called for a new set of standards to address 'global interconnect', providing a standard external network-to-network interface. The ultimate aim is for global networks to become as simple to set up as a traditional telephone link between continents.

Similar to the traditional telephone exchange, Ethernet Exchanges have been created to accelerate these links. Whereas it could take months and a major investment for a provider to extend a client's network across other providers' networks, it can now be done in days by an Ethernet exchange. Local operators can already offer clients extended communication beyond their own footprint, and a whole new market for wholesale Ethernet services is emerging.

The demand for E-line point-to-point connectivity has been so strong, that providers have not been selling E-LAN multipoint Ethernet connectivity to the same extent, even though it has long been specified by the MEF. It also presents a more complex management scenario, and this is where the automated management facilities of Carrier Ethernet v2.0 become critical.

If broadband providers are to form new working relationships with content providers to get beyond the dumb pipe model, then they need Carrier Ethernet support for multiple classes of service across multiple providers' networks. This is supported in v2.0, in addition to the automated management and monitoring needed to simplify such complex offerings.

## Orchestrating the media flow to the user

In brief, the launch of Carrier Ethernet v2.0 this year clarifies the route from basic Ethernet connectivity as the de-facto standard for cost-effective metro networking, towards

Ethernet as through ticket from content provider to user.

The ability to easily and rapidly manage and monetize multiple classes of service, multiple access technologies - fixed and mobile - and any number of interconnected networks en route, gives the service provider enormous scope to become the active partner, the media impresario rather than the dumb pipe provider.

Carrier Ethernet is again providing the underlying technology - so where are the innovative business models to take advantage of all that this offers? ●



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