

# NETWORK

A QUESTEX PUBLICATION

Converged Communications at Work

## Mission-critical support

The Metro Ethernet Forum (MEF) is largely credited with transforming Ethernet into a technology that is relevant and extremely compelling for carrier-grade metropolitan area network, long haul and local access services. *Telecom Asia* spoke to Mike Tighe, Executive Director Business Product Strategy at Verizon Corp., about the challenges ahead and what's next for Carrier Ethernet.

### TELECOM ASIA: WHAT IS THE MEF'S MAIN OBJECTIVE?

**Mike Tighe:** The MEF is about four years old. It started when roughly 35 companies came together to begin a market in Carrier Ethernet. Previously, Ethernet had been a LAN technology. The founding companies realized that Ethernet as a technology made sense but when deployed in LANs, it didn't have the attributes required to implement it from a carrier perspective. So these companies — mostly equipment providers at the time — went to work to augment Ethernet to enable it to be deployed from a carrier perspective.

One of the key things they did early on was to define types of Carrier Ethernet services. They defined two types of service — E-line, or point-to-point, and E-LAN, which is across multiple sites.

### HAS THE NATURE OF THE MEF'S MEMBERSHIP CHANGED?

Originally it was very much an equipment vendor-led forum. That changed roughly 18 months ago when some of the major US service providers started getting more heavily involved. Now the membership is over 100, and we've had around



**Mike Tighe, Executive Director Business Product Strategy, Verizon Corp.**

30% growth in members in the last 12 months. A large part of the growth has been service providers — the likes of Verizon, BT, COLT, Orange and AT&T. There's obviously Tier 1 providers but also an increasing number of Tier 2 providers.

Service providers are starting to get involved because they see a lot of success in selling Carrier Ethernet to large enterprises. To give you a Verizon perspective, Ethernet is our fastest-growing product portfolio — exceeding expectations and growing in high double digits and even low triple digits.

### WHY IS CARRIER ETHERNET PROVING SO POPULAR?

A couple of things. Depending on what analyst you listen to, some end-users'

bandwidth requirements are growing at between 30% and 100% per year. Traditional networking technologies that they had relied upon — frame, ATM and private line — don't scale to meet their evolving bandwidth requirements. End-users see Ethernet as a way to continue to cost-effectively scale their networks and are asking service providers to implement Carrier Ethernet to support their growing bandwidth requirements.

That's one side of it. The other side, say for carriers such as Verizon that are offering entertainment services at a consumer level, is that there's a need internally for network architectures that are hugely scalable. Just as our enterprise customers have found some road blocks with traditional technology, we've found those same road blocks. So many service providers are implementing Carrier Ethernet for high bandwidth applications.

### WHAT'S THE SIZE OF THE CARRIER ETHERNET MARKET?

Worldwide services revenues are estimated to jump 280% from \$5.9 billion in 2005 to \$22 billion in 2009, according to Infonetics.

### IS CARRIER ETHERNET A GLOBAL PHENOMENON?

We see service providers joining the MEF from all over the world — China Telecom, Orange, BT, Telus, Bell Canada and VSNL. But I think one challenge we all do face in the MEF is deploying the service ubiquitously and globally. Where we can deploy it — where we have fiber and infrastructure — it's been extremely successful. From there the challenge is at two levels. To

take Verizon, for example, even within its serving area there are places where we don't have fiber and we are looking at other technologies as substitutes. Also, say if Verizon has a circuit from the US to the UK and we need to partner with BT, we need a network-to-network interface (NNI) to enable interworking, just as we do with other technologies like frame and ATM.

We're doing a lot of work on an Ethernet NNI. If you deliver a circuit in one market and a partner delivers it in another, you really need to seamlessly connect your networks.

### **HOW SIGNIFICANT IS THE NEW MEF 14 SERVICE PROVIDER CERTIFICATION?**

Very. MEF 14 is basically a traffic management specification. We're seeing customers implementing converged network architectures at a rapid rate. They like the benefits of Ethernet-scalability, for example going literally from 1 Mbps to 1 Gbps using the same connection — and they want to support all their critical applications over the Ethernet service. What MEF 14 does, if implemented correctly by the equipment and service provider, is enable converged services to be supported over Carrier Ethernet infrastructure. Why we believe it's important is that we're marketing the benefits of Ethernet in support of converged applications. MEF 14 is a kind of benchmark so we can say to customers: look we believe Carrier Ethernet is the right technology for mission-critical converged applications and we've certified our networks against a rigorous set of standards to support those applications over Carrier Ethernet.

### **WHAT'S NEXT ON THE MEF ROADMAP?**

Quite a few things. One is the NNI specification I mentioned, and that's probably one of the biggest things we'll do. One thing that is holding Ethernet back from more success is the ability to deploy it to all the end-points that customers want it deployed to. Being able to partner with other service providers to reach all of the customers' end-points will really grow the market. The Ethernet NNI is a very big effort within the MEF.

Another is the Ethernet Link Management Interface (ELMI). Why that's important is that one of the things people loved about Ethernet is that at the beginning

they could plug an Ethernet connection into a router and the service automatically worked — there wasn't a huge configuration effort. But as we started to deploy networks that support convergence, configuration gets more complex. One of the key things that E-LMI does is pass configuration information from the network to the router. When you plug the router in it automatically configures — it takes the complexity out of the configuration and makes it a lot easier for the user to deploy Carrier Ethernet.

Additionally, the MEF is doing a lot of work with Ethernet in the first mile. With fiber not being ubiquitously available, we're looking at other technologies to deliver the benefits.

### **SUCH AS MID-BAND ETHERNET?**

Yes. If you can use copper, which is just about ubiquitously deployed, you can start to leverage its capabilities for customers that require, say, under 50 Mbps. This will start opening up the number of sites we can service economically and thereby significantly open up the market.

### **WHERE DO YOU SEE ETHERNET HEADING NEXT — LOCAL ACCESS, HOME NETWORKING, PERSONAL AREA NETWORKING?**

I've been in this business now for 20 years and I've found that people have consistently underestimated the applications of Ethernet. I think the thing we will see is that Ethernet will become the standard that carriers will both use to deliver access services and end-to-end services. Increasingly we'll have Ethernet being used for wireless mesh applications. One of the things we're seeing at Verizon, and in the industry in general, is that while normally we deliver an Ethernet circuit that terminates in a customer's telco closet, now customers are saying things like: I really need that circuit delivered up on that bridge for video surveillance or I need it delivered in an area where there's no fiber. So we'll see Ethernet being used more and more in high-speed wireless configurations. It will be 802.11-based, but it will have to have a lot of reliability characteristics that it probably doesn't have right now.

### **DO YOU THINK THE EMERGING CONTEST BETWEEN THE PROVIDER BACKBONE TRANSPORT (PBT) AND TRANSPORT-MPLS FLAVORS OF CARRIER ETHERNET**

## **IS A HEALTHY DEVELOPMENT FOR THE MARKET IN GENERAL?**

From an MEF perspective, we look at the problem they're trying to solve as the right thing to focus on. What they're both trying to do is basically make point-to-point connections over an Ethernet network more reliable. We think that's critical. Key attributes of Carrier Ethernet are reliability and availability. Both PBT and T-MPLS technologies are attempting to get to a more reliable Ethernet WAN architecture. We're supportive of the underlying transport being strengthened so that we can deliver more reliable E-Line services over it. At a high level we see both efforts as being beneficial. Which one will win is probably an issue the marketplace will ultimately determine. It's possibly comparable to what's happening right now in the DVD arena with Blu-ray and the other standards. I think initially there will be two standards in the Carrier Ethernet market, and how the equipment vendors could deal with it initially is that they'll implement both standards in their equipment if the customers request it. Over time I think one will emerge, but I don't have a feel for which one will ultimately win.

### **WHAT ARE SOME CARRIER ETHERNET TRENDS TO LOOK OUT FOR?**

I think the biggest trend is the success we're having. If I track the growth at Verizon, for instance, we had steady growth from 1993 right up until 2002 and then it just turned the corner and really took off. Also customers tell us they love the rapid scalability and the price points that we're able to deliver for those services, but they need the services to be reliable and they need strict SLAs. So emphasis on those is a trend too. Plus, customers need to be able to run voice and video and mission-critical data and applications over Carrier Ethernet, so convergence is a trend. And I think the wireless aspect is going to become much more important. ○

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