

# 10-Gig services at 1-Gig prices

Lower transport costs with no tradeoffs in reliability? Here's how.

BY DAWN BUSHAUS

**A**s packet and optical technologies converge inside carrier networks, service providers aren't the only beneficiaries. The trend also gives enterprise customers faster transport of voice, data and video at lower costs than ever before.

Tellabs is focusing on enterprises through its service provider partners that offer Tellabs® Business Solutions, including optical wavelength equipment in the network core and Ethernet and multiservice edge equipment at the edge. At the heart of the company's solution is the Tellabs® 7100 Optical Transport System (OTS).

The Tellabs® 7100 OTS sits in the core of the service provider network – or, in some cases, inside a large enterprise customer's network – where it supports up to 88 channels to provide services ranging from 100 Mbps to 40 Gbps. In the future, the Tellabs® 7100 OTS will support 100 Gbps, while a compact version of the product, the Tellabs® 7100 Nano OTS, is available for smaller enterprise applications.

"The whole idea is to create an infrastructure that enables service providers

to create new kinds of service offerings," said Rob Shore, a manager on the solution sales management team at Tellabs.

For example, service providers can use the Tellabs® 7100 OTS to deliver high-bandwidth services such as 10 Gig Ethernet via a shared network, instead of delivering them only as dedicated services.

"This enables our service provider customers to go in to an enterprise customer that traditionally is a 1 Gig-type customer and offer them 10 Gig services at 1 Gig prices," Shore explained.

## FASTER AND FLEXIBLE

To enable those kinds of discounts, Tellabs has made its optical technology more cost-effective by increasing integration and flexibility in the Tellabs® 7100 OTS, said Bert Buescher, director of product management at Tellabs.

"Our technology enables service providers to plug in cards only at the end points of the circuit," Buescher said. "The signal stays optical end-to-end throughout the entire core of the network, which dramatically lowers the cost of transport."

By combining the Tellabs® 7100 OTS with other products on the edge of the



Traders work in the S&P 500 Pit at the Chicago Mercantile Exchange, which uses the Tellabs® 7100 and Tellabs® 8860 systems.

Photo by: John Gress/Reuters/Landov

network – such as the Tellabs® 8600 Managed Edge System and the Tellabs® 8800 Multiservice Router (MSR) – operators can offer their enterprise customers new services such as EVPL, which is a high-speed backbone service providing point-to-point Ethernet virtual connections between ports at native Local Area Network (LAN) speeds.

For example, since 2005, the Chicago Mercantile Exchange (CME) has been using an EVPL service provided by

## TELLABS HELPS CARRIERS GET ROADM RIGHT

By Joan Engebretson

As network operators move from SONET to optical networks based on ROADM technology, they face an entirely new set of design challenges. "To expand a TDM network, network planners simply stacked more rings on top of one another," said Rianne Reiss, senior marketing manager for Tellabs Global Services, the company's professional services arm. "But to take advantage of the cost savings you'll get from ROADMs, more upfront planning is needed."

Tellabs Global Services is working with network operators worldwide

to plan, implement and manage their ROADM deployments. As a developer of ROADM technology, Tellabs has the right skill set to help network operators properly design their ROADM networks to minimize costs, meet deployment schedules and avoid potential design pitfalls.

"To meet project deadlines, a carrier may focus on building network elements and worry about hooking them up later," said Al Errico, a Tellabs network consultant.

However, ROADM networks are highly sensitive to the quality of the

physical infrastructure and the distances between nodes. Network architects must gather this data in advance of creating the network design or risk significant re-work, schedule delays and additional capital expenditures.

"You have to know how you will connect the entire network and anticipate traffic demands and growth before you can determine what equipment you need," Errico said.

Without careful up-front planning, carriers may find they have stranded resources when a wavelength on one side of a network element cannot be used because the same wavelength is not available on the other side. Without

Verizon using the Tellabs® 7100 and Tellabs® 8860 systems. Less than a year after starting its EVPL service, CME asked Verizon Business to double its initial bandwidth allocation.

“Given the large flow of orders coming in from New York, we need maximum bandwidth between there and Chicago,” CME’s Jim Messer, director of network services, told *Inspire* in a 2007 interview. “With EVPL, we can allocate more capacity to that leg of the network, and less to others that have less traffic on them, improving our overall network efficiency.”

(For more information about CME’s deployment, see “Measuring the Chicago Mercantile Exchange’s Success One Millisecond at a Time,” in the Summer 2007 issue of *Inspire*, available at [www.tellabs.com/news/inspire](http://www.tellabs.com/news/inspire).)

Converged optical networking reduces latency, which is critical for financial services networks such as CME.

“If you can execute a trade a fraction of a second faster than your competitor, that’s a huge edge for a financial institution,” said Ron Kline, research director at Ovum, a research and consulting company.

#### **NO TRADEOFFS IN RELIABILITY**

Besides latency, the physical plant’s reliability and the ability to prove SLAs are two critical issues for enterprises, Kline said.

“That’s where a company like Tellabs can really try to differentiate itself: in its ability to provide quality of service and track SLAs,” he said.

the right design expertise, carriers can design themselves into a corner and unnecessarily limit the capabilities of their optical infrastructure.

Design oversights such as these are costly not only from a resource and equipment standpoint, but there also may be a revenue penalty when the network is unable to support customer demand. Tellabs Global Services helps carriers avoid these pitfalls by working with them to deliver a secure, scalable, reliable and resilient optical network architecture from the start.

Using best-in-class tools, Tellabs senior network consultants develop

Indeed, Tellabs has been working on increasing reliability by integrating a processor, power supply, switch fabric and flash memory on a single card to eliminate potential points of failure. That integration has paid off, according to Shore.

“We recently surpassed a milestone on the Tellabs® 7100 system that most people had predicted would never be achievable,” he said. “We passed six nines (99.9999%) of availability on our product, which means downtime of only about half a minute in a year.”

In addition, Tellabs is using new technology called an optical spectrum analyzer to monitor each individual wavelength for problems. If a service provider detects a problem, it can change amplification levels or attenuation levels in order to keep the signal up and running. The service provider also can pass on the data collected by the analyzer to end customers in order to verify SLAs.

“This new feature helps our service provider customers troubleshoot and proactively address potential problems before they impact customer traffic,” Shore said. ■

**EVPL:** Ethernet Virtual Private Line

**LAN:** Local Area Network

**SLA:** Service-Level Agreement

➔ Download the podcast interview with Rob Shore and Bert Buescher at

[www.tellabs.com/news/inspire](http://www.tellabs.com/news/inspire)

a comprehensive network design, an outline of the business and operational implications of the proposed design and a network launch plan, including critical steps, anticipated impact to existing networks and traffic migration recommendations. By partnering with Tellabs for network design and migration, carriers leverage Tellabs’ expert resources, drawing on their knowledge from past implementations and industry best practices.

**ROADM:** Reconfigurable Optical Add/Drop Multiplexing

**SONET:** Synchronous Optical Networking

**TDM:** Time Division Multiplexing