

# tw telecom Consolidates Network to Improve Efficiency

Tellabs® Global Services helps tw telecom consolidate digital cross-connect and optical network equipment



**LEFT TO RIGHT:**

Heidi White, Tellabs sales director;  
Tom Wiers, lead planning and  
design engineer, Tellabs Services  
Organization (seated); Scott  
Lemberger, tw telecom director,  
engineering; Mike McNamara,  
tw telecom VP engineering;  
Tony Thakur, tw telecom VP  
architecture

As a competitive carrier that acquired other companies to fuel its growth, tw telecom faced a challenge common to nearly all carriers in that position: how to support a network based on equipment from several different suppliers.

In 2008, the company decided to consolidate Digital Cross-connect Systems (DCS) from three different manufacturers across a number of its Central Offices (COs) onto a single platform based on the Tellabs® 5500 Digital Cross-connect System (DCS). To minimize risk and speed of the project timeline, tw telecom enlisted the assistance of Tellabs Global Services.

Since that first project, tw telecom has also worked with Tellabs Global Services to consolidate multiple OC-48 rings onto a common platform in order to gain additional network efficiencies.

## tw telecom Leverages Best Practices for DCS Consolidation

tw telecom operates optical networks to deliver voice, data, dedicated Internet and integrated communications services to business customers in 75 markets in 30 states and the District of Columbia. The decision to consolidate DCSs was part of tw telecom's overall technology refreshment program and represented a strategic element of the company's green technology initiative.

"We continue to review our energy needs and consumption in the network," said Harold Teets, senior vice president of information and network technologies for tw telecom.

## Executive Summary

**Client:** tw telecom

**Project:** Consolidate three separate DCSs onto a single platform in several COs and multiple SONET rings onto a single platform in several locations.

### Tellabs Solution

A dedicated project team provided:

- Project planning
- Project management
- Traffic migration services

### Business Results

- 60 percent reduction in time required to design new circuits
- 30–35 percent reduction in power consumption per CO due to DCS consolidation
- 25 percent power reduction per CO as a result of optical ring consolidation
- \$600,000 Capital Expenditure (CapEx) savings in one market alone
- Reduced HVAC requirements and associated costs
- Freed up floor space for future expansion
- Minimal disruption to end users during traffic migration

tw telecom chose Tellabs Global Services to help with the DCS consolidation project because, as Teets explained, “We look for vendors that can help us find solutions to support our business vision — ‘People working with people to change the way businesses connect and communicate.’ Tellabs offers the expert methods, tools and knowledge we needed.”

Tellabs Global Services has developed a full set of best practices over the past decade related to network consolidation, migration and optimization, which tw telecom leveraged to meet project requirements. Tellabs Global Services is also well-versed in the complexity of acquisitions and was able to identify procedures and methodologies that matched tw telecom’s business case.

The process of consolidating the DCSs in the first CO took about 90 days. Representatives of Tellabs Global Services met regularly with tw telecom personnel to coordinate plans and help ensure that the project progressed smoothly and met key milestones. Tellabs completed the migration using a wrap approach rather than the hot-cut method, occasionally used in such situations.

“During a hot cut you’re cutting customers over in real time, and usually all customers or circuits at the same time, so there is a greater risk of service disruption,” Teets said. “The wrap approach creates an in-line active path for each circuit and moves traffic in a batch mode.”

“Based on extensive experience with a wide variety of clients, Tellabs has determined that the wrap approach is the best practice for this type of project,” said Tom Wiers, lead planning and design engineer for Tellabs Global Services, who worked closely with tw telecom.

“With a hot cut, you have more downtime,” Wiers said. “The downtime depends on the amount of time it takes to remove patch cords. With the wrap approach, remapping circuits affects service for no more than 50 milliseconds.”

Teets was impressed with the attention to detail that Tellabs brought to the project. “Up to the time they threw the switch, Tellabs was checking information to make sure no last-minute changes had been introduced. They double-checked and triple-checked. The net result was that the impact to our customers was minimal — less than one-half of one percent of customers had any issues,” Teets said.

### **Tellabs Delivers Substantial Cost Savings**

As a result of the DCS consolidation, tw telecom was able to eliminate nearly 20 racks and numerous interconnections between DCS platforms from the CO, which in turn reduced Heating Ventilation and Air Conditioning (HVAC) requirements. In addition, freeing up space in their CO gave tw telecom more flexibility to expand capacity and services in the future.

Total energy savings from the DCS consolidation were in the range of 30 to 35 percent, with the money saved re-allocated to other infrastructure projects. The streamlined configuration of DCS equipment also provided a service benefit, with a 60 percent reduction in the time required to design new circuits.

Since the first CO was completed, Tellabs has consolidated DCS equipment in several other COs with equally positive results. Projects to consolidate additional COs are currently in progress.

In the meantime, some of the DCS equipment removed from unconsolidated COs has been re-deployed where extra capacity is needed in the network, reducing expenditures for new equipment required to support network growth. Some of the existing DCS equipment had been manufacturer discontinued and was not re-deployed, but the ability to re-use other devices and cabling yielded considerable savings that exceeded tw telecom’s expectations.

“We’re very prudent in our approach to financial management as part of our overall strategy to find cost savings wherever possible,” Teets said. “In one market alone we realized more than \$600,000 in CapEx savings.”

### **Tellabs Expertise Reduces Cost and Complexity for Optical Ring Consolidation**

Optical versus electrical transport is another network technology tw telecom has been studying with an eye toward cost reduction. One of the company’s goals is to keep as much traffic as possible in the optical domain.

That objective led to another Tellabs engagement with tw telecom, involving the consolidation of multiple SONET rings onto a common platform. As Wiers explained, each targeted CO had between 10 and 40 optical rings that were not optically connected.

“We inserted a common platform on each ring so they are all passing through a common platform, eliminating the electrical connection between rings,” Wiers said. “We can do the connection between rings on the new platform.”

Though neither the existing nor new optical networking equipment were Tellabs products, tw telecom was confident Tellabs Global Services could effectively handle the project because it required the same skill set and project management expertise Tellabs had demonstrated with the DCS migration. The initial target for OC-48 ring consolidation was one CO, but several more have been completed since the initial project.

As with the DCS project, the net result was a substantial decrease in the number of network elements involved, as well as a reduction in floor space and power requirements.

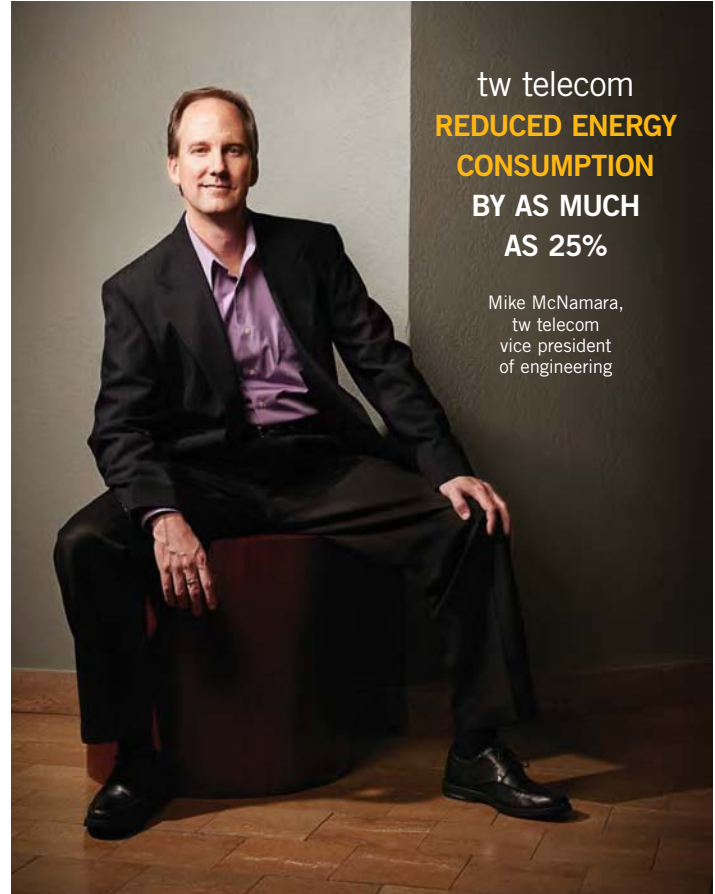
“What we used to put in 24 bays we can now put in about two,” Wiers said. The two-bay requirement takes into account the shelves needed for circuits that will not just pass-through the common platform, but “drop out” and connect to other devices at a lower bandwidth (OC-3, OC-12, T-3 or EC-1).

Teets estimates that tw telecom has reduced energy consumption by as much as 25 percent in COs in which SONET rings were consolidated. In one CO, the company was able to free up enough floor space to avoid a contemplated expansion project, along with its associated substantial capital investment. “It eliminated the need for capacity build-outs in space and power,” Teets said.

Once again, Tellabs traffic migration expertise proved invaluable. “We used the same approach to pre-provisioning circuits on both projects, which allowed us to remove elements and continue service with minimal impact on customers,” Teets explained.

Teets concluded that tw telecom considers Tellabs a valued partner and that they will continue to evaluate new opportunities for DCS and SONET equipment consolidation.

“If we had not used Tellabs Global Services we would have had to use our own resources, extending the project timeline and increasing its complexity. Working with Tellabs helped tw telecom in three significant areas — we reduced our risk of a major customer disruption, we decreased our overall costs by leveraging proven and tested Tellabs methods, and we accelerated our project timeline,” Teets said.



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