CASE STUDY

Ciena Transforms Tier 1 Service Provider's Multi-Vendor Network and Operational Processes

The service provider selected Ciena Services as its trusted, independent partner for this services-only project, which required a proven network transformation process, mastery of deep data and analytics, and process autonomics capabilities.

Key challenge

To remove a non-preferred vendor's equipment from a Dense Wavelength Division Multiplexing (DWDM) network and migrate traffic to alternative, third-party components without impacting existing services or the customer experience

Many service providers are moving away from some non-preferred equipment suppliers because of network security and customer privacy concerns. Since the equipment is in active use on a live network, the service provider must find a way to migrate traffic without adversely impacting existing operations or the customer experience.

This was the case with a Tier 1 service provider whose services span the globe via hundreds of thousands of route miles of fiber. The company needed to migrate over ten thousand circuits from hundreds of DWDM systems from the non-preferred vendor to their existing next-generation network, which was deployed and operating in the United States. The company had an aggressive timeline for the first stage of the project, which required reconfiguring and migrating circuits from the source network to an existing target network supplied by three other vendors. The migration would impact data on multiple Network Management Systems (NMS) and Operational Support Systems (OSS). The goal was to complete this project within a two-year timeframe.

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Brian Ruffner
Senior Director, Regional Services
Ciena

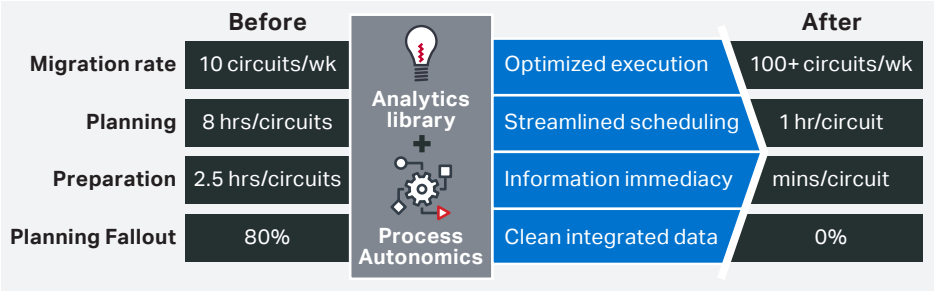

Figure 1. Transformation process improvement results

The service provider had highly qualified and capable staff to tackle the migration, but with the priority of supporting growth and business-as-usual operations, the service provider found it difficult to prioritize circuit migration. They used legacy planning and migration tools that relied heavily on manual processes and analyses and each circuit migration was planned segment by segment, which was highly inefficient. For example, it took eight hours of planning time per circuit just to determine how to migrate traffic from a source component to the most appropriate target system and to ensure the target could accommodate the added traffic. It required another two-and-a-half hours to prepare each circuit for migration. The service provider's teams were able to migrate only ten circuits per week; the pace was not nearly fast enough to meet the timelines the company had set.

Solution

An all-services approach to network and process transformation

The service provider decided to bring in an external organization to solve these many challenges. Its management team put together a business case for outsourcing the work, stipulating timeframes for completion and ROI, and approached multiple vendors for the engagement. The service provider selected Ciena Services for the project, citing multiple differentiators: Ciena demonstrated the best understanding of the company's business case; it recognized the need to transform not only the network but affiliated processes; and it offered the best methods and skills for the project.

Ciena showed it could manage the migration in a way that would spread capital expenditures throughout the duration of the project, which was important to the service provider. Ciena was also an independent partner—all equipment involved was from outside vendors—which enabled Ciena to take on the migration as an unbiased, services-only engagement.

Proven transformation methodology

Ciena employed its tried and tested network transformation methodology to structure the work. The methodology leverages Ciena consultants' deep industry experience, extensive multi-layer networking knowledge, mastery of data analysis, and customizable analytical tools.

Ciena's consultants found that the service provider's migration was burdened by cumbersome processes and poorly integrated IT systems that resulted in sluggish, error-prone network planning activities. Ciena worked with the service provider and

Summary

Challenges

- Remove a non-preferred vendor's equipment from a DWDM network and migrate traffic to existing next-gen network
- Ensure end customer services and experience is not affected
- Meet tight timelines to complete migration

Solution

- Ciena Services Consulting and Implementation teams' created a master database that ensured successful migration paths and automated key process to efficiently complete the work.

Benefits

- 90 percent reduction in migration planning time
- 10-times increase in migration rate compared to the customer's benchmark.

determined that some processes and methods needed to dramatically change to serve its business case and meet its timeline and budget requirements.

Ciena's consulting team worked closely with the service provider to rapidly map its network by pulling data from Network Management Systems (NMS), network elements, reservation tools, and Inventory Management Systems (IMS). The consulting team then cleaned, normalized, and integrated the previously siloed data into a specialized analytical master database that provides a single view of the service provider's network. This database powers a customized analytics library that is used for network optimization, analyses, planning, and scheduling. The single view of the network, informed by comprehensive analytics, avoided wasted work because it revealed migration paths that would be unsuccessful due to lack of line capacity, lack of available ports, or other unfavorable conditions.

In collaboration with the service provider, the consulting team examined and automated many of the workflows. This was achieved by obtaining the operations staff's timeline logs for circuit migration from process mining tools, reports, and interviews. These logs were entered into Ciena's autonomics engine to address inefficiencies by eliminating, improving, or automating time-consuming manual processes where appropriate.

Ciena Services project managers and engineers then worked closely with technical and operations teams to plan the migration. This included developing step-by-step Engineering Methods of Procedures (EMOPs) for every scheduled activity, including contingency plans.

The analysis and planning all came together to accelerate the migration of circuits and associated back-office processes. For example, the analysis revealed the best transformation paths and enabled each function within the service provider's organization to know exactly what activity to focus on, and when, and how to execute it most efficiently. The single source of combined data ensured all personnel involved in the migration were completely aligned. This phase included pre- and post-migration testing to ensure that each step in the deployment was performed properly and the network operates as it should.

Finally, an audit was conducted, OSS and Business Support System (BSS) updates were completed, and legacy equipment was decommissioned and removed. All service provider teams across sales, IT, network, and operations were trained in the new technologies and capabilities.

Results

Dramatically faster planning and migration, and a permanent improvement in operational processes

The combination of the master database, custom analytics, and process autonomics ensured the best transformation path, streamlined scheduling, and extremely efficient execution for each circuit migration. All personnel were able to work with the same information, which improved understanding and collaboration across teams and avoided mistakes. Teams were able to schedule site visits and maintenance windows with confidence.

The project met the service provider's business objectives and more. Ciena's transformation approach reduced planning time for each circuit's migration by 90 percent, from eight hours to one hour. Critically, the new methodology and process ensured that target capacity was available during maintenance windows, eliminating cancellations due to inefficiency, which previously impacted an average of 8 out of 10 maintenance occasions. This resulted in a migration rate that jumped more than 10 times—from the previous rate of 10 circuits per week to more than 100 per week—while using less than half the number of personnel previously required. And because teams are now working with clean, integrated data, they have eliminated planning fallout caused by the cancellation of maintenance windows that cannot be used efficiently. Previously, this impacted 80 percent of maintenance occasions; now, it is a nonissue.

"Leveraging our data-driven transformation methodology, the Ciena Services team delivered stunning results in this vendor-agnostic project. We achieved a 90 percent reduction in migration planning time, resulting in a 10-times increase in migration rate compared to the customer's benchmark," said Brian Ruffner a Senior Director of Regional Services at Ciena. "These improvements in process efficiency can be applied to all future migrations, helping the customer optimize operational costs on an ongoing basis."

The dramatic improvements in process efficiency will be applied for subsequent stages of the project and for all future migrations, helping the service provider optimize operational costs into the future. This project illustrates Ciena's commitment to working with customers as a true, independent partner to deliver the best possible value for an engagement and ensure the customer's ability to maximize ROI.