



Leading architectural design firm delivers high-quality VoIP and global collaboration with a broadband SD-WAN

LEO A DALY increases branch-to-branch throughput 40 times while reducing monthly WAN costs by 45 percent with Unity EdgeConnect SD-WAN edge platform

Great design does more than create a functional building structure. When done right—with excellence in both form and function—it can enhance and enrich the human experience. That’s exactly what the internationally renowned architecture firm, LEO A DALY, has been doing since its founding in 1915. Established in Omaha, Nebraska by pioneering architect Leo A. Daly, Sr., the firm that bears his name today is one of the top design firms in the world, led by Leo A. Daly III who continues

the legacy of innovation and commitment to client satisfaction his grandfather began more than 100 years ago.

As a thriving business with architects, engineers, planners, interior designers, and program managers spread across 29 offices on three continents, LEO A DALY relies on robust network services to enable communication, collaboration, and access to critical industry applications and productivity tools. However, the firm’s existing MPLS-based wide-area

LEO A DALY



GAINED 40X
INCREASE IN
THROUGHPUT

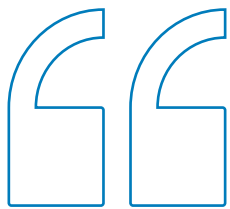


LOWERED
MONTHLY WAN
COSTS BY 45%



REDUCED FILE
UPLOAD TIME
BY 97%

network (WAN) was unable to keep pace with the firm's changing application requirements, providing a mere 3 Mbps of throughput to most sites, and the cost of MPLS was far too high to increase bandwidth. This made sharing large project files a painful experience for users, and a hassle for network engineering manager, Tim Heinzen, who had to deal with escalating user complaints.



Silver Peak had the secret sauce to solve our quality problems with VoIP. With EdgeConnect we can send voice calls over two links simultaneously and provide the quality of experience our users expect.

— Tim Heinzen, Network Engineering Manager,
LEO A DALY

“We were spending a fortune on MPLS but getting only a fraction of the bandwidth we could with commodity internet,” says Heinzen. “Over the years I dabbled in replacing our WAN links with commodity internet, but voice quality was always a problem. What I had my eye on was SD-WAN. The problem was nobody at the time could deliver the quality of service we needed for voice over IP using broadband.”

Nobody, that is, until Silver Peak entered the picture.

Silver Peak overcomes traditional WAN limitations

Initially, Heinzen was considering Riverbed's SD-WAN offering because LEO A DALY had been a Riverbed WAN optimization customer. And since

Heinzen was familiar with Cisco networking gear, the Cisco iWAN product was also in the running. Then the firm's IT partner, [Marco Technologies](#), introduced Heinzen to Silver Peak and the [Unity EdgeConnect™](#) SD-WAN edge platform.

Heinzen remarks that after closely evaluating all three products, EdgeConnect stood out as the best solution to address his WAN challenges. “Silver Peak had the secret sauce to solve our quality problems with VoIP. With EdgeConnect we can send voice calls over two broadband links simultaneously and deliver the quality of experience our users expect.”

The key, he points out, is the unique [path conditioning](#) techniques EdgeConnect applies, such as adaptive forward error correction and real-time packet order correction to effectively utilize all available bandwidth. These advanced capabilities overcome packet loss and ensure all packets arrive at their destination in the right order. Most important, they perform at scale, which is critical for connecting users to latency-sensitive applications like voice and video over the internet.

Heinzen adds that the insights available through [Unity Orchestrator™](#) also factored significantly into his decision to select and deploy Silver Peak. “I liked the visibility into the flows and traffic utilization that Orchestrator provides. It was a key differentiator, with much better information than I was seeing from the others. It really blew Riverbed away.”

Enhanced quality of experience at lower cost

Today, the slow, expensive MPLS network is gone; Riverbed WAN optimization has been retired. Instead, LEO A DALY relies entirely on an internet-only SD-WAN built on EdgeConnect, and also uses

the optional [Unity Boost™](#) WAN optimization performance pack to further accelerate traffic. EdgeConnect is deployed at 24 of the firm's 29 branch locations (the remaining branches will come online imminently), with most sites terminated with two bonded commodity internet links.

Heinzen takes full advantage of the unified routing interoperability and stateful zone-based firewall on the EdgeConnect platform to eliminate the need for dedicated routers and firewalls at each branch location. This allows the branches to break out directly to trusted SaaS applications such as Microsoft Office 365 and Bentley ProjectWise. Untrusted traffic is redirected through EdgeConnect to a nearby regional hub for additional firewall inspection.



With the EdgeConnect SD-WAN, voice calls over the internet using SIP trunking and Cisco CallManager are now reliable and high-quality. Heinzen reports that branch-to-branch throughput has improved at least 40 times. And applications where Boost is applied perform 90 percent faster. File upload speeds have also increased from 3 Mbps at best to 100 Mbps on average. That means instead of taking 48 minutes to upload a 1 gigabyte project file, it now only takes 1 minute and 25 seconds. Moreover, LEO A DALY has gained all these improvements while lowering monthly WAN costs 45 percent by moving to commodity internet.

In addition, overall network uptime has improved. Heinzen notes, "With the redundant internet links and tunnel bonding the increase in uptime has been noticeable. If we had an MPLS link go down in the past, I'd have to manually string up a VPN tunnel, which takes time. Now an internet connection can go down without negatively affecting the quality of service to our users."

An added benefit of moving to an all-internet SD-WAN with EdgeConnect is now LEO A DALY can bring up new branch locations much faster as the company expands. "Increased deployment speed is a big deal," Heinzen affirms. "Generally, I can get an internet connection up in a week or two, plug in the EdgeConnect appliance, and we're ready to go. With MPLS we'd be looking at a minimum of 90 days."

Extending the benefits of SD-WAN into the cloud

Orchestrator has proved to deliver the value Heinzen recognized during his initial evaluation. In fact, he now prefers Orchestrator as his go-to tool over the PRTG network monitor previously used. "Being able to look at traffic flows from any branch in real time through the centralized Orchestrator has made my life a lot easier. I just go to the dashboard and get at-a-glance the bandwidth trends. It's where I can look at every EdgeConnect device for any abnormalities in traffic flow or spikes in utilization. Having that insight allows me to determine if there's malicious activity that needs to be stopped. Or if I see certain traffic is killing a link and important applications are suffering, I can modify the business intent overlay to punish that imposing traffic so applications get the priority they should. It saves me time on troubleshooting so I have more time to work on other projects."

On the horizon, as LEO A DALY moves more applications and business operations into the cloud, the EdgeConnect SD-WAN edge platform and Orchestrator can help assure continuity of network performance and quality of experience for the firm's employees.

"We're starting to move toward putting workloads in the cloud," Heinzen acknowledges. "I can put virtualized EdgeConnect appliances in the cloud and extend the benefits of SD-WAN as we make the transition. And I could still manage everything centrally with Orchestrator. Silver Peak gives us a lot of flexibility to adapt our SD-WAN as our business continues to evolve."

For more information on Silver Peak and our solutions, please visit: [silver-peak.com](https://www.silver-peak.com)

Customer

LEO A DALY is a leader in the design of the built environment, and one of the largest planning, architecture, engineering, interior design, and program management firms in the world. Since 1915, the firm's unyielding focus on design excellence has created exceptional spaces that enhance and enrich the human experience. LEO A DALY has more than 800 design and engineering professionals in 29 offices worldwide. The firm's award-winning, diverse portfolio includes projects in a wide range of markets in more than 91 countries, all 50 U.S. states, and the District of Columbia.

Challenge

Overcome the bandwidth limitations and expense of MPLS to deliver high-quality voice over IP and increase the speed of transferring large project files while reducing WAN costs

Solution

Deploy the EdgeConnect SD-WAN edge platform at 29 facilities worldwide, replacing MPLS with dual bonded commodity internet links and applying path conditioning with quality of service, as well as implementing the optional Unity Boost WAN optimization performance pack to accelerate key applications and large file transfers

Results

- > Assured quality of voice over IP calls, maintaining end user satisfaction
- > Gained 40X increase in branch-to-branch throughput, improving application performance
- > Accelerated Boost-enabled applications by 90 percent
- > Increased available bandwidth from 3 Mbps to 100 Mbps on average
- > Reduced time to upload a 1 gigabyte file from 48 minutes to 1 minute, 25 seconds
- > Lowered WAN costs by 45 percent per month
- > Improved network uptime with sub-millisecond failover
- > Simplified WAN edge administration and troubleshooting, freeing time for other projects



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