



How WAN Optimization Can Drive Top-Line Revenue

Boosting application delivery and response time across a global network can improve collaboration and productivity among an increasingly global and mobile workforce.

Global Business Challenges

A convergence of trends is creating a perfect storm for IT professionals tasked with providing secure, reliable access to applications and other critical corporate information.

Many organizations are expanding—both physically and virtually—to compete on a global scale. At the same time, IT organizations are consolidating data centers rapidly, utilizing virtualization (including virtualized desktops), cloud and other emerging technologies to reduce capital expenses, improve operational efficiencies and security, and harness a fast-growing repository of structured and unstructured data. Finally, an increasingly mobile workforce is demanding seamless access to information wherever it resides—often using personal devices.



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These potentially conflicting trends are putting a strain on corporate networks as more users attempt to access desktop infrastructures, including applications and services, from remote offices or through mobile devices. A recent study by Enterprise Strategy Group found that poor application performance was the primary challenge for organizations delivering corporate applications and/or IT services to remote offices.¹

Slow, unreliable application response times, caused by distance and latency, can degrade workforce productivity, erode customer service and, ultimately, inhibit business growth. Often, IT organizations are forced to compromise flexibility, security or cost-effectiveness in order to get better performance. As a result, IT managers are looking for ways to improve application delivery and performance to enable their workforce to access critical data from any location at any time, without sacrificing security. The goal is to consolidate critical data while fostering seamless communications and collaboration and ensuring that everyone is working from a consistent set of data in real time.

Increasingly, IT organizations understand that WAN optimization holds the key to addressing these challenges. Deployed across all end points—not just within the data center—WAN optimization enables IT to build an infrastructure that helps meet current and future business needs, because it lets them put data where it makes sense from a business perspective, without having to worry about application performance.

Accelerating Applications to Improve Productivity

In an increasingly competitive global economy, where every minute counts, WAN optimization plays a major role in driving performance. An IDC study of customers that had deployed WAN optimization appliances found that, on average, end users gained more than 15 hours of additional productive time annually per user—an average savings of more than \$2.4 million annually—and time-to-market of new revenue-generation activities improved by more than 6.5 days.

¹ "Remote Office/Branch Office Technology Trends," July 2011, Enterprise Strategy Group

WAN Optimization Improves Employee and Customer Satisfaction at Hilton Grand Vacations



Hilton Grand Vacations, a subsidiary of Hilton Hotels Corp., was experiencing a surge in business due to

the increasing popularity of its timeshare vacation properties. With sales offices in New York, Orlando, Japan and Guam, and with properties all over the world, the company found that processing contracts and serving its ever-larger customer base was becoming a bigger challenge each day.

The company decided to centralize its technology operations primarily in its Orlando, Fla., office, to reduce infrastructure and maintenance costs, maintain strong configuration management standards and provide higher service levels to customers. IT personnel quickly realized, however, that suboptimal connectivity to the main data centers was causing latency issues that were delaying critical business operations such as contract approvals.

"When you're processing a contract, time is of the essence. You don't want delays due to technology issues," said Rich Jackson, vice president of technology operations at Hilton Grand Vacations. "As you can imagine, having a customer sitting in front of you while you're waiting on a computer process is not an ideal situation."

Jackson's team concluded that WAN optimization was the best way to address the latency issues, and chose Riverbed Technology's Steelhead™ WAN optimization solution. Steelhead's data reduction capabilities have reduced the company's bandwidth utilization up to 80 percent, which has reduced latency and improved application performance. Exchange email and Windows file services are faster for remote offices. More importantly, WAN optimization has helped reduce contract process time from 30 minutes to just a minute or two, which Jackson said has had a "huge effect" on customer and employee satisfaction.

"It sounds simple, but being able to type faster or see screens move more quickly can result in significant savings or even help to increase revenue," said Miles Kelly, senior director of product marketing at Riverbed Technology.

The Wisconsin Department of Children & Families, for example, relies on WAN optimization technology to improve application performance for its VMware View universal client solution across remote locations. The solution delivers LAN-like speeds and has reduced weekly WAN traffic by an average of 76 percent. Agency officials predict the WAN optimization solution will pay for itself in two years.

Reducing WAN traffic and improving response times can drive business-specific benefits as well. A financial services company, for example, can reduce the time it takes to fill out mortgage applications by equipping its brokers with laptops running WAN optimization client software. Or a hotel chain that

sells vacation timeshares can use WAN optimization to speed up response times to remote offices to improve the sales process (see sidebar on page 2).

WAN optimization also plays a key role in organizations that have expanded their physical footprint, either organically or through acquisition, and are now looking to consolidate dispersed server, desktop and application infrastructures into centralized data centers.

"If an organization has grown from 15 to 100 remote offices, each with its own local application infrastructure, the challenge to consolidate that into a centralized infrastructure is significant," said Kelly. "When you create a significant distance between end users and their applications, the performance is significantly impacted."

CSX Corp. experienced this scenario firsthand. A leading transportation company with a network that spans approximately 21,000 miles in the U.S. and connects to more than 70 ocean, river and lake ports, CSX was feeling the impact of a massive IT consolidation effort that centralized 98 percent of all server-based services into a single data center.

The consolidation significantly degraded the performance of basic services such as Web browsing and email to remote users, many of whom found they had to wait as long as 10 minutes to access Excel or other data. Deploying Riverbed Steelhead appliances across its enterprise network enabled CSX to remove an average of 15 terabytes of duplicate data from the WAN each month. WAN optimization appliances enabled CSX to improve performance of its key enterprise applications without having to add more bandwidth. End users experienced productivity gains using PCs that were effectively running five times faster than previously.

"CSX understands that speed equals value in their business," said Kelly. "For them, the value of WAN optimization comes from the ability to gain back time for their workforce."



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Key Drivers of Application Acceleration

WAN optimization enables IT to consolidate applications on a centralized data center yet still meet the performance requirements of end users in remote locations. A successful WAN optimization deployment and its subsequent impact on application acceleration requires three key elements:

- **Data streamlining:** Deduplication—the process of eliminating redundant requests for content—is what Kelly calls “table stakes” for WAN optimization. Data streamlining frees up space on the WAN and can significantly increase effective bandwidth capacity.
- **Transport streamlining:** Network protocols such as TCP, UDP and RDP have inherent inefficiencies. WAN optimization eliminates these inefficiencies, allowing network traffic to ramp up faster, utilize more rated throughput capacity, and prioritize key applications.
- **Application streamlining:** The ability to optimize application-specific protocols such as CIFS can improve performance of mission-critical applications such as SharePoint, Outlook and Exchange. Reducing application protocol chattiness can speed applications by a factor of 20 or more, allowing operations that previously took hours to complete in minutes or seconds, regardless of the distances involved.

Leveraging these three elements can eliminate as much as 95 percent of extraneous network traffic, Kelly said. Combined with techniques such as application prioritization, which improves quality of service by enabling IT to allocate minimum and maximum bandwidths and prioritize applications based on their latency sensitivity, WAN optimization can deliver benefits to both IT and end users, said Kelly.

“End users get the application performance they require to be more productive, and IT gets the centralized control they need to ensure network efficiency, reliability and security,” he said.

WAN Optimization: An Emerging Network Standard

Many IT organizations are discovering that WAN optimization is more than just a physical appliance that sits in a data center. WAN optimization solutions can be deployed across the entire enterprise—within public or private clouds, in VDI environments, on remote laptops and other mobile devices. The key to achieving true application performance improvements, without compromising security or end-user flexibility, lies in IT’s ability to extend WAN optimization to all end points on the network.

“WAN optimization can and should be a network standard,” said Kelly, who likened its adoption curve to other emerging technologies such as virtualization and cloud services. “Virtualization deployments began as skunkworks projects before making their way into the data center, and now they’re pervasive,” he said. “We see a similar path evolving for WAN optimization.”

As more enterprises deploy WAN optimization in this manner, they’ll begin to see strategic business value. The ability to roll out new applications quickly and accelerate performance, while maintaining a secure network and providing the flexibility and access end users have come to expect, can be a competitive differentiator in an increasingly global marketplace. ■



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